Appendix to:

EFSA (European Food Safety Authority), 2018. Conclusion on the peer review of the pesticide risk assessment of the active substance 1,3-dichloropropene. EFSA Journal 2018;16(11):5464, 88 pp. doi:10.2903/j.efsa.2018.5464

© European Food Safety Authority, 2018

### Appendix A – List of end points for the active substance and the representative formulation

#### Identity, Physical and Chemical Properties, Details of Uses, Further Information (Regulation (EU) N° 283/2013, Annex Part A, points 1.3 and 3.2)

| Active substance (ISO Common Name) | An ISO Common will not be allocated for this active substance 1,3-dichloropropene (common abbreviation 1,3-D) |
|-----------------------------------|---------------------------------------------------------------------------------------------------------|
| Function (e.g. fungicide)        | Nematicide                                                                                              |
| Rapporteur Member State          | Spain                                                                                                   |
| Co-rapporteur Member State       | France                                                                                                  |

#### Identity (Regulation (EU) N° 283/2013, Annex Part A, point 1)

| Chemical name (IUPAC) | (EZ)-1,3-dichloropropene                                      |
|-----------------------|---------------------------------------------------------------|
| Chemical name (CA)    | 1,3-dichlor-1-propene                                        |
| CIPAC No              | 675                                                           |
| CAS No                | 542-75-6                                                     |
| EC No (EINECS or ELINCS) | 208-826-5                                                   |
| FAO Specification (including year of publication) | No FAO Specification available                           |
| Minimum purity of the active substance as manufactured | 1,3-Dichloropropene (cis + trans isomer), 970 g/kg |
| | 1,3-Dichloropropene, cis isomer, 450 g/kg.          |
| Identity of relevant impurities (of toxicological, ecotoxicological and/or environmental concern) in the active substance as manufactured | 1,2-dichloropropane (0.1 g/kg)  |
| | 1,1,2-trichloroethane (1 g/kg)                        |
| | Open for others                                         |
| Molecular formula     | C₃H₄Cl₂                                                      |
| Molar mass            | 110.97 g/mol                                                 |
| Structural formula    | ![Structural formula](image)                                |
### Physical and chemical properties (Regulation (EU) N° 283/2013, Annex Part A, point 2)

| Property                                      | cis-isomer (98.1%) | trans-isomer (97.8%) |
|-----------------------------------------------|--------------------|----------------------|
| **Melting point (state purity)**              |                    |                      |
| Freezing point:                               | – 85 °C (188 K)    | < –25 °C (lowest temperature achieved in the test). |
| **Boiling point (state purity)**              |                    |                      |
| cis-isomer (98.1%):                           | boiling point:     | Boiling point:       |
| Boiling point:                                | 103.8 – 105.2 °C   | 114.5 °C             |
| trans-isomer (97.8%):                         |                    |                      |
| **Temperature of decomposition (state purity)**|                    | --                   |
| **Appearance (state purity)**                 |                    |                      |
| Technical: clear colourless liquid            | cis-isomer:        | cis-isomer:          |
| cis-isomer: slightly yellow clear liquid       | clear colourless liquid at 20°C | trans-isomer:        |
| trans-isomer:                                 | clear colourless liquid at 20°C |                      |
| **Vapour pressure (state temperature, state purity)** |                    |                      |
| cis-isomer (98.1%):                           | 3760 Pa at 20°C    | 2982 Pa at 25°C      |
| 4850 Pa at 25°C                               |                     |                      |
| trans-isomer (97.8%):                         |                    |                      |
| **Henry’s law constant**                      |                    |                      |
| cis-isomer (98.1%):                           | Henry’s Law Constant = 170 Pa m³ mol⁻¹ (20 °C) | Henry’s Law Constant = 101 Pa m³ mol⁻¹ (20 °C) |
| trans-isomer (97.8%):                         |                    |                      |
| **Solubility in water (state temperature, state purity and pH)** | cis-isomer (98.1%) (20 °C): 2.45 g/L | trans-isomer (97.8%) (20 °C): 2.52 g/L |
| Water solubility is not pH dependent          |                    |                      |
| **Solubility in organic solvents (state temperature, state purity)** | Technical (98.7%) at 25°C |                      |
| Technical: clear colourless liquid            |                    |                      |
| cis-isomer: slightly yellow clear liquid       | n-octanol: > 250 g/L | n-octanol: > 250 g/L |
| trans-isomer: clear colourless liquid at 20°C | n-heptane: > 250 g/L | n-heptane: > 250 g/L |
| xylene                                        | 1,2-dichloethane:  | 1,2-dichloethane:    |
| methanol                                      | > 250 g/L          | > 250 g/L            |
| acetone                                       | > 250 g/L          | > 250 g/L            |
| ethyl acetate                                 | > 250 g/L          | > 250 g/L            |
| **Surface tension (state concentration and temperature, state purity)** | cis-isomer (98.1%): 69.6 ± 0.4 mN/m at 20 °C (90% saturated solution) - not surface active | trans-isomer (97.8%): 61.0 mN/m at 21 °C (1 g/L solution) - not surface active |
| **Partition coefficient (state temperature, pH and purity)** | cis-isomer (98.1%): log K<sub>ow</sub> = 1.82 at 20°C | trans-isomer (97.8%): log K<sub>ow</sub> = 2.1 at 20°C |
| cis-isomer (98.1%):                           | log K<sub>ow</sub> = 1.82 at 20°C | trans-isomer (97.8%): log K<sub>ow</sub> = 2.1 at 20°C |
| **Dissociation constant (state purity)**      |                    |                      |
| cis-isomer (98.1%):                           | Not applicable. No ionisable compound. | trans-isomer (97.8%): |
| trans-isomer (97.8%):                         |                      | Not pH dependent.    |
UV/VIS absorption (max.) incl. $\varepsilon$
(state purity, pH)

| Molar extinction          | nm | L M$^{-1}$ cm$^{-1}$ |
|---------------------------|----|---------------------|
| Neutral (Distilled water) | 201.5 | 4741 |
| Acidic (0.1 M aqueous HCl) | 202.7 | 4409 |
| Basic (0.1 M aqueous NaOH) | 209.2 | 2668 |

UV/Vis: There is not appreciable absorbance at any wave length above 250 nm.

**cis-isomer:**

**trans-isomer:**

| Molar extinction          | nm | L M$^{-1}$ cm$^{-1}$ |
|---------------------------|----|---------------------|
| Neutral (distilled water, pH = 6.3) | 201.0 | 7220 |
| Acidic (0.1 M aqueous HCl, pH = 1.0) | 204 | 8520 |
| Basic (0.1 M aqueous NaOH, pH = 13.0) | 267 | 51.1 |

UV/Vis: Only at very basic pH (pH = 13.0) absorbance above 250 nm is observed probably due to the formation of a hydrolysis product.

**Technical:**

| Molar extinction          | nm | L M$^{-1}$ cm$^{-1}$ |
|---------------------------|----|---------------------|
| Neutral (methanol)        | 205 | 7665 |
| Acidic (0.1 M HCl in methanol containing 10% water) | 203.5 | 7792 |
| Basic (0.1 M NaOH in methanol containing 10% water) | 215.5 | 1716 |

UV/Vis: There is not appreciable absorbance at any wave length above 250 nm.

**Flammability (state purity)**

**Technical (98.7%):** Non-flammable (contact with water)

**Explosive properties (state purity)**

**Technical (98.7%):** Technical 1,3-dichloropropene is not explosive.

**Oxidising properties (state purity)**

**Technical (95.9%):** Not oxidising
Summary of representative uses evaluated, for which all risk assessments needed to be completed (Regulation (EU) N° 284/2013, Annex Part A, points 3, 4)

| Crop and/or situation (a) | Zone          | Product code | Formulation | Application | Application rate per treatment | PHI (days) | Remarks: (m) |
|--------------------------|---------------|--------------|-------------|-------------|-------------------------------|------------|--------------|
| Fruiting vegetables      | S Zone Europe | GF-3035      | AL Other liquids to be applied, undiluted | Direct Injection | One, every two years | NA 150 | Check the level of nematode population in soil before proceeding to a 1,3-D application. Injection of the undiluted formulation in the soil and soil surface sealing with a roller Minimum interval between application and planting of following crop is 28 days |
|                          |               |              |             |             |                               |            |              |
|                          |               |              |             |             |                               |            |              |

GF-3035 - EU S. European Zone Uses
| Crop and/or situation (a) | Zone | Product code | FG or I (b) | Pests or Group of pests controlled (c) | Formulation | Application | Application rate per treatment | PHI (days) (l) | Remarks: (m) |
|--------------------------|------|--------------|------------|--------------------------------------|-------------|------------|-------------------------------|--------------|-------------|
| Fruiting vegetables (tomato, pepper, eggplant, cucumber, melon, watermelon) | S Zone Europe | GF-3036 | G | Range of Pests: (Nematodes) MELGSP; HETDSP; PRATSP | EC Emulsifiable concentrate | Preplant (Spring-Autumn) | One, every two years | NA | 200 | Maximum concentration in water is 2 per thousand (2 liters on 1,000 liters of water) to avoid problems of corrosion on pumps | 226 | NA | Check the level of nematode population in soil before proceeding to a 1,3-D application. Minimum interval between application and planting of following crop is 28 days |

Remarks:
(a) For crops, the EU and Codex classifications (both) should be used; where relevant, the use situation should be described (e.g. fumigation of a structure)
(b) Outdoor or field use (F), glasshouse application (G) or indoor application (I)
(c) e.g. biting and sucking insects, soil born insects, foliar fungi, weeds
(d) e.g. wettable powder (WP), emulsifiable concentrate (EC), granule (GR)
(e) GCPF Codes - GIFAP Technical Monograph No 2, 1989
(f) All abbreviations used must be explained
(g) Method, e.g. high volume spraying, low volume spraying, spreading, dusting, drench
(h) Kind, e.g. overall, broadcast, aerial spraying, row, individual plant, between the plants - type of equipment used must be indicated
(i) g/kg or g/l
(j) Growth stage at last treatment (BBCH Monograph, Growth Stages of Plants, 1997, Blackwell, ISBN 3-8263-3152-4), including where relevant, information on season at time of application
(k) The minimum and maximum number of application possible under practical conditions of use must be provided
(l) PHI - minimum pre-harvest interval
(m) Remarks may include: Extent of use/economic importance/restrictions
Further information, Efficacy

Effectiveness (Regulation (EU) N° 284/2013, Annex Part A, point 6.2)

Effectiveness

| **It is considered that it has been established for or several representative uses that the plant protection product containing 1,3-Dichloropropene, consequent on application consistent with good plant protection practice and having regard to realistic conditions of use is sufficiently effective on soil pathogen nematodes.** |

Adverse effects on field crops (Regulation (EU) N° 284/2013, Annex Part A, point 6.4)

Adverse effects on field crops

| **No adverse effects on fruiting vegetables, solanaceous (tomato, pepper and eggplant) and cucurbitaceous crops (cucumber, zucchini, melon and water melon) are expected to happen considering the proposed GAP and the representative product.** |

Adverse effects on greenhouse crops

| **No adverse effects on fruiting vegetables, solanaceous (tomato, pepper and eggplant) and cucurbitaceous crops (cucumber, zucchini, melon and water melon) are expected to happen considering the proposed GAP and the representative product.** |

Observations on other undesirable or unintended side-effects (Regulation (EU) N° 284/2013, Annex Part A, point 6.5)

Observations on other undesirable or unintended side effects

| **No unacceptable side effects are expected to happen on yield and quality of plant and plant products, on the processing procedure, on succeeding and adjacent crops considering the proposed GAP and the representative products on field and greenhouse uses. For other possible undesirable side-effects, please see the other sections.** |

Groundwater metabolites: Screening for biological activity (SANCO/221/2000-rev.10-final Step 3 a Stage 1)

| **Activity against target organism** | **CAC** | **(EZ)-3-chloroallyl alcohol** |
|---|---|---|
| Data gap | Data gap | Data gap |
Methods of Analysis

Analytical methods for the active substance (Regulation (EU) No 283/2013, Annex Part A, point 4.1 and Regulation (EU) No 284/2013, Annex Part A, point 5.2)

| Technical a.s. (analytical technique) | GC-TCD with a DB-1701 capillary column. External standard calibration. |
|-------------------------------------|-------------------------------------------------------------------------|
| Impurities in technical a.s. (analytical technique) | GC-TCD and GC-FID. External standard calibration. GC-FID with a DB-1701 capillary column. External standard calibration. Method for relevant impurity 1,2-dichloropropane. |
| Plant protection product (analytical technique) | GF-3035 (Telone II) and GF-3036 (Telone Drip) |
| | GC-FID with a DB-5MS capillary column. External or internal standard (naphthalene) calibration. GC-FID with a DB-1701 capillary column. External standard calibration. Method for relevant impurity 1,2-dichloropropane |
| | Data gap: method for 1,1,2-trichloroethane |

Analytical methods for residues (Regulation (EU) No 283/2013, Annex Part A, point 4.2 & point 7.4.2)

Residue definitions for monitoring purposes

| Food of plant origin | (E-) and (Z-)1,3-dichloropropene ( provisionally set as parent (by default) and impurities, pending upon the toxicity of these impurities) |
| Food of animal origin | Not necessary for representative use |
| Soil | (E-) and (Z-)1,3-dichloropropene, (E-) and (Z-) chloroacrylic acid, (E-) and (Z-)3-chloroallyl alcohol |
| Sediment | (E-) and (Z-)1,3-dichloropropene |
| Water surface | (E-) and (Z-)1,3-dichloropropene and (E-) and (Z-)3- chloroacrylic acid, (EZ)-3-chloroallyl alcohol |
| Drinking/ground | (E-) and (Z-)1,3-dichloropropene and (E-) and (Z-)3- chloroacrylic acid (E-) and (Z-)3-chloroallyl alcohol |
| Impurities: (1,2 dichloropropane, 2-M16, 3-M15, 4-M8, 5a-M5, 5b-M7, 5c-M11, 6-M21, 7-M25, 8a-M6, 8b-M10, 8c-M12, 9a-M23, 9B-M26, 10-M1, 11-M4, 12-M13, M-17 and 1,1,2 trichloroethane (open for all) |
| Air | (E-) and (Z-)1,3 Dichloropropene |
| Body fluids and tissues | (E-) and (Z-)1,3 Dichloropropene and mercapturic acid conjugates of (E-) and (Z-)1,3 Dichloropropene |
Monitoring/Enforcement methods

Food/feed of plant origin (analytical technique and LOQ for methods for monitoring purposes)

Method GRM 99.09.R1. (high acidic crops)  
GC-MS using a DB-VRX capillary column (2-bromo-1-chloropropane as an internal standard). Monitoring three characteristic ions, m/z 75 (for quantitation), 110, and 112 (both independently for confirmation). \( \text{LOQ} = 0.003 \) mg/kg. Method validated by an independent laboratory.  
Data gap: extraction efficiency

Method GHE-P-9569 (cereals and dry crops, high aqueous crops, acidic crops, and oily crops)  
GC-ECD using a nonpolar capillary column, DB-624. Confirmatory method: GC-ECD using a polar capillary column. \( \text{LOQ} = 0.005 \) mg/kg for both \( \text{cis} \) and \( \text{trans} \)-1,3-D. Method validated by an independent laboratory for two representative crops (high aqueous crops and oily crops).  
Data gaps: additional validation data for the confirmatory method and extraction efficiency

Food/feed of animal origin (analytical technique and LOQ for methods for monitoring purposes)

No method required, since no residue definition is proposed.

Soil (analytical technique and LOQ)

Method GRM 94.13. The extraction of 1,3 D and 1,2 dichloropropane from soil is accomplished by one of two methods:  
For low-level range (0.0002-0.2 mg/kg), a slurry of soil and water is heated and stirred. The volatile analytes are purged by sparging with helium and are captured on a sorbent-containing trap.  
For the high-level range (0.2-160 mg/kg), the soil sample is extracted with methanol. An aliquot of the methanol is diluted with water and then sparged with helium. The analytes are captured on a sorbent-containing trap.  
The analytes are desorbed and analyzed by GC-MS using a DB-VRX capillary column. The method utilizes 2-bromo-1-chloropropane as an internal standard. \( \text{LOQ} = 0.0002 \) mg/kg for each isomer \( \text{cis} \) and \( \text{trans} \).

Method GRM 94.18 (\( \text{cis} \) and \( \text{trans} \)-3-chloroallyl alcohol).  
GC-MS, LOQ: 0.0004 mg/kg for each isomer (fortified 0.0004 – 2.09 mg/kg)

Method GRM 94.17 (\( \text{cis} \) and \( \text{trans} \)-3-chloroacrylic acid).  
GC-MS, LOQ: 0.0002 mg/kg for each isomer (fortified 0.0002 – 2.0 mg/kg)

Data gap: additional validation data for the confirmatory methods
Water (analytical technique and LOQ)

**Method GRM 94.11.** The extraction of 1,3-D (cis and trans) and 1,2-dichloropropane from water and analysed by GC-MS. 1,3 D (two characteristic ions, m/z 75 and m/z 112) and 1,2-dichloropropane (two characteristic ions, m/z 63 and m/z 67) using a DB-VRX capillary column. The method utilises 2-bromo-1- chloropropane as an internal standard. Additional ions (e.g., m/z 110) may be used for confirmation. \( \text{LOQ} = 0.05 \mu g/L \) for each isomer (cis and trans) (Validated by an independent laboratory).

Data gap: additional validation data for the confirmatory method

**Method GRM 94.15 (cis and trans-3-chloroallyl alcohol).**

**Method GRM 94.14 (cis and trans-3-chloroacrylic acid).**

(Air origin not reported)

**Method:** GC-MS, \( \text{LOQ} = 0.1 \mu g/L \) for each isomer.

Air (analytical technique and LOQ)

Body fluids and tissues (analytical technique and LOQ)

**Method: HET DR-0349-4926-001.** For cis and trans 1,3-D mercapturic acid conjugates in urine. Derivatization to form the pentafluorobenzyl derivatives of 1,3-D MA (mercapturic acid). Internal standard: D4 analogs of cis- and trans-1,3-D MA (mercapturic acid conjugates of 1,3-D. Analysis by GC with negative chemical ionisation/tandem MS (GC/NCI/MS/MS) using a DB-1701 capillary column. Three characteristic ions, m/z 107, 109, and 111 are monitored. \( \text{LOQ} = 0.00025 \text{ mg/kg} \) (total of both isomers).

Data gap: additional validation data for the confirmatory method

**GC-ECD.** Two different GC-ECD conditions are used for primary (e.g. GC on a low-polar stationary phase DB-624) and confirmatory (e.g. GC on a polar carbowax-type BP-20 stationary phase) method. \( \text{LOQ} = 0.05 \text{ mg/L} \) (total of both isomers).

Data gap: monitoring method in body tissues

Classification and labelling with regard to physical and chemical data (Regulation (EU) No 283/2013, Annex Part A, point 10)

**Substance**

Harmonised classification according to Regulation (EC) No 1272/2008 and its Adaptations to Technical Process [Table 3.1 of Annex VI of Regulation (EC) No 1272/2008 as amended]¹:

Peer review proposal for harmonised classification according to Regulation (EC) No 1272/2008:

| 1,2-dichloropropane |
|---------------------|
| /                   |

¹ Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. OJ L 353, 31.12.2008, 1-1355.

² It should be noted that harmonised classification and labelling is formally proposed and decided in accordance with Regulation (EC) No 1272/2008.
## Impact on Human and Animal Health

### Absorption, distribution, metabolism and excretion (toxicokinetics) (Regulation (EU) N° 283/2013, Annex Part A, point 5.1)

| Rate and extent of oral absorption/systemic bioavailability |
|-------------------------------------------------------------|
| Oral administration in rodents (mouse, rat):               |
| >80% absorption (76-97%) based on urinary excretion,       |
| exhaled air elimination, carcass and cage wash             |
| radioactivity found at 48 hours.                           |
| Inhalation administration in rat (nose-only):              |
| ~50% absorption (mostly through the lower respiratory      |
| tract (73-79%) against upper respiratory tract (11-16%).   |
| Higher concentration of trans-dichloropropene isomer       |
| against cis-dichloropropene isomer was absorbed.           |

| Toxicokinetics |
|----------------|
| Oral administration in rodents (mouse, rat): data gap      |
| Inhalation administration in rat:                          |
| - plateau values in blood at 1h (≤90 ppm) or 3h (300 ppm)  |
| - first elimination phase rapid (blood half-life 3-40 min) |
| followed by a slower phase (blood half-life 30-40 min).     |

| Distribution |
|--------------|
| Oral administration in rodents (mouse, rat):               |
| Widely and uniformly distributed with highest values in    |
| non-glandular stomach, glandular stomach, bladder, liver  |
| and kidneys.                                              |
| Effects on non-protein sulphydryls content and molecular   |
| binding confirmed the distribution in stomach (non        |
| glandular >glandular), liver, kidney and bladder.          |
| Inhalation administration in rat:                          |
| No information about the distribution in tissues.           |
| Effects on non-protein sulphydryls content confirmed the   |
| distribution in liver and kidney, but not in lung.         |

| Potential for bioaccumulation |
|------------------------------|
| No evidence of accumulation  |

| Rate and extent of excretion |
|------------------------------|
| Oral administration in rodents: |
| Rapid elimination (99% within 48 h), mainly through  |
| urine (~60%), faeces (17-5%) and expiration of carbon  |
| dioxide (15-28%).              |
| Urinary half-lives: 5.43–5.91 h in the rat, and 6.60–9.62 |
| h in the mouse (single dose). |
| Inhalation administration in rat: |
| Initial rapid and pronounced elimination phase (blood     |
| half-life 3-40 min) followed by a slower second phase    |
| (blood half-life 30-40 min).                                |

| Metabolism in animals |
|-----------------------|
| Extensively metabolised.|
| Three metabolic pathways identified: |
| -Main: glutathione conjugation followed by oxidation |
| -Secondary: hydrolysis of 1,3-D |
| -Trace: oxidation of 1,3-D |
| Major metabolite: 1,3-D mercapturic acid |

| In vitro metabolism |
|---------------------|
| No data available – data gap |

| Toxicologically relevant compounds (animals and plants) |
|--------------------------------------------------------|
| (E,Z)-1,3-Dichloropropene, (EZ)-3-chloroallyl alcohol, |
| 3-Chloroacrylic acid                                    |

| Toxicologically relevant compounds (environment)       |
|--------------------------------------------------------|
| (E,Z)-1,3-Dichloropropene, (EZ)-3-chloroallyl alcohol, |
| 3-Chloroacrylic acid, 1,2-dichloropropane, 1,1,2-      |
| trichloroethane                                        |
## Acute toxicity (Regulation (EU) No 283/2013, Annex Part A, point 5.2)

|                         | Value                           | Classification |
|-------------------------|---------------------------------|----------------|
| Rat LD₅₀ oral           | 150 mg/kg bw (m/f combined)     | H301           |
| Rat LD₅₀ dermal         | 333 mg/kg bw (m/f combined)     | H311           |
| Rat LC₅₀ inhalation     | 2.7-4.7 mg/l (whole-body)       | H331           |
| Skin irritation         | Irritant                        | H315           |
| Eye irritation          | Irritant                        | H319           |
| Skin sensitisation     | Buehler test with 3 applications.| H317 Cat 1A    |
| Phototoxicity           | No data available – not required|                |

## Short-term toxicity (Regulation (EU) No 283/2013, Annex Part A, point 5.3)

| Target organ / critical effect | Value                                                                 |
|--------------------------------|------------------------------------------------------------------------|
| **Oral:**                      | Rats: hyperkeratosis of the stomach and basal cells hyperplasia of non glandular mucosa |
|                                | Mice: decreased body weight gain                                         |
|                                | Dog: decreased body weight, hypochromic and microcytic anemia, increased hematopoiesis in bone marrow and spleen |
| **Inhalation:**                | Rat: hyperplasia of respiratory epithelium                              |
|                                | Mice: aggregates of mononuclear cells in submucosa of urinary bladder (f), and hyperplasia or respiratory epithelium |
| Relevant oral NOAEL            | 5 mg/kg bw per day (rat, 90 days)                                       |
|                                | 2.5 mg/kg bw per day (dog, 1 year)                                      |
|                                | ≤15 mg/kg bw per day (mice, 13-week)                                   |
| Relevant dermal NOAEL          | No data; none required                                                  |
| Relevant inhalation NOAEL      | 10 ppm (rat, 90 days)                                                   |
|                                | 10 ppm (mice, 90 days)                                                  |

## Genotoxicity (Regulation (EU) No 283/2013, Annex Part A, point 5.4)

| In vitro studies | Positive mutagenic effects were observed. in bacterial systems (±S9 mix) |
|                 | Positive effects for chromosome aberrations in mammalian (CHL) cells |
| In vivo studies | Some studies show clear indications for DNA fragmentation in vivo*; negative results are demonstrated in micronucleus*, UDS* and dominant lethal tests. |
|                 | *additional information acceptable with reservations |
| Photomutagenicity | No data. No required. |
| Potential for genotoxicity | The weight of evidence indicated that 1,3-D is an in vivo genotoxic agent for somatic cells, acting directly or after activation by cytochrome P450, and glutathione protects against the genotoxicity |
|                 | Data gap: new complete package of genotoxicity studies performed with well |
|                 | Mutagen Category 2 |

---

*Additional information acceptable with reservations.*
characterized batches and representative of current production of 1,3-D
Long-term toxicity and carcinogenicity (Regulation (EU) N° 283/2013, Annex Part A, point 5.5)

| Long-term effects (target organ/critical effect) | Oral: | Inhalation: |
|--------------------------------------------------|-------|-------------|
| Rats: stomach (basal cell hyperplasia of the non-glandular mucosa), liver (foci of altered cells) | | |
| Mice: urinary bladder (hyperplasia/hypertrophy) | | |
| Relevant long-term NOAEL | Oral: 2.5 mg/kg bw per day (2-year dietary study rats) | Inhalation: 20 ppm (2-year rat) |
| 10 mg/kg bw per day (2-year mice) | 5 ppm (2-year mice) |

Carcinogenicity (target organ, tumour type) | Mice: benign lung tumors and submucosal mesenchymal tumors in the urinary bladder. Rats: hepatocellular adenomas (and one carcinoma incidence) in liver |

| Relevant NOAEL for carcinogenicity | Oral: 2.5 mg/kg bw per day (rats) | Inhalation: 60 ppm (2-year rat) |
|----------------------------------|----------------------------------|----------------------------------|
| 10 mg/kg bw per day (mice) | 20 ppm (2-year mice) |

Reproductive toxicity (Regulation (EU) N° 283/2013, Annex Part A, point 5.6)

Reproduction toxicity

| Reproduction target / critical effect | Multigeneration rat study by inhalation: Decreased bodyweight, stomach and nasal lesions in parental animals No effects on reproduction and offspring |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Relevant parental NOAEL | 30 ppm |
|------------------------|-------|
| Relevant reproductive NOAEL | 90 ppm |
| Relevant offspring NOAEL | 90 ppm |

Developmental toxicity

| Developmental target / critical effect | Maternal: bodyweight decrease and liver weight changes (rat), sporadic weight losses (rabbit) Developmental: slightly higher incidence of foetal malformations (hydrocephaly, forelimb flexure, diffuse corneal cloudiness, convoluted ureter) in rabbit |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Relevant maternal NOAEL | 20 ppm (rabbit) |
|-------------------------|-----------------|
| < 20 ppm (rat, LOAEL)   |                 |
| Relevant developmental NOAEL | 60 ppm (rabbit) |
### Neurotoxicity (Regulation (EU) N° 283/2013, Annex Part A, point 5.7)

| Category                          | Description                           |
|-----------------------------------|---------------------------------------|
| Acute neurotoxicity               | No data-not required                   |
| Repeated neurotoxicity            | No data-not required                   |
| Additional studies                | No data not- required                  |

### Other toxicological studies (Regulation (EU) N° 283/2013, Annex Part A, point 5.8)

| Supplementary studies on the active substance | Description |
|-----------------------------------------------|-------------|
| Mechanism of tumorigenicity studies in male B6C3F1 and Fischer 344 Rats: | A dose related decrease of GSH levels in tissues (liver rats and lung mice) of treated animals was observed. No clear-cut evidence of an effect on either cell proliferation or apoptosis rates in target tissues were observed. 1,3-dichloropropene did not activate AhR, CAR, PXR or PPARα nuclear receptor in rat primary hepatocytes. |
| 28-day immunotoxicity study | no effect on the primary immune response to Sheep Red Blood Cells in rats, NOAEL 25 mg/kg bw per day. |

| Endocrine disrupting properties | Data gap |
|--------------------------------|----------|

| Studies performed on metabolites or impurities | Description |
|-----------------------------------------------|-------------|
| Metabolite 3-chloroacrylic acid: | Rat oral LD₅₀ 91 mg/kg bw Acute Tox 3 H301 |
| Rat, 4-week study via drinking water | NOAEL = 10 mg/kg bw per day based on decreased water consumption and related renal changes |
| Rat, 13-week study via drinking water | NOAEL = 10 mg/kg bw per day based on decreased water consumption and related renal changes |
| Negative in Ames, and mouse lymphoma | Developmental study rat: Maternal/developmental NOAEL = 25 mg/kg bw per day |
| Critical effects: decreased maternal bodyweight gain, food consumption, absolute and relative liver weight, deaths. Increased early resorptions, decreased foetal bodyweight. | Not teratogenic |
Metabolite (EZ)-3-chloroallyl alcohol:
- Rat oral LD₅₀ 91 mg/kg bw    Acute Tox 3  H₃⁰₁
- Rabbit dermal LD₅₀ 316 mg/kg bw    Acute Tox 3  H₃¹₁
- No skin irritation

Rat, 4-week study via drinking water
- NOAEL = 10 mg/kg bw per day based on periportal hepatotoxicity

Rat, 13-week study via drinking water
- NOAEL = 3 mg/kg bw per day based on periportal hepatotoxicity and decreased water consumption
- Negative in Ames
- Weak positive in mouse lymphoma. No follow-up in vivo assay.

Developmental study rat:
- Maternal/developmental NOAEL = 10 mg/kg bw per day
- Critical effects: decreased maternal bodyweight gain, food consumption, absolute and relative liver weight, decreased foetal bodyweight.
- Not teratogenic

Medical data (Regulation (EU) N° 283/2013, Annex Part A, point 5.9)

- Evidence of irritation to skin and respiratory system. A fatal poisoning reported by accidental ingestion. Aspiration into the lungs may occur during ingestion or vomiting, resulting in rapid absorption and injury to other body systems.
- Epidemiological studies: Unclear association between nephrotoxicity and appearance of tumors and exposure to 1,3-D.
- Proposed classification: STOT SE Cat 3, H₃₃₅ may cause respiratory irritation
- Proposed classification: Asp Tox Cat 1, H₃₀₄ may be fatal if swallowed and enters airways.

Summary (Regulation (EU) N°1107/2009, Annex II, point 3.1 and 3.6)

| Value (mg/kg bw (per day)) | Study | Uncertainty factor |
|----------------------------|-------|--------------------|
| Acceptable Daily Intake (ADI) | "*" | "*" |
| Acute Reference Dose (ARID) | "*" | "*" |
| Acceptable Operator Exposure Level (AOEL) | "*" | "*" |
| Acute Acceptable Operator Exposure Level (AAOEL) | "*" | "*" |

* Not concluded pending data gap for the genotoxic assessment
Dermal absorption  (Regulation (EU) N° 284/2013, Annex Part A, point 7.3)

Representative formulations
(GF 3035) drip injection application
(GF 3036) drip irrigation application

Main route of exposure is via 1,3-D inhalation. However, if dermal exposure would occur, 25% default value should be used.

Exposure scenarios (Regulation (EU) N° 284/2013, Annex Part A, point 7.2)

| Scenario                              | Classification |
|---------------------------------------|-----------------|
| Operators (GF 3035)                   | To be confirmed when genotoxicity and reference values will be concluded |
| Operators (GF 3036)                   | To be confirmed when genotoxicity and reference values will be concluded |
| Workers (GF 3035)                     | To be confirmed when genotoxicity and reference values will be concluded |
| Workers (GF 3036)                     | To be confirmed when genotoxicity and reference values will be concluded |
| Bystanders and residents (GF 3035)    | To be confirmed when genotoxicity and reference values will be concluded |
| Bystanders and residents (GF 3036)    | To be confirmed when genotoxicity and reference values will be concluded |

Classification with regard to toxicological data (Regulation (EU) N° 283/2013, Annex Part A, Section 10)

Substance : 1,3-Dichloropropene

Harmonised classification according to Regulation (EC) No 1272/2008 and its Adaptations to Technical Process [Table 3.1 of Annex VI of Regulation (EC) No 1272/2008 as amended]³:

- Acute toxicity Cat 3, H 301, Toxic if swallowed;
- Acute toxicity Cat 3, H311, Toxic in contact with skin;
- Acute toxicity Cat 3, H331, Toxic if inhaled;
- Irritating to skin”, Cat 2, H315;
- Ocular irritat. Cat 2, H319, Cause serious eye irritation;
- Skin sensitisation Cat 1, H317, May cause an allergic skin reaction.

Peer review proposal ⁴ for harmonised classification according to Regulation (EC) No 1272/2008:

- Acute toxicity Cat 3, H 301, Toxic if swallowed;
- Acute toxicity Cat 3, H311, Toxic in contact with skin;
- Acute toxicity Cat 3, H331, Toxic if inhaled;
- Irritating to skin”, Cat 2, H315;
- Ocular irritat. Cat 2, H319, Cause serious eye irritation;
- Skin sensitisation Cat 1A, H317, May cause an allergic skin reaction.
- STOT SE Cat 3, H335, May cause respiratory irritation.
- Asp. Tox. Cat 1, H304, May be fatal if swallowed and enters airways
- Mutagen Category 2
- Carcinogen Category 2

---

³ Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. OJ L 353, 31.12.2008, 1-1355.

⁴ It should be noted that harmonised classification and labelling is formally proposed and decided in accordance with Regulation (EC) No 1272/2008.
### Residues in or on treated products food and feed

#### Metabolism in plants (Regulation (EU) No 283/2013, Annex Part A, points 6.2.1, 6.5.1, 6.6.1 and 6.7.1)

| Primary crops (Plant groups covered) | Crop groups | Crop(s) | Application(s) | DAT (days) |
|--------------------------------------|-------------|---------|----------------|------------|
| **OECD Guideline 501**               | Fruit crops | Tomato  | 1 x 403 kg as/ha | 139        |
|                                      |             | Citrus  | 1 x 123 kg/ha   | 33, 48, 63 |
|                                      | Root crops* | Sugar beet | 1 x 90 kg/ha | 173        |
|                                      | Leafy crops | -       |                |            |
|                                      | Cereals/grass crops | - |        |            |
|                                      | Pulses/Oilseeds | Soybean | 1 x 403 kg as/ha | 84, 176   |
|                                      | Miscellaneous | -     |                |            |

* A non-GLP and TGL non-conform study conducted on sugarbeet is considered as supplementary data. Applications were done as directed soil application.

#### Rotational crops (metabolic pattern)

| Rotational crops (metabolic pattern) | Crop groups | Crop(s) | PBI (days) | Comments |
|--------------------------------------|-------------|---------|------------|----------|
| **OECD Guideline 502**               | Root/tuber crops | Carrots/Radish | 141 / 78 |          |
|                                      | Leafy crops | Lettuce | 91         |          |
|                                      | Cereal (small grain) | Wheat | 80, 148 |          |
|                                      | Other       | -       |            |          |

Rotational crop and primary crop metabolism similar?

Bare soil treated with 403 kg as/ha. No 1,3 D, or the alcohol or acid metabolite, was confirmed present in any of the harvested commodities. Same route of degradation as in primary crops assumed.

#### Processed commodities (standard hydrolysis study)

| Conditions | (%TAR) |
|------------|--------|
| -          | -      |

**OECD Guideline 507**

Residue pattern in processed commodities similar to residue pattern in raw commodities?

No residues of 1,3-D were detected at or above the LOQ in any of the crops from the residue trials (< 0.01 mg/kg). Consequently, no studies on industrial or domestic processing were triggered.

#### Plant residue definition for monitoring (RD-Mo)

**OECD Guidance, series on pesticides No 31**

\[ \text{E- and Z- 1,3-dichloropropene} \]

(Pesticides Peer Review Meeting: proposed RD for Mo and RA provisionally set as Parent (by default) and impurities, pending upon the toxicity of these impurities (restricted to fruit crops and pulses/oilseeds).

#### Plant residue definition for risk assessment (RD-RA)

\[ \text{E- and Z- 1,3-dichloropropene} \]

(Pesticides Peer Review Meeting: proposed RD for Mo and RA provisionally set as Parent (by default) and impurities, pending upon the toxicity of these impurities (restricted to fruit crops and pulses/oilseeds).

#### Conversion factor (monitoring to risk assessment)

1
Metabolism in livestock (Regulation (EU) N° 283/2013, Annex Part A, points 6.2.2, 6.2.3, 6.2.4, 6.2.5 6.7.1)

| OECD Guideline 503 and SANCO/11187/2013 rev. 3 (fish) | Animal | Dose (mg/kg bw/d) | Duration (days) | N rate/comment |
|------------------------------------------------------|--------|-------------------|----------------|----------------|
| Animals covered                                      | Laying hen | 11 mg/kg feed/day | 7              |                |
|                                                      | Goat/Cow   | 13.1 mg/kg feed/day | 5              |                |
|                                                      | Pig        |                    |                |                |
|                                                      | Fish       |                    |                |                |

No metabolism studies in poultry, lactating ruminants or pigs are required, since the representative uses are not normally fed to livestock. Metabolism studies provided can be considered as supplementary information.

As the log $K_{ow}$ of 1,3-dichloropropene is below 3, no metabolism study in fish is required.

| Time needed to reach a plateau concentration in milk and eggs (days) | 7 days (egg yolks), 4 days (egg whites) and 4 days (milk) |
|---------------------------------------------------------------------|---------------------------------------------------------|
| Animal residue definition for monitoring (RD-Mo) OECD Guidance, series on pesticides No 31 | Not necessary for representative uses |
| Animal residue definition for risk assessment (RD-RA) | Not necessary for representative uses |
| Conversion factor (monitoring to risk assessment) | N/A |
| Metabolism in rat and ruminant similar (Yes/No) (FAO, 2009) | Yes |
| Fat soluble residues (Yes/No) | No |

Residues in succeeding crops (Regulation (EU) N° 283/2013, Annex Part A, point 6.6.2)

| Confined rotational crop study (Quantitative aspect) OECD Guideline 502 | Residue levels in the rotational crop study were not significant. |
|------------------------------------------------------------------------|---------------------------------------------------------------|
| Field rotational crop study OECD Guideline 504                          | No study available. Based on confined rotational crop studies, no residues of 1,3 D expected in rotational crops |

Stability of residues (Regulation (EU) N° 283/2013, Annex Part A, point 6.1) OECD Guideline 506

| Plant products (Category) | Commodity | $T$ (°C) | Stability (Month) |
|---------------------------|-----------|----------|-------------------|
|                           |           |          | Cis 1,3 D | Trans 1,3 D |
| High water content        | Zucchini* | -18      | 1         | 1         |
| High oil content          | -         |          | -         | -         |
*The storage stability study in zucchini matrices showed stability for only 30 days for impurity M3 (1). For impurities M1 (10), M06 (8a), M10 (8b), M11 (5c), M12 (8c), M13 (12) stability cannot be established in zucchini.

| Animal     | Animal commodity | T (°C) | Stability (Month) |
|------------|------------------|--------|-------------------|
| Muscle     |                  |        |                   |
| Liver      |                  |        |                   |
| Kidney     |                  |        |                   |
| Lactating cow | Milk         |        |                   |
| Lactating cow | Egg           |        |                   |
| Lactating cow | Fat           |        |                   |
| Lactating cow | Cream         |        |                   |

It was considered not relevant to define a residue of concern in food of animal origin, because the representative use of 1,3-D is on fruiting vegetables, which are not normally fed to livestock. No storage stability data in animal commodities are required.
### Summary of residues data from the supervised residue trials (Regulation (EU) No 283/2013, Annex Part A, point 6.3) OECD Guideline 509, OECD Guidance, series on pesticides No 66 and OECD MRL calculator

| Crop          | Region/Indoor (a) | Residue levels (mg/kg) observed in the supervised residue trials relevant to the supported GAPs (b) | Recommendations/comments (OECD calculations) | MRL calculated (mg/kg) | HR (mg/kg) (c) | STMR (mg/kg) (d) |
|---------------|-------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------|----------------|-----------------|
| **Representative uses** | | | | | | |
| Tomatoes      | S-EU              | Soil injection 4 x < 0.01¹                                                                 |                                             | 0.01*                  | <0.01          | <0.01          |
|               | Indoor            | Drip irrigation 3 x < 0.01¹                                                                 |                                             | 0.01*                  | <0.01          | <0.01          |
| Pepper        | S-EU              | Soil injection 4 x < 0.01¹                                                                 |                                             | 0.01*                  | <0.01          | <0.01          |
|               | Indoor            | Drip irrigation 4 x < 0.01¹                                                                 |                                             | 0.01*                  | <0.01          | <0.01          |

| **Summary of the data on formulation equivalence OECD Guideline 509** | | | | | | |
| Crop          | Region | Residue data (mg/kg) | Recommendations/comments | | | |
|---------------|--------|----------------------|-------------------------| | | |

Note: Other available data in fruiting vegetables outside the EU (non GLP): tomatoes: 2 x < 0.01 mg/kg (Japan, indoor), 3 x < 0.01 mg/kg (USA, outdoor), melon 3 < 0.01 mg/kg (USA), cucumber, 3 < 0.01 mg/kg (Japan, indoor); eggplant, 2 < 0.01 mg/kg (Japan).

There is also residue data available on orange, peaches, plums, cherries, almonds, walnuts, wine grape, table grape, banana, pineapple, Chinese cabbage, broccoli, onion, melon, cucumber, eggplant, lettuce, spinach, green beans, cottonseed, peanuts, soybeans, potato, dry bean, carrots, radish, sugar beet (root), sugar beet (top) in which the level of residue was always < 0.01 mg/kg.

¹These residue trials showed no residue of 6 analysed impurities on tomato and pepper (impurities n. M3 (1), M16 (2), M15 (3), M07 (5 b), M11 (5 c) and M06 (8 a)). For further information see the confidential section in vol. 3 CA-B-4. M15 and M16 are not relevant, since they are not included in the current specifications. Regarding the other impurities, results are considered reliable only for impurity M3 (Not detected). For impurities M07, M11 and M06 the stability in the storage periods was not demonstrated.

(a): NEU or SEU for northern or southern outdoor trials in EU member states (N+SEU if both zones), Indoor for glasshouse/protected crops. Country if non-EU location.

(b): Residue levels in trials conducted according to GAP reported in ascending order (e.g. 3 x < 0.01, 0.01, 6x 0.02, 0.04, 0.08, 3x 0.10, 2x 0.15, 0.17). When residue definition for monitoring and risk assessment differs, use Mo/RA to differentiate data expressed according to the residue definition for Monitoring and Risk Assessment.

(c): HR: Highest residue. When residue definition for monitoring and risk assessment differs, HR according to residue definition for monitoring reported in brackets (HR(Mo)).

(d): STMR: Supervised Trials Median Residue. When residue definition for monitoring and risk assessment differs, STMR according to definition for monitoring reported in brackets (STMR(Mo)).
Inputs for animal burden calculations  N/A
Residues from livestock feeding studies (Regulation (EU) N° 283/2013, Annex Part A, points 6.4.1, 6.4.2, 6.4.3 and 6.4.4) OECD Guideline 505 and OECD Guidance, series on pesticides No 73

| Highest expected intake (mg/kg bw/d) | Beef cattle | Lamb | Dairy cattle | Lamb | Poultry | Fish |
|--------------------------------------|-------------|------|--------------|------|---------|------|
| (mg/kg DM for fish)                   | Ram/Ewe     |      | Breeding     |      | Broiler |      |
|                                     |             |      | Finishing    |      | Layer   |      |
|                                     |             |      |              |      | Turkey  |      |
|                                     |             |      |              |      |         |      |
| Intake >0.004 mg/kg bw               | Yes/No      | Yes/No | Yes/No     | Yes/No | Yes/No  | Fish intake >0.1 mg/kg DM |
| Feeding study submitted               | Not necessary | Not necessary | Not necessary | Not necessary | Not necessary |

| Representative feeding level (mg/kg bw/d, mg/kg DM for fish) and N rates | Level | Beef: Dairy | Level | Lamb: N | Level | N rate | Level | B or T: N | Level | N rate |
|------------------------------------------------------------------------|------|------------|------|---------|------|--------|------|----------|------|--------|
| Muscle                                                                  |      |            |      |         |      |        |      |          |      |        |
| Fat                                                                     |      |            |      |         |      |        |      |          |      |        |
| Meat<sup>b</sup>                                                        |      |            |      |         |      |        |      |          |      |        |
| Liver                                                                   |      |            |      |         |      |        |      |          |      |        |
| Kidney                                                                  |      |            |      |         |      |        |      |          |      |        |
| Milk<sup>a</sup>                                                        |      |            |      |         |      |        |      |          |      |        |
| Eggs                                                                    |      |            |      |         |      |        |      |          |      |        |

**Method of calculation**<sup>c</sup>

<sup>a</sup>: Estimated HR calculated at 1N level (estimated mean level for milk).

<sup>b</sup>: HR in meat calculated for mammalian on the basis of 20% fat + 80% muscle and 10% fat + 90% muscle for poultry.

<sup>c</sup>: The OECD guidance document on residues in livestock (series on pesticides 73) recommends three different approaches to derive MRLs for animal products; by applying a transfer factor (Tf), by interpolation (It) or by linear regression (Ln). Fill in method(s) considered to derive the MRL proposals.
### STMR calculations

| Median expected intake (mg/kg bw/d) | Ruminant | Pig/Swine | Poultry | Fish |
|-----------------------------------|----------|-----------|---------|------|
| Beef cattle                       |          |           |         |      |
| Dairy cattle                      |          |           |         |      |
| Ram/Ewe                           |          | Breeding  | Broiler |      |
| Lamb                              |          | Finishing | Layer   |      |
|                                 |          |           |         |      |
| Dairy cattle                      |          |           |         |      |
|                                |          |           |         |      |
| Pig/Swine                         |          |           |         |      |
| Broiler                           |          |           |         |      |
| Layer                             |          |           |         |      |
| Fish                              |          |           |         |      |
| Carp                              |          |           |         |      |
| Trout                             |          |           |         |      |

#### Representative feeding level (mg/kg bw/d, mg/kg DM for fish) and N rates

| Level | Beef: N Dairy: N | Level | Lamb: N Ewe: N | Level | N rate Breed/Finish | Level | B or T: N Layer: N | Level | N rate Carp/Trout |
|-------|------------------|-------|----------------|-------|---------------------|-------|-------------------|-------|------------------|
|       |                  |       |               |       |                     |       |                   |       |                  |

#### Mean level in feeding level

- **Muscle**
- **Fat**
- **Meat**
- **Liver**
- **Kidney**
- **Milk**
- **Eggs**

#### Method of calculation

(a): STMR in meat calculated for mammalian on the basis of 20% fat + 80% muscle and 10% fat + 90% muscle for poultry

(b): When the mean level is set at the LOQ, the STMR is set at the LOQ.

(c): The OECD guidance document on residues in livestock (series on pesticide 73) recommends three different approaches to derive MRLs for animal products: by applying a transfer factor (Tf), by intrapolation (It) or by linear regression (Ln). Fill in method(s) considered to derive the MRL proposals.
Processing factors (Regulation (EU) N° 283/2013, Annex Part A, points 6.5.2 and 6.5.3)
OECD Guideline 508 and OECD Guidance, series on testing and assessment No 96

| Crop (RAC)/Edible part or Crop (RAC)/Processed product | Number of studies\(^{\text{(a)}}\) | Processing Factor (PF) | Conversion Factor (CF\(_P\)) for RA\(^{\text{(b)}}\) |
|--------------------------------------------------------|---------------------------------|------------------------|---------------------------------|
| Representations uses                                    |                                 | Individual values      | Median PF                        |

\(^{\text{(a)}}\): Studies with residues in the RAC at or close to the LOQ should be disregarded (unless concentration)

\(^{\text{(b)}}\): When the residue definition for risk assessment differs from the residue definition for monitoring

Consumer risk assessment (Regulation (EU) N° 283/2013, Annex Part A, point 6.9)
Including all uses (representative uses and uses related to an MRL application).

1,3-D is proposed to be mutagenic and proposed to be classified as Mutagenic category 2. Therefore, toxicological reference values cannot be set and applied in a consumer risk assessment. Moreover, a consumer assessment with regard to residues of potentially relevant impurities was not possible due to lack of sufficient data.

**ADI**

| TMDI according to EFSA PRIMo                      | Not concluded pending data gap for the genotoxic assessment |
|--------------------------------------------------|-----------------------------------------------------------|
| NTMDI, according to (to be specified)             |                                                            |
| IEDI (% ADI), according to EFSA PRIMo            |                                                            |
| NEDI (% ADI), according to (to be specified)      |                                                            |
| Factors included in the calculations              |                                                            |

**ARfD**

| IESTI (% ARfD), according to EFSA PRIMo          | Not concluded pending data gap for the genotoxic assessment |
|--------------------------------------------------|-----------------------------------------------------------|
| NESTI (% ARfD), according to (to be specified)    |                                                            |
| Factors included in IESTI and NESTI               |                                                            |

Proposed MRLs (Regulation (EU) No 283/2013, Annex Part A, points 6.7.2 and 6.7.3)

In view of the proposed classification for 1,3-D as Mutagenic category 2, the safety of the MRLs derived by RMS at the default residue levels of 0.01* mg/kg could not be assessed, and it may be necessary to consider lower MRLs in the interest of consumer protection.

| Code\(^{(a)}\) | Commodity/Group | MRL/Import tolerance\(^{(b)}\) (mg/kg) and Comments |
|----------------|-----------------|---------------------------------------------------|
| Plant commodities                                  |                                                            |
| Representative uses                                |                                                            |
| 0231010 Tomatoes                                    |                                                            |
| 0231020 Peppers                                     |                                                            |
| 0231030 Eggplants                                   |                                                            |
| Animal commodities                                 |                                                            |
| MRLs for animal commodities are not required.      |                                                            |

\(^{(a)}\): Commodity code number, as listed in Annex I of Regulation (EC) No 396/2005
(b): MRLs proposed at the LOQ, should be annotated by an asterisk (*) after the figure.

**Environmental fate and behaviour**

**Route of degradation (aerobic) in soil (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.1.1)**

| Mineralisation after 100 days | 11.1-37.6 % after 63-77 d, 1,3-D-UL-\(^{14}\)C (n\(^5\)= 6)  
Sterile conditions: 4.7 % after 120 d (n= 1) |
|-------------------------------|---------------------------------------------------------------|
| Non-extractable residues after 100 days | 8.9-28.4 % after 49-77 d, 1,3-D-UL-\(^{14}\)C (n\(^6\)= 6)  
Sterile conditions: 44.8 % after 120 d (n= 1) |
| Metabolites requiring further consideration |
| - name and/or code, % of applied (range and maximum) | (EZ)-3-chloroallyl alcohol- 0.2-2 % at 35-15 d (n= 6)  
3-Chloroacrylic acid- 12.8-37.3 % at 35-28 d (n= 6)  
Sterile conditions: |

*Refers to combined isomers  
**Study did not run for 100 days for aerobic soils as degradation so rapid

**Route of degradation (anaerobic) in soil (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.1.2)**

| Mineralisation after 100 days | 36.7 % after 120 d, 1,3-D-UL-\(^{14}\)C (n= 1) |
|-------------------------------|---------------------------------------------------------------|
| Non-extractable residues after 100 days | 22.4 % after 120 d, 1,3-D-UL-\(^{14}\)C (n= 1) |
| Metabolites that may require further consideration for risk assessment - name and/or code, % of applied (range and maximum) | 3-Chloroacrylic acid- 55.1% at 28 d (n= 1)  
[1,3-D-UL-\(^{14}\)C] label |

**Route of degradation (photolysis) on soil (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.1.3)**

| Metabolites that may require further consideration for risk assessment - name and/or code, % of applied (range and maximum) | No data: 1,3-D does not absorb visible light |
|---------------------------------------------------------------|---------------------------------------------------------------|
| Mineralisation at study end | No data: 1,3-D does not absorb visible light |
| Non-extractable residues at study end | No data: 1,3-D does not absorb visible light |

\( ^5 \) n corresponds to the number of soils.  
\( ^6 \) n corresponds to the number of soils.
Rate of dissipation in soil (aerobic) laboratory studies active substance (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.1.1 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.1)

| Soil type                          | pH | t. °C / % MWHC | DissT₅₀ /DT₉₀ (d) | DissT₅₀ (d) 20 °C pF2/10kPa | St. (χ²) | Method of calculation |
|------------------------------------|----|----------------|-------------------|-----------------------------|----------|----------------------|
| Sandy clay loam (Marcham)          | 7.7| 20/40          | 9.15/30.4         | 9.15                        | 2.17     | SFO                  |
| Clay loam (Charentilly)            | 6.3| 20/40          | 11.1/38.2         | 9.79                        | 9.5      | SFO                  |
| Sandy silt loam (Thessaloniki)     | 8.0| 20/40          | 9.05/30.1         | 9.05                        | 2.45     | SFO                  |
| Sand (Cuckney)                     | 6.0| 20/40          | 16.0/53.1         | 14.0                        | 3.51     | SFO                  |

Geometric mean (if not pH dependent)

| pH dependence, Yes or No | No |

- Measured in water
- Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7
- There is uncertainty on how normalization procedures are applicable to dissipation (volatilization processes). Observed difference in this case is not expected to alter substantially the modelling results.

Rate of degradation in soil (aerobic) laboratory studies active substance (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.1.1 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.1) (based on the pulled data in the whole closed laboratory system).

| Soil type                          | pH | t. °C / % MWHC | DegT₅₀ /DegT₉₀ (d) | DegT₅₀ (d) 20 °C pF2/10kPa | St. (χ²) | Method of calculation |
|------------------------------------|----|----------------|-------------------|-----------------------------|----------|----------------------|
| Sandy clay loam (Marcham)          | 7.7| 20/40          | 14.68             | 14.68                       | 2.17     | SFO                  |
| Clay loam (Charentilly)            | 6.3| 20/40          | 30.12             | 26.56                       | 9.5      | SFO                  |
| Sandy silt loam (Thessaloniki)     | 8.0| 20/40          | 24.05             | 24.05                       | 2.45     | SFO                  |
| Sand (Cuckney)                     | 6.0| 20/40          | 55.05             | 48.12                       | 3.51     | SFO                  |

| Geometric mean (if not pH dependent) | 25.88 |
|--------------------------------------|-------|

| pH dependence, Yes or No | No |

- Measured in water

---

7 This column is reserved for any other property that is considered to have a particular impact on the degradation rate. Column and this footnote may be removed if not used.

8 This column is reserved for any other property that is considered to have a particular impact on the degradation rate. Column and this footnote may be removed if not used.
Rate of degradation in soil (aerobic) laboratory studies transformation products (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.1.2 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.1)

| (EZ)-3-chloroallyl alcohol | Dark aerobic conditions |
|---------------------------|------------------------|
| Soil type                 | Method of calculation  |
| Marcham soil (M622, UK)   | Applied parent SFO     |
| Charentilly soil (M608, France) | Applied parent SFO |
| Thessaloniki soil (M607, Greece) | Applied parent SFO |
| Cuckney soil (M609, UK)   | Applied parent SFO     |

Geometric mean (if not pH dependent) | 0.381 |
Arithmetic mean | - |

pH dependence, Yes or No | No |

3-Chloroacrylic acid | Dark aerobic conditions. The precursor from which the f.f. was derived was (EZ)-3-chloroallyl alcohol |
|-------------------|-------------------------------------------------------------------------------------------------|
| Soil type         | Method of calculation  |
| Marcham soil (M585, UK) | From parent SFO-SFO |
| Charentilly soil (M584, France) | From parent SFO-SFO |
| Thessaloniki soil (M583, Greece) | From parent SFO-SFO |

b) Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7
3-Chloroacrylic acid. The precursor from which the f.f. was derived was (EZ)-3-chloroallyl alcohol.

| Soil type                      | pH | t. °C / % MWHC | DT_{50}/DT_{90} (d) | f. f. k_{d} /k_{dp} | DT_{50} (d) 20 °C pF2/10kPa | St. (χ²) | Method of calculation |
|--------------------------------|----|----------------|----------------------|----------------------|-----------------------------|---------|----------------------|
| Cuckney soil (M579, UK)        | 6.0 | 20/40         | 18.6/61.7            | -                    | 16.26                       | 23.4    | From parent SFO-SFO  |
| Marcham soil (M622, UK)        | 7.9 | 20/40         | 0.724/2.4            | 1                    | 0.724                       | 13      | From 3-CAAL SFO-SFO  |
| Charentilly soil (M608, France) | 6.2 | 20/40         | 2.03/6.74            | 1                    | 2.02                        | 22.2    | From 3-CAAL SFO-SFO  |
| Thessaloniki soil (M607, Greece) | 8.0 | 20/40     | 3.11/10.3            | 1                    | 3.11                        | 17      | From 3-CAAL SFO-SFO  |
| Cuckney soil (M609, UK)        | 6.6 | 20/40         | 2.03/6.75            | 1                    | 2.03                        | 21      | From 3-CAAL SFO-SFO  |

Geometric mean (if not pH dependent) 4.47

Arithmetic mean 1

pH dependence, Yes or No No

a) Measured in water
b) Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7

d) Measured in [medium to be stated, usually calcium chloride solution or water]

Rate of degradation field soil dissipation studies (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.2.1 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.2.1)

No data submitted

Soil accumulation (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.2.2 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.2.2)

Soil accumulation and plateau concentration No data submitted

Rate of degradation in soil (anaerobic) laboratory studies active substance (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.1.3 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.1)

Parent (dissipation) Dark anaerobic conditions

| Soil type                  | pH | t. °C / % MWHC | DT_{50}/DT_{90} (d) | DT_{50} (d) 20 °C pF2/10kPa | R² | Method of calculation |
|---------------------------|----|----------------|----------------------|-----------------------------|----|----------------------|
| Sandy clay loam (Marcham) | 7.7 | 20/flooded    | 7.4/24.5             | 7.4                        | -  | Non-Linear Regression |

Geometric mean (if not pH dependent) 7.4

X This column is reserved for any other property that is considered to have a particular impact on the degradation rate. Column and this footnote may be removed if not used.
Rate of degradation in soil (anaerobic) laboratory studies transformation products (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.2.1.4 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.1.1)

| (EZ)-3-chloroallyl alcohol | Dark anaerobic conditions | The precursor from which the f.f. was derived was 1,3-Dichloropropene. |
|-----------------------------|--------------------------|---------------------------------------------------------------------|
| Soil type                   |                          |                                                                     |
| Sandy clay loam (Marcham)   | X<sup>10</sup>           | pH<sup>a</sup> t. °C / % MWHC DT<sub>50</sub>/DT<sub>90</sub> (d) f. f. k<sub>f</sub> / k<sub>dp</sub> DT<sub>50</sub> (d) 20°C<sup>b</sup> St. (χ<sup>2</sup>) Method of calculation |
|                            | 7.7                      | 20/flooded 0.5/1.6 - 1.6 - Non-Linear Regression                   |
| Geometric mean (if not pH dependent) |                           |                                                                     |
| Arithmetic mean             | 1.6                      |                                                                     |

<sup>a</sup> Measured in [medium to be stated, usually calcium chloride solution or water]
<sup>b</sup> Normalised using a Q10 of 2.58

3-Chloroacrylic acid

| Dark anaerobic conditions | The precursor from which the f.f. was derived was (EZ)-3-chloroallyl alcohol. |
|---------------------------|--------------------------------------------------------------------------|
| Soil type                 |                                                                         |
| Sandy clay loam (Marcham) | X<sup>10</sup>               | pH<sup>a</sup> t. °C / % MWHC DT<sub>50</sub>/DT<sub>90</sub> (d) f. f. k<sub>f</sub> / k<sub>dp</sub> DT<sub>50</sub> (d) 20°C<sup>b</sup> St. (χ<sup>2</sup>) Method of calculation |
|                           | 7.7                      | 20/flooded 43.6/144.9 - 43.6 - Non-Linear Regression                   |
| Geometric mean (if not pH dependent) |                           |                                                                     |
| Arithmetic mean           | 43.6                      |                                                                     |

<sup>a</sup> Measured in [medium to be stated, usually calcium chloride solution or water]
<sup>d</sup> Normalised using a Q10 of 2.58

Rate of degradation on soil (photolysis) laboratory active substance (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.1.3)

Soil photolysis was not studied as 1,3-D does not absorb visible light energy (so there is no potential for direct photolysis) and the applied uses involve application methods that preclude significant amounts of 1,3-D being present at the soil surface, so the potential for light exposure from the intended uses is minimal. No further information needed.

Soil adsorption active substance (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.3.1.1 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.2.1)

| Parent                      | OC % | Soil pH<sup>c</sup> | K<sub>d</sub> (mL/g) | K<sub>doc</sub> (mL/g) | K<sub>f</sub> (mL/g) | K<sub>fix</sub> (mL/g) | 1/n |
|-----------------------------|------|---------------------|---------------------|----------------------|---------------------|----------------------|-----|
| Clay (Faringdon)            | 3.21 | 7.5                 | 0.84-1.17           | 26.2-36.5            | 0.60                | 18.61                | 1.01|
| Sand (Cuckney)              | 1.6  | 6.6                 | 0.45-0.60           | 28.0-37.6            | 0.39                | 24.37                | 1.02|
| Sandy clay loam (Thessaloniki) | 0.8  | 7.8                 | 0.39-               | 49.0-                | 0.36                | 18.9                 | 1.02|
### Soil adsorption transformation products (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.3.1.2 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.2.1)

| Soil Type                          | OC %  | Soil pH | $K_d$ (mL/g) | $K_{dsoil}$ (mL/g) | $K_F$ (mL/g) | $K_{Foc}$ (mL/g) | 1/n  |
|-----------------------------------|-------|---------|--------------|-------------------|--------------|----------------|------|
| Sandy loam (Bertie County /COBB) | 0.66  | 5.9     | 0.0912       | 13.6              | 0.0984       | 14.91          | 1.04 |
| Clay loam (Grand Forks /M536)    | 4.76  | 6       | 0.191        | 4                 | 0.195        | 4.10           | 1.02 |
| Loamy Sand (Wake County /M537)    | 0.41  | 6       | 0.051        | 12.4              | 0.0481       | 11.73          | 1.02 |
| Silty clay loam (Charentilly /M547) | 1.07  | 6.3     | 0.0388       | 3.62              | 0.0436       | 4.07           | 1.05 |
| Loam (Fresno)                     | 0.81  | 7       | 0.056        | 6.93              | 0.0875       | 10.80          | 1.38 |
| Silt loam (Thessaloniki /M546)    | 1     | 7.9     | 0.0726       | 7.22              | 0.0968       | 9.68           | 1.33 |
| Clay (Faringdon /M549)            | 3.22  | 7.9     | 0.162        | 5.02              | 0.171        | 5.31           | 1.07 |
| Sandy clay loam (Marcham /M548)   | 1.25  | 8       | 0.134        | 10.8              | 0.149        | 11.92          | 1.17 |
| Silt loam (Washington /M504)      | 0.9   | 8.2     | 0.0915       | 10.2              | 0.107        | 11.89          | 1.2  |

|                      |       |         |             |                   |              |               |      |
|----------------------|-------|---------|--------------|-------------------|--------------|----------------|------|
| Geometric mean (if not pH dependent)* |       |         |             | 0.0992            | 8.4918       |                |      |
| Arithmetic mean (if not pH dependent) |       |         |             |                   |              | 1.14           |      |

pH dependence, Yes or No

a) Measured in [medium to be stated, usually calcium chloride solution or water]

* Only relevant after implementation of the published EFSA guidance.
* Only relevant after implementation of the published EFSA guidance.

(EZ)-3-chloroacrylic acid

| Soil Type                      | OC % | Soil pH | $K_d$ (mL/g) | $K_{doc}$ (mL/g) | $K_F$ (mL/g) | $K_Foc$ (mL/g) | $1/n$ |
|--------------------------------|------|---------|--------------|------------------|-------------|---------------|-------|
| Sandy loam                     | 0.66 | 5.9     | 0.115        | 17.5             | 0.106       | 16.06         | 0.883 |
| (Bertie County /COBB)          |      |         |              |                  |             |               |       |
| Clay loam                      | 4.76 | 6       | <0.01        | <0.01            | NC          | NC            | NC    |
| (Grand Forks /M536)            |      |         |              |                  |             |               |       |
| Loamy Sand                     | 0.41 | 6       | 0.0518       | 12.6             | 0.0409      | 9.97          | 0.872 |
| (Wake County /M537)            |      |         |              |                  |             |               |       |
| Silty clay loam                | 1.07 | 6.3     | <0.01        | <0.01            | <0.00278    | 0.259         | 0.426 |
| (Charentilly /M547)            |      |         |              |                  |             |               |       |
| Loam                           | 0.81 | 7       | 0.00887      | 1.1              | <0.0129     | 0.16          | 0.961 |
| (Fresno)                       |      |         |              |                  |             |               |       |
| Silt loam                      | 1    | 7.9     | 0.02         | 1.99             | <0.0241     | 2.41          | 1.18  |
| (Thessaloniki /M546)           |      |         |              |                  |             |               |       |
| Clay                           | 3.22 | 7.9     | <0.01        | <0.01            | NC          | NC            | NC    |
| (Faringdon /M549)              |      |         |              |                  |             |               |       |
| Sandy clay loam                | 1.25 | 8       | <0.01        | <0.01            | NC          | NC            | NC    |
| (Marcham /M548)                |      |         |              |                  |             |               |       |
| Silt loam                      | 0.9  | 8.2     | 0.00691      | 0.767            | <0.0143     | 1.6           | 0.907 |
| (Washington /M504)             |      |         |              |                  |             |               |       |

Geometric mean (if not pH dependent)*

|                     | 0.019 | 1.717 |
|---------------------|-------|-------|

Arithmetic mean (if not pH dependent)

|                     | 0.8715 |
|---------------------|--------|

pH dependence, *Yes or No*

|                     | Slightly pH dependence |
|---------------------|-------------------------|

Mobility in soil column leaching active substance (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.4.1.1 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.2.1)

Column leaching

No data submitted

Mobility in soil column leaching transformation products (Regulation (EU) N° 283/2013, Annex Part A, point 7.1.4.1.2 and Regulation (EU) N° 284/2013, Annex Part A, point 9.1.2.1)

Column leaching

No data submitted
Lysimeter / field leaching studies (Regulation (EU) N° 283/2013, Annex Part A, points 7.1.4.2 / 7.1.4.3 and Regulation (EU) N° 284/2013, Annex Part A, points 9.1.2.2 / 9.1.2.3)

Lysimeter/ field leaching studies

No data submitted

Hydrolytic degradation (Regulation (EU) N° 283/2013, Annex Part A, point 7.2.1.1)

Hydrolytic degradation of the active substance and metabolites > 10 %

### pH 4:
- Z-1,3-D: $25 \degree C \text{ DT}_{50} = 100 \text{ h}$ 
- E-1,3-D: $25 \degree C \text{ DT}_{50} = 118 \text{ h}$ 
- 3-Chloroally alcohol – Stable
- 3-Chloroacrylic acid – Stable

### pH 7:
- Z-1,3-D: $25 \degree C \text{ DT}_{50} = 64.5 \text{ h}$
- E-1,3-D: $25 \degree C \text{ DT}_{50} = 114 \text{ h}$
- 3-Chloroally alcohol – Stable
- 3-Chloroacrylic acid – Stable

### pH 9:
- Z-1,3-D: $25 \degree C \text{ DT}_{50} = 37.6 \text{ h}$
- E-1,3-D: $25 \degree C \text{ DT}_{50} = 114 \text{ h}$
- 3-Chloroally alcohol – Stable
- 3-Chloroacrylic acid – Stable

Aqueous photochemical degradation (Regulation (EU) N° 283/2013, Annex Part A, points 7.2.1.2 / 7.2.1.3)

Photolytic degradation of active substance and metabolites above 10 %

DT$_{50}$: 651d (experimental)
- Continuous irradiation xenon light lamp

Quantum yield of direct phototransformation in water at $\lambda > 290 \text{ nm}$
- 1,3-D does not absorb visible light

‘Ready biodegradability’ (Regulation (EU) N° 283/2013, Annex Part A, point 7.2.2.1)

Readily biodegradable

(yes/no)

No ready biodegradable

Aerobic mineralisation in surface water (Regulation (EU) N° 283/2013, Annex Part A, point 7.2.2.2 and Regulation (EU) N° 284/2013, Annex Part A, point 9.2.1)

No studies conducted. Data gap

Water / sediment study (Regulation (EU) N° 283/2013, Annex Part A, point 7.2.2.3 and Regulation (EU) N° 284/2013, Annex Part A, point 9.2.2)
**Parent**

Distribution 36.6% TAR in water after 1 day, and 2.2% TAR at the end of the study 7.2%. TAR in sediment after 1 day and 0.6% TAR at the end of the study (63.35% TAR volatilised at 0 day).

| Water / sediment system | pH water phase | pH sed | t. °C | DissT₅₀ / DissT₉₀ whole sys. | St. (χ²) | DissT₅₀ / DissT₉₀ water | St. (χ²) | DT₅₀ / DT₉₀ sed | St. (χ²) | Method of calculation |
|------------------------|----------------|--------|-------|-----------------------------|----------|--------------------------|----------|----------------|----------|----------------------|
| Loamy sand             | 7.4            | 5.9    | 25    | 4.9/16.2                    | 0.97     | 2.58/8.6                 | 0.8      | -              | -        | SFO                  |

**3-chloroallyl alcohol**

Distribution (5.5% TAR in water after 1 d. Max. sed 0.4% after 3 d)*

| Water / sediment system b | pH water phase | pH sed | t. °C | DT₅₀ / DT₉₀ whole sys. | St. (χ²) | DissT₅₀ water | St. (χ²) | DT₅₀ sed | St. (χ²) | Method of calculation |
|--------------------------|----------------|--------|-------|------------------------|----------|---------------|----------|----------|----------|----------------------|
| Loamy sand              | 7.4            | 5.9    | 25    | 1.2/4.0                | 0.97     | 1.21          | 0.97     | 1.09     | 0.94     | SFO                  |

*These figures come from the study conducted with the active substance b degradation parameters derived from a study conducted with (EZ)-3-chloroallyl alcohol as test item

**3-chloroacrylic acid**

Distribution (8.6% TAR in water after 3d. Max. sed 0.6% after 3-7 d)*

| Water / sediment system b | pH water phase | pH sed | t. °C | DT₅₀ whole sys. | St. (χ²) | DissT₅₀ water | St. (χ²) | DT₅₀ sed | St. (χ²) | Method of calculation |
|--------------------------|----------------|--------|-------|----------------|----------|---------------|----------|----------|----------|----------------------|
| Loamy sand              | 7.4            | 5.9    | 25    | 5.63           | 0.96     | 5.4           | 0.96     | 6.09     | 0.95     | SFO                  |

*These figures come from the study conducted with the active substance b degradation parameters derived from a study conducted with (EZ)-3-chloroallyl alcohol as test item

**Mineralisation and non extractable residues (from parent dosed experiments)**

| Water / sediment system | pH water phase | pH sed | Mineralisation x % after n d. (end of the study) | Non-extractable residues in sed. max x % after n d | Non-extractable residues in sed. max x % after n d (end of the study) |
|------------------------|----------------|--------|------------------------------------------------|---------------------------------|------------------------------------------------|
| Loamy sand             | 7.4            | 5.9    | 40.15% after 14 d 37.9% after 21 d (end of the study) | 16.05% after 21 d               | 16.05% after 21 d               |

**Fate and behaviour in air (Regulation (EU) N° 283/2013, Annex Part A, point 7.3.1)**

**Direct photolysis in air**

No data

**Photochemical oxidative degradation in air**

cis-isomer: DT₅₀ of 1.143 days hours derived by the Atkinson model (version 1.92). OH (12 h) concentration assumed = 1.5 x 10⁶ radicals/cm³

trans-isomer: DT₅₀ of 1.012 day derived by the Atkinson model (version 1.92). OH (12 h) concentration assumed = 1.5 x 10⁶ radicals/cm³

**Volatilisation**

from plant surfaces (BBA guideline): no data submitted
from soil surfaces (BBA guideline): no data submitted
Metabolites

Residues requiring further assessment (Regulation (EU) N° 283/2013, Annex Part A, point 7.4.1)

Environmental occurring residues requiring further assessment by other disciplines (toxicology and ecotoxicology) and or requiring consideration for groundwater exposure

- **Soil:** 1,3-dichloropropene, (EZ)-3-chloroallyl alcohol, 3-chloroacrylic acid
- **Ground water:** 1,3-dichloropropene, (EZ)-3-chloroallyl alcohol, 3-chloroacrylic acid
- **Impurities:** 1,2-dichloropropane, 1-M3, 2-M16, 3-M15, 4-M8, 5a-M5, 5b-M7, 5c-M11, 6-M21, 7-M25, 8a-M6, 8b-M10, 8c-M12, 9a-M23, 9b-M26, 10-M1, 11-M4, 12-M13, 13-M19, M-17, 1,1,2-trichloroethane, impurity X
- **Surface water:** 1,3-dichloropropene, (EZ)-3-chloroallyl alcohol, 3-chloroacrylic acid
- **Sediment:** None
- **Air:** 1,3-dichloropropene

Definition of the residue for monitoring (Regulation (EU) No° 283/2013, Annex Part A, point 7.4.2)

- **Soil:** 1,3-dichloropropene, 3-chloroacrylic acid
- **Groundwater:** 1,3-dichloropropene, 3-chloroacrylic acid.
- **Impurities:** 1,2-dichloropropane (1-M3), 1,1,2-trichloroethane, open for the other impurities potentially contaminating ground water pending on the toxicological assessment.
- **Surface water:** 1,3-dichloropropene, 3-chloroacrylic acid
- **Sediment:** None
- **Air:** 1,3-dichloropropene, 1,2-D (1-M3)

Monitoring data, if available (Regulation (EU) No° 283/2013, Annex Part A, point 7.5)

- **Soil (indicate location and type of study):** No data
- **Surface water (indicate location and type of study):** No data
- **Ground water (indicate location and type of study):**
  - Monitoring groundwater wells from 2002 to 2004 in the following EU countries: France, Italy, Spain, UK
  - All countries except Spain no Parent, 3-chloroallyl alcohol or 3-chloroacrylic acid residues determined >0.1 µg/L
  - Spain: no Parent or (EZ)-3-chloroallyl alcohol residues determined >0.1 µg/L
  - Confirmed residues of 0.085, 0.116 and 0.094 µg/L of cis 3-chloroacrylic acid were found in 3 out of 50 samples taken in Cáceres region.
  - Confirmed residues of 0.05 and 0.413 µg/L of the trans
3-chloroacrylic acid, were found 2 out of 50 samples taken in the Cáceres region. All other samples had no detectable residues.

**Greece; Monitoring of groundwater wells from January 2006 to October 2007**

No detectable residues of 1,3-D, 3-chloroacrylic acid or (EZ)-3-chloroallyl alcohol was found in any of the samples from any of the sample timings. No detectable residues of any of the 6 process impurities included in the monitoring were found in any of the samples from October 2006 to October 07 apart from a residue of 1,2-dichloropropane (1,2-D) ranging from 0.11 μg/L to 0.25 μg/L in one well in the Timbaki region. Extra sampling was proposed in an attempt to identify the possible source of 1,2-D The extra water samples contained residues of 1,2-D ranging from 0.11 μg/L to 0.34 μg/L.

**Monitoring groundwater wells from 2007 to 2009 in the following EU countries:** France, Italy, Spain, UK

In UK and Italy, no detectable residues of 1,3-D or 3-chloroacrylic acid were found in any of the samples from any of the sample timings. No detectable residues of processed impurities were found in any region with the exception of Campania (Italy) with values of 1,2-Dichloropropane between 0.05 μg/L and 0.1 μg/L.

In France, no detectable residues of 1,3-D or 3-chloroacrylic acid were found in any of the samples from any of the sample timings with the exception of Manche region. Confirmed residues of 0.06 μg/L and 1.50 were found in two different wells at the same time for cis-1,3-D. And, confirmed residues of 1.22 μg/L for trans-1,3-D.

The impurities 1,2-Dichloropropane and 2-M16 were also found in Manche region at concentration levels between <0.10 µg/L (LOQ) and 0.47 µg/L (1,2-D) in 17/40 samples and between <0.10 µg/L (LOQ) and 0.43 µg/L (2,M16) in 6/40 samples .

In Spain, no detectable residues of 1,3-D or 3-chloroacrylic acid were found in any of the samples from any of the sample timings with the exception of Cáceres region. Confirmed residues of 0.07 μg/L was for cis-1,3-D. And, confirmed residues of 0.11 µg/L for trans-1,3-D.

The impurity 1,2-Dichloropropane was found in 32/40 samples in Almeria region at concentration levels between <0.10 μg/L and 0.24 μg/L.

Extra samples taken in the same region reached concentration up to 0.64 μg/L.

The impurity 2-M16 was also found in Almería at values <0.10 μg/L.

**Monitoring groundwater wells from 2014 to 2016 in the following EU countries:** Italy and Spain.
In Italy, confirmed residues of 0.08 µg/L and 0.06 were found in the same well at two different times for cis-1,3-D. And, confirmed residues of 0.09 µg/L for trans-1,3-D. No residues of chloroacrylic acid and any of the three impurities measured for any sample. In Cáceres region (Spain), confirmed residues of 0.24 µg/L and 0.61 were found in two different wells at the same time for cis-1,3-D. And, confirmed residues of 0.12 and 0.24 µg/L for trans-1,3-D. Residues of 3-chloroacrylic was found in one sample with a value < 0.05 µg/L (LOQ). Residues of the impurity 2-M16 were found in one sample with a value < 0.05 µg/L (LOQ).

In Almería region (Spain), no residues of 1,3-D and 3-chloroacrylic were found. Confirmed residues of the impurity 1,2-D were found in 24/43 with values between 0.06 µg/L and 0.27 µg/L. Additionally, 3 samples below the LOQ. Residues of the impurity 2-M16 were found in eight samples (same well) with a value between 0.06 µg/L and 0.08 µg/L.

### Location: Imperial Valley, California US

Study type: volatilisation monitoring
Number of applications: 1
Application rate: 112 L/ha
Height: 1.5 m above the field
Average measured air concentration for 8 days field: 6.4 µg/m³ (max. 23.6 µg/m³ at day 7)

### Location: Salinas Valley, California US

Study type: volatilisation monitoring
Number of applications: 1
Application rate: 112 L/ha
Height: 1.5 m above the field
Average measured air concentration for 14 days at: 30 m: 10.5-9.9 µg/m³ (average calculated: 13.7-12.4 µg/m³) 400 m: 2.4-3.1 µg/m³ (average calculated: 4.0-5.3 µg/m³) Mean calculated air concentration for 14 days: 8.8 µg/m³

### Location: Yerington, Nevada, US

Study type: volatilisation monitoring for 7 days
Number of applications: 1
Application rate: 120.3 L/ha
Maximum measured air concentration for 7 days field: 15 cm above field: 2275 µg/m³ (31-42 h). Average: 465 µg/m³ (n=52) 1.5 m, edge of field: 783 µg/m³ (31-42 h). Average: 94.8 µg/m³ (n=45) 1.5 m, 30 m from field: 497 µg/m³ (31-42 h). Average: 39.4 µg/m³ (n=114) 1.5 m, 400 m from field: 47.6 µg/m³ (31-42 h). Average: 5.17 µg/m³ (n=39) 1.5 m, 800 m from field: 33.3 µg/m³ (31-42 h). Average: 3.88 µg/m³ (n=32)

### Location: Moses Lake, Washington, US
| Location          | Study type: volatilisation monitoring for 14 days | Number of applications: 1 | Application rate : 233 L/ha |
|------------------|---------------------------------------------|-------------------------|-----------------------|
| Hookerton, North Carolina, US | Measured air concentration for 14 days field: 1.5 m, edge of field: max 346 µg/m$^3$ (60-72h). Multidirectional Average: 114 µg/m$^3$. | | |
|                  | Measured air concentration for 14 days field: 1.5 m, 25 m from field: max. 307 µg/m$^3$ (24-36h). Multidirectional Average: 64 µg/m$^3$. | | |
|                  | Measured air concentration for 14 days field: 1.5 m, 125 m from field: max. 514 µg/m$^3$ (24-36 h). Multidirectional Average: 41.0 µg/m$^3$. | | |
|                  | Measured air concentration for 14 days field: 1.5 m, 500 m from field: 139 µg/m$^3$ (24-36h). Multidirectional Average: 16.4 µg/m$^3$. | | |
|                  | Measured air concentration for 14 days field: 1.5 m, 800 m from field: 169 µg/m$^3$ (0-4h). Multidirectional Average: 14 µg/m$^3$. | | |

| Location          | Study type: volatilisation monitoring for 14 days | Number of applications: 1 | Application rate : 187 L/ha |
|------------------|---------------------------------------------|-------------------------|-----------------------|
| Harquahala Valley, Arizona, US | Maximum measured air concentration for 14 days field: 1.5 m, edge of field: max 302 µg/m$^3$ (12-16h). Multidirectional average: 36.6 µg/m$^3$. | | |
|                  | Maximum measured air concentration for 14 days field: 1.5 m, 25 m from field: max. 357 µg/m$^3$ (0-4h). Multidirectional Average: 12.7 µg/m$^3$. | | |
|                  | Maximum measured air concentration for 14 days field: 1.5 m, 125 m from field: max. 254 µg/m$^3$ (0-4h). Multidirectional Average: 4.9 µg/m$^3$. | | |
|                  | Maximum measured air concentration for 14 days field: 1.5 m, 500 m from field: max. 83.4 µg/m$^3$ (0-4 h). Multidirectional Average: 1.3 µg/m$^3$. | | |
|                  | Maximum measured air concentration for 14 days field: 1.5 m, 800 m from field: 57.2 µg/m$^3$ (0-4h). Multidirectional Average: 1.1 µg/m$^3$. | | |

| Location          | Study type: volatilisation monitoring for 14 days | Number of applications: 1 | Application rate : 112 L/ha |
|------------------|---------------------------------------------|-------------------------|-----------------------|
| Rio Grande Valley, Texas, US | Maximum measured air concentration for 14 days field: 1.5 m, edge of field: max 2212 µg/m$^3$ (8-12h). Multidirectional Average: 165 µg/m$^3$. | | |
|                  | Maximum measured air concentration for 14 days field: 1.5 m, 25 m from field: max. 3415 µg/m$^3$ (24-36h). Multidirectional Average: 110 µg/m$^3$. | | |
|                  | Maximum measured air concentration for 14 days field: 1.5 m, 125 m from field: max. 1633 µg/m$^3$ (4-8h). Multidirectional Average: 53.9 µg/m$^3$. | | |
|                  | Maximum measured air concentration for 14 days field: 1.5 m, 500 m from field: max. 461 µg/m$^3$ (8-12h). Multidirectional Average: 11.7 µg/m$^3$. | | |
|                  | Maximum measured air concentration for 14 days field: 1.5 m, 800 m from field: 206 µg/m$^3$ (8-12h). Multidirectional Average: 6.5 µg/m$^3$. | | |
|                  | Maximum measured air concentration for 14 days field: 1.5 m, 1200 m from field: 168 µg/m$^3$ (8-12h). Average: 3.8 µg/m$^3$. 1.5 m, 1600 m from field: 87 µg/m$^3$ (8-12h). Multidirectional Average: 2.4 µg/m$^3$. | | |

| Location          | Study type: volatilisation monitoring for 14 days | Number of applications: 1 | Application rate : 80 L/ha (drip) |
|------------------|---------------------------------------------|-------------------------|-----------------------|
|                  | Maximum measured air concentration for 14 days field: 1.5 m, edge of field: max 1157 µg/m$^3$ (6-12 h). Multidirectional Average: 26.7 µg/m$^3$. | | |
1.5 m, 30 m from field: max. 540 𝜇𝑔/𝑚³ (6-12h).
Multidirectional Average: 11.3 𝜇𝑔/𝑚³
1.5 m, 90 m from field: max. 251 𝜇𝑔/𝑚³ (6-12 h).
Multidirectional Average: 4.3 𝜇𝑔/𝑚³

**Location:** Salinas Valley, California US
Study type: volatilisation monitoring for 21 days
Number of applications: 1
Application rate: 242 kg/ha (drip irrigation)
Height: 1.5 m above the field
Maximum flux 51.9 mg/m²/h after application
Total mass loss: 28.9 % of applied

**Location:** Bari, Italy
Study type: Field dissipation
Number of applications: 1
Application rate: 183 kg/ha (shank injection)
Maximum in-field air concentration for Telone II = 115170 ng/m³.
Maximum in-field air concentration for 1,2-dichloropropene = 102.14 ng/m³ at day 18 and 0.7 m of height.
Maximum off-field concentration for Telone II = 521719.15 ng/m³ at 1 m from the edge of field and 0.7 m above field during 0-24 h of sampling.
Maximum 1,2-dichloropropane (M3-1) = 122.27 ng/m³ at 24-48 hour after cultivation at 1.5 m above field and 10 m from the treated plot.

---

**PEC soil (Regulation (EU) N° 284/2013, Annex Part A, points 9.1.3 / 9.3.1)**

**Drip irrigation:**

**Parent**

1,3-Dichloropropene

**Method of calculation**

| DT₅₀ (d): 16 days |
|-------------------|
| Kinetics: SFO     |
| Field or Lab: representative worst case from lab studies. |

**Application data**

| Crop: Fruiting Vegetables |
|---------------------------|
| Depth of soil layer: 5cm, 20cm, 30cm |
| Soil bulk density: 1.5g/cm³ |
| % plant interception: 0% |
| Bare soil therefore no crop interception |
| Number of applications: 1 |
| Interval (d): every other year |
| Application rate(s): 226 kg a.s./ha drip irrigation |
### PEC(<em>s</em>) (mg/kg)

|                  | Single application Actual 5 cm | Single application Time weighted average 5 cm | Single application Actual 20 cm | Single application Time weighted average 20 cm | Single application Actual 30 cm | Single application Time weighted average 30 cm |
|------------------|--------------------------------|---------------------------------------------|--------------------------------|---------------------------------------------|--------------------------------|---------------------------------------------|
| **Initial**      | 301.3                          | 75.33                                       | 50.22                          |                                             |                                |                                             |
| **Short term**   |                                 |                                             |                                |                                             |                                |                                             |
| 24h              | 288.6                          | 294.9                                       | 72.14                          | 73.72                                       | 48.09                          | 49.15                                       |
| 2d               | 276.3                          | 288.6                                       | 69.08                          | 72.16                                       | 46.05                          | 48.11                                       |
| 4d               | 253.4                          | 276.7                                       | 63.35                          | 69.17                                       | 42.23                          | 46.11                                       |
| **Long term**    |                                 |                                             |                                |                                             |                                |                                             |
| 7d               | 222.5                          | 259.9                                       | 55.63                          | 64.98                                       | 37.08                          | 43.32                                       |
| 28d              | 89.59                          | 174.6                                       | 22.40                          | 43.64                                       | 14.93                          | 29.09                                       |
| 50d              | 34.54                          | 123.2                                       | 8.635                          | 30.79                                       | 5.757                          | 20.53                                       |
| 100d             | 3.959                          | 68.64                                       | 0.990                          | 17.16                                       | 0.660                          | 11.44                                       |

### Metabolites

**{(EZ)}-3-chloroallyl alcohol**

**Method of calculation**

- Molecular weight relative to the parent: 0.830
- DT<sub>50</sub> (d): 3.1 days
- Kinetics: SFO
- Field or Lab: *representative worst case from lab studies.*

**Application data**

|                  | Single application Actual 5 cm | Single application Time weighted average 5 cm | Single application Actual 20 cm | Single application Time weighted average 20 cm | Single application Actual 30 cm | Single application Time weighted average 30 cm |
|------------------|--------------------------------|---------------------------------------------|--------------------------------|---------------------------------------------|--------------------------------|---------------------------------------------|
| **Initial**      | 5.00                           | 1.25                                        | 0.83                           |                                             |                                |                                             |
| **Short term**   |                                 |                                             |                                |                                             |                                |                                             |
| 24h              | 4.00                           | 4.48                                        | 1.00                           | 1.12                                        | 0.67                           | 0.75                                        |
| 2d               | 3.20                           | 4.03                                        | 0.80                           | 1.01                                        | 0.53                           | 0.67                                        |
| 4d               | 2.05                           | 3.31                                        | 0.51                           | 0.83                                        | 0.34                           | 0.55                                        |
| **Long term**    |                                 |                                             |                                |                                             |                                |                                             |
| 7d               | 1.05                           | 2.53                                        | 0.26                           | 0.63                                        | 0.17                           | 0.42                                        |
| 28d              | 0.01                           | 0.80                                        | 0.00                           | 0.20                                        | 0.00                           | 0.13                                        |
| 50d              | 0.00                           | 0.45                                        | 0.00                           | 0.11                                        | 0.00                           | 0.07                                        |
| 100d             | 0.00                           | 0.22                                        | 0.00                           | 0.06                                        | 0.00                           | 0.04                                        |

**3-chloroacrylic acid**

**Method of calculation**

- Molecular weight relative to the parent: 0.9597
Peer review of the pesticide risk assessment of the active substance (EZ)-1,3-dichloropropene

Application data

Application rate assumed: 80.9008 kg/ha (assumed 3-chloroacrylic acid is formed at a maximum of 37.3 % of the applied dose)

PEC_{(s)} (mg/kg)

|       | Single application Actual 5 cm | Single application Time weighted average 5 cm | Single application Actual 20 cm | Single application Time weighted average 20 cm | Single application Actual 30 cm | Single application Time weighted average 30 cm |
|-------|-------------------------------|---------------------------------------------|-------------------------------|---------------------------------------------|-------------------------------|---------------------------------------------|
| Initial | 107.9                         | 26.97                                       | 17.98                         |                                              |                                              |                                              |
| Short term | 24h                           | 104.0                                       | 105.9                         | 26.00                                       | 26.48                         | 17.33                                       | 17.65                                       |
|        | 2d                             | 100.3                                       | 104.0                         | 25.07                                       | 26.01                         | 16.71                                       | 17.34                                       |
|        | 4d                             | 93.22                                       | 100.4                         | 23.31                                       | 25.09                         | 15.54                                       | 16.73                                       |
| Long term | 7d                             | 83.56                                       | 95.20                         | 20.89                                       | 23.80                         | 13.93                                       | 15.87                                       |
|        | 28d                            | 38.84                                       | 67.58                         | 9.710                                       | 16.89                         | 6.473                                       | 11.26                                       |
|        | 50d                            | 17.41                                       | 49.59                         | 4.352                                       | 12.40                         | 2.901                                       | 8.266                                       |
|        | 100d                           | 2.809                                       | 28.80                         | 0.702                                       | 7.199                         | 0.468                                       | 4.800                                       |

Shank injection:

Parent
1,3-Dichloropropene

Method of calculation

Application data

Crop: Fruiting Vegetables
Depth of soil layer: 5cm, 20cm, 30cm
Soil bulk density: 1.5g/cm³
% plant interception: 0%
Bare soil therefore no crop interception
Number of applications: 1
Interval (d): every other year
Application rate(s): 177 kg a.s./ha shank injection
### PEC(s) (mg/kg)

|          | Single application Actual 5 cm | Single application Time weighted average 5 cm | Single application Actual 20 cm | Single application Time weighted average 20 cm | Single application Actual 30 cm | Single application Time weighted average 30 cm |
|----------|---------------------------------|-----------------------------------------------|---------------------------------|-----------------------------------------------|---------------------------------|-----------------------------------------------|
| Initial  | 236.0                           | 59.00                                        |                                  |                                              | 39.33                           |                                               |
| Short term 24h | 226.0                         | 231.0                                        | 56.50                           | 57.74                                        | 37.67                           | 38.49                                        |
|          | 216.4                           | 226.1                                        | 54.10                           | 56.52                                        | 36.07                           | 37.68                                        |
|          | 198.5                           | 216.7                                        | 49.61                           | 54.17                                        | 33.08                           | 36.11                                        |
| Long term 7d | 174.3                         | 203.6                                        | 43.57                           | 50.89                                        | 29.04                           | 33.93                                        |
|          | 70.16                           | 136.7                                        | 17.54                           | 34.18                                        | 11.69                           | 22.79                                        |
|          | 27.05                           | 96.48                                        | 6.763                           | 24.12                                        | 4.509                           | 16.08                                        |
|          | 3.101                           | 53.77                                        | 0.775                           | 13.44                                        | 0.517                           | 8.960                                        |

### Metabolites

**(EZ)-3-chloroallyl alcohol**

**Method of calculation**

- Molecular weight relative to the parent: 0.830
- $DT_{50}$ (d): 3.1 days
- Kinetics: $SFO$
- Field or Lab: representative worst case from lab studies.

**Application data**

- Application rate assumed: 2.9382 kg/ha (assumed (EZ)-3-chloroallyl alcohol is formed at a maximum of 2% of the applied dose)

|          | Single application Actual 5 cm | Single application Time weighted average 5 cm | Single application Actual 20 cm | Single application Time weighted average 20 cm | Single application Actual 30 cm | Single application Time weighted average 30 cm |
|----------|---------------------------------|-----------------------------------------------|---------------------------------|-----------------------------------------------|---------------------------------|-----------------------------------------------|
| Initial  | 3.918                           | 0.979                                        |                                  |                                              | 0.653                           |                                               |
| Short term 24h | 3.133                         | 3.511                                        | 0.783                           | 0.878                                        | 0.522                           | 0.585                                        |
|          | 2.505                           | 3.159                                        | 0.626                           | 0.790                                        | 0.417                           | 0.526                                        |
|          | 1.602                           | 2.589                                        | 0.400                           | 0.647                                        | 0.267                           | 0.432                                        |
| Long term 7d | 0.819                         | 1.980                                        | 0.205                           | 0.495                                        | 0.136                           | 0.330                                        |
|          | 0.007                           | 0.625                                        | 0.002                           | 0.156                                        | 0.001                           | 0.104                                        |
|          | 0.000                           | 0.350                                        | 0.000                           | 0.088                                        | 0.000                           | 0.058                                        |
|          | 0.000                           | 0.175                                        | 0.000                           | 0.044                                        | 0.000                           | 0.029                                        |

**3-chloroacrylic acid**

**Method of calculation**

- Molecular weight relative to the parent: 0.9597
- $DT_{50}$ (d): 19 days
Kinetics: SFO
Field or Lab: representative worst case from lab studies.

Application rate assumed: 63.3604 kg/ha (assumed 3-chloroacrylic acid is formed at a maximum of 37.3 % of the applied dose)

| PEC<sub>(a)</sub> (mg/kg) | Single application Actual 5 cm | Single application Time weighted average 5 cm | Single application Actual 20 cm | Single application Time weighted average 20 cm | Single application Actual 30 cm | Single application Time weighted average 30 cm |
|--------------------------|-------------------------------|---------------------------------------------|-------------------------------|---------------------------------------------|-------------------------------|---------------------------------------------|
| Initial                  | 84.48                         | 21.12                                       | 14.08                         |                                             |                               |                                             |
| Short term               |                               |                                             |                               |                                             |                               |                                             |
| 24h                      | 81.45                         | 82.96                                       | 20.36                         | 20.74                                       | 13.58                         | 13.83                                       |
| 2d                       | 78.54                         | 81.47                                       | 19.63                         | 20.37                                       | 13.09                         | 13.58                                       |
| 4d                       | 73.01                         | 78.61                                       | 18.25                         | 19.65                                       | 12.17                         | 13.10                                       |
| Long term                |                               |                                             |                               |                                             |                               |                                             |
| 7d                       | 65.44                         | 74.56                                       | 16.36                         | 18.64                                       | 10.91                         | 12.43                                       |
| 28d                      | 30.42                         | 52.93                                       | 7.605                         | 13.23                                       | 5.070                         | 8.821                                       |
| 50d                      | 13.63                         | 38.84                                       | 3.408                         | 9.710                                       | 2.272                         | 6.473                                       |
| 100d                     | 2.200                         | 22.55                                       | 0.550                         | 5.639                                       | 0.367                         | 3.759                                       |
PEC ground water (Regulation (EU) N° 284/2013, Annex Part A, point 9.2.4.1)

Parent and metabolites CAC and CAAL

Method of calculation and type of study (e.g. modelling, field leaching, lysimeter)

| For FOCUS gw modelling, values used –
| Modelling using FOCUS model(s), with appropriate FOCUSgw scenarios, according to FOCUS guidance.
| Model(s) used: FOCUS PELMO 5.5.3 (Tier I and II);
| FOCUS PEARL 4.4.4 (Tier I)
| Crop: Tomatoes
| Crop uptake factor: 0
| Water solubility (mg/L): 2520 at pH 7 and 20°C
| Vapour pressure: 0 Pa at 20°C. Since a dissipation rate was used ofr modelling was set to 0 to avoid double counting volatilization,
| Geometric mean parent DissT50,lab=10.3 d (normalisation to 10kPa or pF2, 20 °C with Q10 of 2.58 and Walker equation coefficient 0.7).
| KOC: parent, geometric* mean 29.17 mL/g, arithmetic mean 1/n = 1.0.
| Metabolites:
| CAAL:
| Molecular Weight (g mol⁻¹): 92.5
| Geometric mean DT50,lab= 0.381 d (normalisation to 10kPa or pF2, 20 °C with Q10 of 2.58 and Walker equation coefficient 0.7).
| Kf,OC (geometric mean)=  8.49  mL/g
| Arithmetic mean 1/n = 1.14
| Formation fraction: 1,3-d→3-CAAL; f.f (k_f/k_dp)= 1
| CAC:
| Molecular Weight (g mol⁻¹): 106.5
| Geometric mean DT50,lab=4.47 d (normalisation to 10kPa or pF2, 20 °C with Q10 of 2.58 and Walker equation coefficient 0.7).
| Kf,OC (geometric mean)= 1.72  mL/g
| Arithmetic mean 1/n = 0.87
| Formation fraction: 3-CAAL→3-CAC; f.f (k_f/k_dp)= 1

Application rate

| Gross application rate: 177000 g/ha (shank injection)
| Gross application rate: 226000 g/ha (drip irrigation)
| Crop growth stage: Bare soil
| Canopy interception %: 0
| Application rate net of interception: x g/ha.
| No. of applications: 1 every other year
| Time of application (absolute or relative application dates): 1 March and 1 August

* Only relevant after implementation of the published EFSA guidance.
### PEC (gw) - FOCUS modelling results (80th percentile annual average concentration at 1m)

#### GF-3035

**Scenario**

| Scenario | Parent (µg/L) Tier I | Parent (µg/L) Tier II |
|----------|----------------------|-----------------------|
| Chateaudun | 13.850               | 0.384                 |
| Piacenza   | 118.408              | 35.715                |
| Porto      | 20.041               | 5.271                 |
| Sevilla    | 0.781                | 0.020                 |
| Thiva      | 0.445                | 0.008                 |

**Scenario**

| Scenario | Metabolite (µg/L) |
|----------|-------------------|
|          | CAAL Tier I | CAAL Tier II | CAC Tier I | CAC Tier II |
| Chateaudun | 0.599       | 0.032        | 30.266     | 12.294      |
| Piacenza   | 5.813       | 4.620        | 291.084    | 298.268     |
| Porto      | 1.967       | 1.725        | 181.664    | 196.116     |
| Sevilla    | 0.054       | 0.008        | 1.594      | 0.337       |
| Thiva      | 0.024       | 0.001        | 0.909      | 0.096       |

**Scenario**

| Scenario | Parent (µg/L) Tier I | Parent (µg/L) Tier II |
|----------|----------------------|-----------------------|
| Chateaudun | 19.421              | 3.224                 |
| Piacenza   | 107.101              | 20.326                |
| Porto      | 81.554               | 31.032                |
| Sevilla    | 11.259               | 1.848                 |
| Thiva      | 6.421                | 0.907                 |

**Scenario**

| Scenario | Metabolite (µg/L) |
|----------|-------------------|
|          | CAAL Tier I | CAAL Tier II | CAC Tier I | CAC Tier II |
| Chateaudun | 0.843      | 0.251        | 57.610     | 53.409      |
| Piacenza   | 4.279      | 2.600        | 175.191    | 149.631     |
| Porto      | 5.306      | 6.504        | 219.713    | 240.949     |
| Sevilla    | 0.713      | 0.270        | 37.539     | 25.696      |
| Thiva      | 0.284      | 0.074        | 15.673     | 12.423      |
### PEARL 4.4.4/Tomatoes
**1st March**  
Shank injection (20 cm depth)

| Scenario | Parent (µg/L) Tier I | Metabolites (µg/L) Tier I | CAAL | CAC |
|----------|----------------------|--------------------------|-------|-----|
| Chateaudun | 105.912431 | 4.383117 | 141.002362 |
| Piacenza | 210.879510 | 7.338100 | 256.482586 |
| Porto | 45.802808 | 2.574575 | 173.979551 |
| Sevilla | 0.810362 | 0.043203 | 1.276819 |
| Thiva | 1.245150 | 0.049573 | 1.559130 |

### PEARL 4.4.4/Tomatoes
**1st August**  
Shank injection (20 cm depth)

| Scenario | Parent (µg/L) Tier I | Metabolites (µg/L) Tier I | CAAL | CAC |
|----------|----------------------|--------------------------|-------|-----|
| Chateaudun | 128.721607 | 5.394532 | 248.313416 |
| Piacenza | 304.335109 | 10.924347 | 473.810503 |
| Porto | 83.561895 | 4.643224 | 175.369912 |
| Sevilla | 8.291810 | 0.416754 | 18.130947 |
| Thiva | 33.901109 | 1.388927 | 59.888393 |

### PELMO 5.5.3/Tomatoes
**1st March**  
Drip irrigation (20 cm depth)

| Scenario | Parent (µg/L) Tier I | Metabolite (µg/L) Tier I | CAAL | CAC |
|----------|----------------------|--------------------------|-------|-----|
| Chateaudun | 17.682 | 0.041 | 38.748 | 15.776 |
| Piacenza | 151.161 | | 45.60 | |
| Porto | 25.589 | | 6.730 | |
| Sevilla | 0.997 | | 0.025 | |
| Thiva | 0.569 | | 0.011 | |

### PELMO 5.5.3/Tomatoes
**1st March**  
Drip irrigation (20 cm depth)

| Scenario | Metabolite (µg/L) |
|----------|------------------|
| CAAL Tier I | CAAL Tier II | CAC Tier I | CAC Tier II |
| Chateaudun | 0.764 | 0.041 | 38.748 | 15.776 |
| Piacenza | 7.377 | 5.852 | 372.505 | 381.707 |
| Porto | 0.474 | 2.149 | 233.031 | 251.526 |
| Sevilla | 0.068 | 0.010 | 2.044 | 0.433 |
| Thiva | 0.030 | 0.002 | 1.163 | 0.124 |
### Higher tier studies

Monitoring GW studies in UK, Spain, Italy, France and Greece were provided and evaluated. See monitoring Section.

### Impurity 1,2-D (applicant calculation)
Method of calculation and type of study (e.g. modelling, field leaching, lysimeter)

For FOCUS gw modelling, values used –
Modelling using FOCUS model(s), with appropriate FOCUSgw scenarios, according to FOCUS guidance.
Model(s) used: FOCUS PELMO 5.5.3 (Tier I); FOCUS PEARL 4.4.4 (Tier I)
Crop: Tomatoes
Crop uptake factor: 0
Input parameters taken from ECHA data dossier.
Water solubility (mg/L): 2700 at 20°C
Vapour pressure: 5100 Pa at 20°C. However since a dissipation rate was used for modelling was set to 0 to avoid double counting volatilization,
Geometric mean DissT50=32.1d (normalisation to 20 °C with Q10 of 2.58).
KOC: = 60.2 mL/L
1/n = 1.0

Application rate

|                    | PECgw (µg/L) | PECgw (µg/L) |
|--------------------|--------------|--------------|
| 1st March applied  | CHATEAUDUN 0.026 | CHATEAUDUN 0.024 |
|                    | PIACENZA 0.041 | PIACENZA 0.072 |
|                    | PORTO 0.018 | PORTO 0.055 |
|                    | SEVILLA 0.004 | SEVILLA 0.008 |
|                    | THIVA 0.006 | THIVA 0.009 |

| 1st August applied | PECgw (µg/L) |
|--------------------|--------------|
| CHATEAUDUN         | 0.024        |
| PIACENZA           | 0.072        |
| PORTO              | 0.055        |
| SEVILLA            | 0.008        |
| THIVA              | 0.009        |

GF-3035 applications at 177 kg/ha, 1,2-dichloropropane applied at 0.00885 kg/ha

FOCUS PELMO  5.5.3 (Tier I)

| 1st March applied | PECgw (µg/L) |
|--------------------|--------------|
| CHATEAUDUN         | 0.078        |
| PIACENZA           | 0.075        |
| PORTO              | 0.030        |
| SEVILLA            | 0.009        |
| THIVA              | 0.015        |

| 1st August applied | PECgw (µg/L) |
|--------------------|--------------|
| CHATEAUDUN         | 0.071        |
| PIACENZA           | 0.120        |
| PORTO              | 0.059        |
| SEVILLA            | 0.012        |
| THIVA              | 0.027        |

FOCUS PEARL  4.4.4 (Tier I)

RMS calculations based on the maximum value allowed by the specifications (0.1 g/kg).

Gross application rate: For GF-3035 applications at 177 kg/ha, 1,2-dichloropropane would be applied at 0.00885 kg/ha (shank injection)
Gross application rate: For GF-3036 applications at 226 kg/ha, 1,2-dichloropropane would be applied at 0.0113 kg/ha (drip irrigation)
Crop growth stage: Bare soil
Canopy interception %: 0
Application rate net of interception: x g/ha.
No. of applications: 1 every other year
Time of application (absolute or relative application dates): 1 March and 1 August
GF-3036 applications at 226 kg/ha, 1,2-dichloropropane applied at 0.0113 kg/ha

**FOCUS PELMO  5.5.3 (Tier 1)**

| 1<sup>st</sup> March applied | PEC<sub>gw</sub> (µg/L) | 1<sup>st</sup> August applied | PEC<sub>gw</sub> (µg/L) |
|-----------------------------|-----------------|-----------------|-----------------|
| CHATEAUDUN                  | 0.033           | CHATEAUDUN      | 0.030           |
| PIACENZA                    | 0.052           | PIACENZA        | 0.091           |
| PORTO                       | 0.023           | PORTO           | 0.070           |
| SEVILLA                     | 0.005           | SEVILLA         | 0.011           |
| THIVA                       | 0.007           | THIVA           | 0.012           |

**FOCUS PEARL  4.4.4 (Tier 1)**

| 1<sup>st</sup> March applied | PEC<sub>gw</sub> (µg/L) | 1<sup>st</sup> August applied | PEC<sub>gw</sub> (µg/L) |
|-----------------------------|-----------------|-----------------|-----------------|
| CHATEAUDUN                  | 0.099           | CHATEAUDUN      | 0.091           |
| PIACENZA                    | 0.096           | PIACENZA        | 0.153           |
| PORTO                       | 0.039           | PORTO           | 0.075           |
| SEVILLA                     | 0.012           | SEVILLA         | 0.016           |
| THIVA                       | 0.020           | THIVA           | 0.034           |

**Other impurities (RMS calculations)**

**Summary of Environmental Parameters: EPI Suite v.4.11 QSAR results**

| Substance                     | EFS A code | Pm  | Water solubility (mg/L) | Vapour Pressure (Pa) | K<sub>oc</sub> (mL/g ) | Henry’s Constant Atm<sup>3</sup>/mole | g/k g | Applicatio n rate GF-3036 (g/ha) | Applicatio n rate GF-3035 (g/ha) |
|-------------------------------|------------|-----|------------------------|----------------------|------------------------|--------------------------------------|------|-------------------------------|-------------------------------|
| 1,3-dichloropropene           | -          | 1427| 2970                   | 72                   | 1.63E-3                | 0.1                                  | 22.6 | 17.7                          |                               |
| 1,2-dichloropropene (M3)*     | 1          | 112.99| 2193                 | 6500                 | 61                     | 3.12E-3                | 0.1  | 22.6                          | 17.7                          |
| M16                           | 2          | 147.43| 443                   | 1746                 | 96.6                   | 1.66E-2                | 0.1  | 22.6                          | 17.7                          |
| M15                           | 3          | 112.986| 991 (2750)          | 2440                 | 80.8                   | 1.65E-2                | 0.1  | 22.6                          | 17.7                          |
| M8                            | 4          | 120.62| 449                   | 16300                | 136                    | 1.46E-2                | 2    | 452                           | 354                           |
| M5                            | 5a         | 120.62| 268                   | 8990                 | 157                    | 9.12E-2                | 4    | 904                           | 708                           |
| M7                            | 5b         | 120.62| 306                   | 2840                 | 170                    | 2.68E-2                | 2    | 452                           | 354                           |
| M11                           | 5c         | 120.62| 306                   | 6350                 | 181                    | 6.00E-2                | 1    | 226                           | 177                           |
| M21                           | 6          | 145.415| 984                  | 1292                 | 125                    | 3.00E-3                | 0.1  | 22.6                          | 17.7                          |
| M25                           | 7          | 145.415| 984                  | 1292                 | 125                    | 3.00E-3                | 0.1  | 22.6                          | 17.7                          |
| M6                            | 8a         | 116.59| 93                    | 6240                 | 202                    | 6.88E-2                | 1    | 226                           | 177                           |
| M10                           | 8b         | 116.59| 189                   | 3980                 | 211                    | 3.72E-2                | 1    | 226                           | 177                           |
| M12                           | 8c         | 116.59| 121                   | 3270                 | 240                    | 2.78E-2                | 1    | 226                           | 177                           |
| M19                           | 9a         | 126.97| 28778                | 780                  | 7.42                   | 5.05E-5                | 0.4  | 90.4                          | 70.8                          |
| M26                           | 9b         | 126.97| 28778                | 780                  | 7.42                   | 5.05E-5                | 0.4  | 90.4                          | 70.8                          |
| M1                            | 10         | 110.97| 2229                 | 9680                 | 61                     | 6.26E-3                | 1    | 226                           | 177                           |
| M4                            | 11         | 118.6 | 272                   | 9710                 | 157                    | 7.28E-2                | 1.5  | 339                           | 265.5                         |
| M13                           | 12         | 118.6 | 186                   | 3680                 | 202                    | 2.97E-1                | 1    | 226                           | 177                           |
| M19                           | 13         | 118.6 | 159.7                | 1719.2               | 235.3                  | 0.0149                 | 0.1  | 22.6                          | 17.7                          |
| M17                           | M17        | 118.6 | 651.8                | 38397                | 213.2                  | 3.021E-2              | 0.1  | 22.6                          | 17.7                          |
| 1,1,2-trichloroethane         | KST        | 133.404| 2801               | 2740                 | 61                     | 1.67E-3              | 1    | 226                           | 177                           |
1/n=1 and DT50=1000 d (default values) for all impurities with the exception of 1,2-D where a DT50 =32.1 d has been used (ECHA value provided by applicant). The vapour pressure for 1,2-D has been set to zero to avoid a double accounting of the volatilization. The application depth was fixed to 20 cm.

### 1 APPLICATION EVERY OTHER YEAR

**GF-3035 applications at 177 kg/ha**

**FOCUS PELMO  5.5.3 (Tier 1) 1,2-dichloropropene; 1-M3 applied at 0.0177 kg/ha**

| Date          | PECgw (µg/L) | PECgw (µg/L) |
|---------------|--------------|--------------|
| 1st March     | CHATEAUDUN   | 0.038        |
|               | PIACENZA     | 0.075        |
|               | PORTO        | 0.030        |
|               | SEVILLA      | 0.008        |
|               | THIVA        | 0.011        |
| 1st August    | CHATEAUDUN   | 0.033        |
|               | PIACENZA     | 0.134        |
|               | PORTO        | 0.100        |
|               | SEVILLA      | 0.017        |
|               | THIVA        | 0.018        |

**DT50=32.1 d; VP=0; Koc=60.2; Ws=2700 mg/L.**

**2-M16 applied at 0.0177 kg/ha**

| Date          | PECgw (µg/L) | PECgw (µg/L) |
|---------------|--------------|--------------|
| 1st March     | CHATEAUDUN   | 3.898        |
|               | PIACENZA     | 2.661        |
|               | PORTO        | 1.399        |
|               | SEVILLA      | 4.620        |
|               | THIVA        | 2.899        |
| 1st August    | CHATEAUDUN   | 3.829        |
|               | PIACENZA     | 2.579        |
|               | PORTO        | 1.368        |
|               | SEVILLA      | 4.648        |
|               | THIVA        | 2.822        |

**3-M15 applied at 0.0177 kg/ha**

| Date          | PECgw (µg/L) | PECgw (µg/L) |
|---------------|--------------|--------------|
| 1st March     | CHATEAUDUN   | 3.998        |
|               | PIACENZA     | 2.684        |
|               | PORTO        | 1.428        |
|               | SEVILLA      | 4.745        |
|               | THIVA        | 4.528        |
| 1st August    | CHATEAUDUN   | 3.847        |
|               | PIACENZA     | 2.619        |
|               | PORTO        | 1.398        |
|               | SEVILLA      | 4.726        |
|               | THIVA        | 4.330        |

**4-M8 applied at 0.354 kg/ha**

| Date          | PECgw (µg/L) | PECgw (µg/L) |
|---------------|--------------|--------------|
| 1st March     | CHATEAUDUN   | 68.019       |
|               | PIACENZA     | 48.264       |
|               | PORTO        | 23.864       |
|               | SEVILLA      | 77.926       |
|               | THIVA        | 74.332       |
| 1st August    | CHATEAUDUN   | 66.013       |
|               | PIACENZA     | 45.424       |
|               | PORTO        | 24.722       |
|               | SEVILLA      | 78.552       |
|               | THIVA        | 71.647       |

**5a-M5 applied at 0.708 kg/ha**

| Date          | PECgw (µg/L) | PECgw (µg/L) |
|---------------|--------------|--------------|
| 1st March     | CHATEAUDUN   | 27.392       |
|               | PIACENZA     | 1.630        |
|               | PORTO        | 3.668        |
|               | SEVILLA      | 6.348        |
|               | THIVA        | 37.862       |
| 1st August    | CHATEAUDUN   | 26.286       |
|               | PIACENZA     | 2.091        |
|               | PORTO        | 3.972        |
|               | SEVILLA      | 7.253        |
|               | THIVA        | 38.154       |

**5b-M7 applied at 0.354 kg/ha**

| Date          | PECgw (µg/L) | PECgw (µg/L) |
|---------------|--------------|--------------|
| 1st March     | CHATEAUDUN   | 56.404       |
|               | PIACENZA     | 43.521       |
|               | PORTO        | 21.283       |
|               | SEVILLA      | 66.460       |
|               | THIVA        | 65.771       |
| 1st August    | CHATEAUDUN   | 54.370       |
|               | PIACENZA     | 41.604       |
|               | PORTO        | 21.361       |
|               | SEVILLA      | 67.084       |
|               | THIVA        | 62.008       |
### 5c-M11 applied at 0.177 kg/ha

|               | 1st March applied | 1st August applied |
|---------------|-------------------|--------------------|
| CHATEAUDUN    | 8.876             | 8.398              |
| PIACENZA      | 0.835             | 0.800              |
| PORTO         | 1.302             | 1.304              |
| SEVILLA       | 2.283             | 2.568              |
| THIVA         | 9.861             | 9.900              |

### 6- M21 applied at 0.0177 kg/ha

|               | 1st March applied | 1st August applied |
|---------------|-------------------|--------------------|
| CHATEAUDUN    | 2.163             | 2.001              |
| PIACENZA      | 0.928             | 0.911              |
| PORTO         | 0.434             | 0.331              |
| SEVILLA       | 0.994             | 0.868              |
| THIVA         | 1.691             | 1.310              |

### 7-M25 applied at 0.0177 kg/ha

|               | 1st March applied | 1st August applied |
|---------------|-------------------|--------------------|
| CHATEAUDUN    | 2.163             | 2.001              |
| PIACENZA      | 0.928             | 0.911              |
| PORTO         | 0.434             | 0.331              |
| SEVILLA       | 0.994             | 0.868              |
| THIVA         | 1.691             | 1.310              |

### 8a-M6 applied at 0.177 kg/ha

|               | 1st March applied | 1st August applied |
|---------------|-------------------|--------------------|
| CHATEAUDUN    | 4.257             | 4.126              |
| PIACENZA      | 0.162             | 0.184              |
| PORTO         | 0.532             | 0.616              |
| SEVILLA       | 0.911             | 1.064              |
| THIVA         | 7.710             | 7.946              |

### 8b-M10 applied at 0.177 kg/ha

|               | 1st March applied | 1st August applied |
|---------------|-------------------|--------------------|
| CHATEAUDUN    | 8.755             | 8.172              |
| PIACENZA      | 0.797             | 0.743              |
| PORTO         | 1.317             | 1.301              |
| SEVILLA       | 2.313             | 2.580              |
| THIVA         | 9.426             | 9.552              |

### 8c-M12 applied at 0.177 kg/ha

|               | 1st March applied | 1st August applied |
|---------------|-------------------|--------------------|
| CHATEAUDUN    | 22.389            | 22.177             |
| PIACENZA      | 18.031            | 17.641             |
| PORTO         | 9.032             | 9.201              |
| SEVILLA       | 24.698            | 24.724             |
| THIVA         | 26.744            | 26.255             |

### 9a-M23 applied at 0.0708 kg/ha

|               | 1st March applied | 1st August applied |
|---------------|-------------------|--------------------|
| CHATEAUDUN    | 26.428            | 22.177             |
| PIACENZA      | 13.400            | 17.641             |
| PORTO         | 6.412             | 9.201              |
| SEVILLA       | 35.182            | 24.724             |
### 9b-M26 applied at 0.0708 kg/ha

| 1st March applied | PECgw (µg/L) | 1st August applied | PECgw (µg/L) |
|-------------------|-------------|-------------------|-------------|
| CHATEAUDUN        | 26.428      | CHATEAUDUN        | 23.479      |
| PIACENZA          | 13.400      | PIACENZA          | 11.417      |
| PORTO             | 6.412       | PORTO             | 6.344       |
| SEVILLA           | 35.182      | SEVILLA           | 34.820      |
| THIVA             | 29.796      | THIVA             | 29.548      |

### 10-M1 applied at 0.177 kg/ha

| 1st March applied | PECgw (µg/L) | 1st August applied | PECgw (µg/L) |
|-------------------|-------------|-------------------|-------------|
| CHATEAUDUN        | 6.207       | CHATEAUDUN        | 5.760       |
| PIACENZA          | 0.376       | PIACENZA          | 0.480       |
| PORTO             | 0.829       | PORTO             | 0.875       |
| SEVILLA           | 1.387       | SEVILLA           | 1.523       |
| THIVA             | 9.844       | THIVA             | 10.720      |

### 11-M4 applied at 0.266 kg/ha

| 1st March applied | PECgw (µg/L) | 1st August applied | PECgw (µg/L) |
|-------------------|-------------|-------------------|-------------|
| CHATEAUDUN        | 9.961       | CHATEAUDUN        | 9.573       |
| PIACENZA          | 0.569       | PIACENZA          | 0.742       |
| PORTO             | 1.333       | PORTO             | 1.451       |
| SEVILLA           | 2.302       | SEVILLA           | 2.632       |
| THIVA             | 14.089      | THIVA             | 14.241      |

### 12-M13 applied at 0.177 kg/ha

| 1st March applied | PECgw (µg/L) | 1st August applied | PECgw (µg/L) |
|-------------------|-------------|-------------------|-------------|
| CHATEAUDUN        | 23.599      | CHATEAUDUN        | 22.775      |
| PIACENZA          | 18.562      | PIACENZA          | 18.028      |
| PORTO             | 8.978       | PORTO             | 9.315       |
| SEVILLA           | 26.651      | SEVILLA           | 26.472      |
| THIVA             | 27.454      | THIVA             | 27.343      |

### 13-M19 applied at 0.0177 kg/ha

| 1st March applied | PECgw (µg/L) | 1st August applied | PECgw (µg/L) |
|-------------------|-------------|-------------------|-------------|
| CHATEAUDUN        | 2.288       | CHATEAUDUN        | 2.268       |
| PIACENZA          | 1.848       | PIACENZA          | 1.804       |
| PORTO             | 0.923       | PORTO             | 0.939       |
| SEVILLA           | 2.544       | SEVILLA           | 2.550       |
| THIVA             | 2.746       | THIVA             | 2.688       |

### M-17 applied at 0.0177 kg/ha

| 1st March applied | PECgw (µg/L) | 1st August applied | PECgw (µg/L) |
|-------------------|-------------|-------------------|-------------|
| CHATEAUDUN        | 2.438       | CHATEAUDUN        | 2.354       |
| PIACENZA          | 1.943       | PIACENZA          | 1.899       |
| PORTO             | 0.966       | PORTO             | 0.989       |
| SEVILLA           | 2.779       | SEVILLA           | 2.789       |
| THIVA             | 2.918       | THIVA             | 2.832       |

### 1,1,2-trichloroethane applied at 0.177 kg/ha

| 1st March applied | PECgw (µg/L) | 1st August applied | PECgw (µg/L) |
|-------------------|-------------|-------------------|-------------|
| CHATEAUDUN        | 29.857      | CHATEAUDUN        | 25.746      |
| PIACENZA          | 12.279      | PIACENZA          | 10.801      |
### Peer review of the pesticide risk assessment of the active substance (EZ)-1,3-dichloropropene

www.efsa.europa.eu/efsajournal

#### GF-3036 applications at 226 kg/ha

**FOCUS PELOMO** 5.5.3 (Tier 1)

1,2-dichloropropane; 1-M3 applied at 0.0226 kg/ha

| Location | 1st March applied | 1st August applied |
|----------|------------------|-------------------|
| CHATEAUDUN | 0.049 (PECgw (µg/L)) | 0.042 |
| PIACENZA | 0.096 | 0.171 |
| PORTO | 0.039 | 0.127 |
| SEVILLA | 0.010 | 0.021 |
| THIVA | 0.014 | 0.023 |

**DT50=32.1 d; VP=0; Koc=60.2; Ws=2700 mg/L**

2-M16 applied at 0.0226 kg/ha

| Location | 1st March applied | 1st August applied |
|----------|------------------|-------------------|
| CHATEAUDUN | 4.977 (PECgw (µg/L)) | 4.889 |
| PIACENZA | 3.397 | 3.293 |
| PORTO | 1.786 | 1.747 |
| SEVILLA | 5.899 | 5.933 |
| THIVA | 5.599 | 5.450 |

3-M15 applied at 0.0226 kg/ha

| Location | 1st March applied | 1st August applied |
|----------|------------------|-------------------|
| CHATEAUDUN | 5.105 (PECgw (µg/L)) | 4.912 |
| PIACENZA | 3.427 | 3.344 |
| PORTO | 1.823 | 1.785 |
| SEVILLA | 6.059 | 6.034 |
| THIVA | 5.781 | 5.527 |

4-M8 applied at 0.452 kg/ha

| Location | 1st March applied | 1st August applied |
|----------|------------------|-------------------|
| CHATEAUDUN | 86.843 (PECgw (µg/L)) | 84.291 |
| PIACENZA | 61.615 | 58.004 |
| PORTO | 30.465 | 31.563 |
| SEVILLA | 99.484 | 100.286 |
| THIVA | 94.917 | 91.489 |

5a-M5 applied at 0.904 kg/ha

| Location | 1st March applied | 1st August applied |
|----------|------------------|-------------------|
| CHATEAUDUN | 34.977 (PECgw (µg/L)) | 33.565 |
| PIACENZA | 2.082 | 2.670 |
| PORTO | 4.683 | 5.071 |
| SEVILLA | 8.106 | 9.264 |
| THIVA | 48.349 | 48.711 |

5b-M7 applied at 0.452 kg/ha

| Location | 1st March applied | 1st August applied |
|----------|------------------|-------------------|
| CHATEAUDUN | 72.022 (PECgw (µg/L)) | 69.431 |
| PIACENZA | 55.566 | 53.131 |
| PORTO | 27.172 | 27.277 |
| SEVILLA | 84.857 | 85.653 |
| THIVA | 83.978 | 79.177 |

5c-M11 applied at 0.226 kg/ha

| Location | 1st March applied | 1st August applied |
|----------|------------------|-------------------|
### 6- M21 applied at 0.0226 kg/ha

| Location     | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) |
|--------------|------------------------|-------------------------|
| CHATEAUDUN   | 2.761                  | 2.555                   |
| PIACENZA     | 1.184                  | 1.163                   |
| PORTO        | 0.555                  | 0.423                   |
| SEVILLA      | 1.270                  | 1.108                   |
| THIVA        | 2.160                  | 1.673                   |

### 7- M25 applied at 0.0226 kg/ha

| Location     | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) |
|--------------|------------------------|-------------------------|
| CHATEAUDUN   | 5.437                  | 5.268                   |
| PIACENZA     | 0.207                  | 0.235                   |
| PORTO        | 0.680                  | 0.786                   |
| SEVILLA      | 1.164                  | 1.358                   |
| THIVA        | 9.845                  | 10.144                  |

### 8a- M6 applied at 0.226 kg/ha

| Location     | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) |
|--------------|------------------------|-------------------------|
| CHATEAUDUN   | 11.178                 | 10.433                  |
| PIACENZA     | 1.018                  | 0.948                   |
| PORTO        | 1.682                  | 1.661                   |
| SEVILLA      | 2.954                  | 3.295                   |
| THIVA        | 12.036                 | 12.195                  |

### 8b- M10 applied at 0.226 kg/ha

| Location     | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) |
|--------------|------------------------|-------------------------|
| CHATEAUDUN   | 28.587                 | 28.317                  |
| PIACENZA     | 23.024                 | 22.527                  |
| PORTO        | 31.533                 | 31.570                  |
| SEVILLA      | 34.148                 | 33.518                  |
| THIVA        | 34.148                 | 33.518                  |

### 8c- M12 applied at 0.226 kg/ha

| Location     | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) |
|--------------|------------------------|-------------------------|
| CHATEAUDUN   | 8.188                  | 8.100                   |
| PIACENZA     | 44.914                 | 44.467                  |
| THIVA        | 38.048                 | 37.730                  |

### 9a- M23 applied at 0.0904 kg/ha

| Location     | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) |
|--------------|------------------------|-------------------------|
| CHATEAUDUN   | 33.746                 | 29.977                  |
| PIACENZA     | 17.108                 | 14.579                  |

### 9b- M26 applied at 0.0904 kg/ha

| Location     | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) |
|--------------|------------------------|-------------------------|
| CHATEAUDUN   | 33.746                 | 29.977                  |
| PIACENZA     | 17.108                 | 14.579                  |
## 10-M1 applied at 0.226 kg/ha

| Location    | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) | Location    | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) |
|-------------|------------------------|-------------------------|-------------|------------------------|-------------------------|
| CHATEAUDUN  | 7.926                  | 7.355                   | PIACENZA    | 0.480                  | 0.613                   |
| SEVILLA     | 1.770                  | 1.945                   | PORTO       | 1.059                  | 1.117                   |
| THIVA       | 12.569                 | 13.687                  |             |                        |                         |

## 11-M4 applied at 0.339 kg/ha

| Location    | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) | Location    | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) |
|-------------|------------------------|-------------------------|-------------|------------------------|-------------------------|
| CHATEAUDUN  | 12.694                 | 12.200                  | PIACENZA    | 0.725                  | 0.945                   |
| SEVILLA     | 2.934                  | 3.354                   | PORTO       | 1.699                  | 1.849                   |
| THIVA       | 17.958                 | 18.149                  |             |                        |                         |

## 12-M13 applied at 0.226 kg/ha

| Location    | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) | Location    | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) |
|-------------|------------------------|-------------------------|-------------|------------------------|-------------------------|
| CHATEAUDUN  | 30.132                 | 29.082                  | PIACENZA    | 23.701                 | 23.017                  |
| SEVILLA     | 34.033                 | 33.798                  | PORTO       | 11.461                 | 11.894                  |
| THIVA       | 35.056                 | 34.914                  |             |                        |                         |

## 13-M19 applied at 0.0226 kg/ha

| Location    | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) | Location    | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) |
|-------------|------------------------|-------------------------|-------------|------------------------|-------------------------|
| CHATEAUDUN  | 2.921                  | 2.897                   | PIACENZA    | 2.359                  | 2.304                   |
| SEVILLA     | 3.248                  | 3.256                   | PORTO       | 1.178                  | 1.199                   |
| THIVA       | 3.506                  | 3.432                   |             |                        |                         |

## M-17 applied at 0.0226 kg/ha

| Location    | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) | Location    | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) |
|-------------|------------------------|-------------------------|-------------|------------------------|-------------------------|
| CHATEAUDUN  | 3.113                  | 3.005                   | PIACENZA    | 2.481                  | 2.425                   |
| SEVILLA     | 3.548                  | 3.561                   | PORTO       | 1.234                  | 1.263                   |
| THIVA       | 3.726                  | 3.616                   |             |                        |                         |

## 1,1,2-trichloroethane Kanesho impurity applied at 0.226 kg/ha

| Location    | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) | Location    | 1st March PECgw (µg/L) | 1st August PECgw (µg/L) |
|-------------|------------------------|-------------------------|-------------|------------------------|-------------------------|
| CHATEAUDUN  | 38.124                 | 32.873                  | PIACENZA    | 15.678                 | 13.790                  |
| SEVILLA     | 6.868                  | 4.448                   | PORTO       | 11.461                 | 11.894                  |
| THIVA       | 26.756                 | 21.764                  |             |                        |                         |

PEC surface water and PEC sediment (Regulation (EU) N° 284/2013, Annex Part A, points 9.2.5 / 9.3.1)

Parent
Method of calculation

| Drip irrigation: |
|------------------|
| Deposition; experimental data according to the bystander study |

| Soil Injected |
|---------------|
| Injected: 177 kg a.s./ha (calculations made for 230 kg a.s./ha) |
| Drip: 226 kg a.s./ha (calculations for 283 kg a.s./ha) |

Application rate

| Drip irrigation |
|------------------|
| Deposition |
| Injected: Lateral Flow; run-off & Deposition |

Application rate

| Soil Injected |
|---------------|
| Injected: 177 kg a.s./ha (calculations made for 230 kg a.s./ha) |
| Drip: 226 kg a.s./ha (calculations for 283 kg a.s./ha) |

Main routes of entry

| Drip irrigation |
|------------------|
| Deposition; calculated form experimental data from bystander study |
| Max PECsw = 2.46 µg/L. PECsw at 3, 10 and 20 m are 2.117 µg/L, 0.478 µg/L and 0.332 µg/L, respectively |

Soil Injected

Parameters used in FOCUSsw step 3 (if performed)

| Version control no.’s of FOCUS software: |
|-----------------------------------------|
| Spin (Substances Plug In) v.2.2 |
| SWASH, version 5.1 incorporating: MACRO, version 5.5.4, PRZM, version 4.3.1, TOXSWA, version 4.4.3, SWAN, version 4.0.1 |

Substance parameters:

| Molar mass (g/mol): 111 |
| Water solubility (mg/L): 2800 |
| Vapour pressure: 3760 Pa at 20°C |
| Kom/Koc (mL/g): 16.94/29.2 |
| 1/n: 1 |
| DT50 soil (days): 10.3 |
| DT50 water (days): 4.9 |
| DT50 sediment (days): 1000 |
| Q10=2.58, Walker equation coefficient 0.7 |
| DT50crop= 10 d |

Application rate

| Fruiting vegetables |
|---------------------|
| 177 kg/ha |
| Soil incorporation/ Injection at 20 cm depth (CAM 5) |

| Citrus Spring appl. FOCUS STEP 3+4 Scenario |
|-----------------|------------------|------------------|
| Water body      | Overall maximum PECSW (µg/L) | Overall maximum PECSED (µg/kg) |
|                 | STEP 3           | STEP 4 20 m buffer zone 20 m Vegetated Filter Strip (80/95 % runoff reduction) | STEP 3 20 m buffer zone 20 m Vegetated Filter Strip (80/95 % runoff reduction) |
| Ditch           | 5.404            | 1.154             |
| Stream          | 44.44            | 3.359             |
|                 |                  | 0.787             |

Spring (February)
### Citrus Spring appl. FOCUS STEP 3+4 Scenario

| Water body | Overall maximum PECSW (µg/L) | Overall maximum PECSED (µg/kg) |
|------------|-----------------------------|-------------------------------|
| R3 Stream  | 115.1                       | 9.259                         |
| R4 Stream  | 94.44                       | 6.273                         |

#### Autumn (October)

| Water body | Overall maximum PECSW (µg/L) | Overall maximum PECSED (µg/kg) |
|------------|-----------------------------|-------------------------------|
| D6 Ditch   | 127.7                       | 18.18                         |
| R2 Stream  | 39.32                       | 4.517                         |
| R3 Stream  | 127.6                       | 8.762                         |
| R4 Stream  | 73.68                       | 6.721                         |

### FOCUS STEP 3 Scenario Fruiting vegetables Spring (February)

| Water body | PEC<sub>SW</sub> (µg/L) | PEC<sub>SED</sub> (µg/kg) |
|------------|--------------------------|---------------------------|
| D6 Ditch   | Actual                  | TWA                       | Actual                  | TWA                       |
|            | 0 h                      | 5.404                     | 1.154                    | 1.128                     |
|            | 24 h                     | 2.101                     | 4.672                    | 1.032                     | 1.128                     |
|            | 4 d                      | 0.6597                    | 2.272                    | 0.8537                    | 1.005                     |
|            | 7 d                      | 0.5391                    | 1.565                    | 0.7907                    | 0.9321                    |
|            | 14 d                     | 0.3955                    | 1.024                    | 0.7145                    | 0.8458                    |
|            | 21 d                     | 0.5150                    | 0.8648                   | 0.7358                    | 0.8090                    |
|            | 28 d                     | 0.5162                    | 0.8020                   | 0.7203                    | 0.7881                    |
|            | 42 d                     | 0.5765                    | 0.7068                   | 0.7459                    | 0.7669                    |
|            | 52 d                     | 0.4582                    | 0.6725                   | 0.7199                    | 0.7615                    |
|            | 100 d                    | 0.4716                    | 0.5864                   | 0.7136                    | 0.7390                    |
| R2 Stream  | Actual                  | TWA                       | Actual                  | TWA                       |
|            | 0 h                      | 44.44                     | 3.359                    | 3.359                     |
|            | 24 h                     | 0.003884                  | 13.57                    | 0.9665                    | 1.871                     |
|            | 2 d                      | 0.001404                  | 6.785                    | 0.6993                    | 1.377                     |
|            | 4 d                      | 0.000511                  | 3.393                    | 0.4961                    | 1.093                     |
|            | 7 d                      | 0.005191                  | 3.394                    | 1.062                     | 0.9985                    |
|            | 14 d                     | 0.000217                  | 1.740                    | 0.5312                    | 0.8588                    |
|            | 21 d                     | 0.000119                  | 1.160                    | 0.4022                    | 0.7271                    |
### FOCUS STEP 3

**Scenario**
- **Fruiting vegetables**
- **Autumn (October)**

| Water body | Day after overall maximum | PEC<sub>SW</sub> (µg/L) | PEC<sub>SED</sub> (µg/kg) |
|------------|---------------------------|--------------------------|---------------------------|
|            | Actual | TWA | Actual | TWA |

#### D6 Ditch

|          | PEC<sub>SW</sub> | PEC<sub>SED</sub> |
|----------|------------------|-------------------|
| 0 h      | 127.7            | 18.18             |
| 24 h     | 50.26            | 17.74             |
| 2 d      | 37.81            | 17.17             |
| 4 d      | 17.68            | 15.79             |
| 7 d      | 30.01            | 14.45             |
| 10 d     | 0.000023         | 0.1300            |

#### R3 Stream

|          | PEC<sub>SW</sub> | PEC<sub>SED</sub> |
|----------|------------------|-------------------|
| 0 h      | 115.1            | 9.259             |
| 24 h     | 34.09            | 6.514             |
| 2 d      | 0.3              | 4.056             |
| 4 d      | 0.01864          | 2.766             |
| 7 d      | 0.006859         | 2.061             |
| 14 d     | 0.002266         | 1.429             |
| 21 d     | 0.001427         | 1.186             |
| 28 d     | 0.002074         | 2.371             |
| 42 d     | 0.000457         | 1.647             |
| 50 d     | 0.000350         | 1.489             |
| 100 d    | 0.000093         | 0.9517            |

#### R4 Stream

|          | PEC<sub>SW</sub> | PEC<sub>SED</sub> |
|----------|------------------|-------------------|
| 0 h      | 94.44            | 6.273             |
| 24 h     | 0.01858          | 1.964             |
| 2 d      | 0.005959         | 1.414             |
| 4 d      | 0.002069         | 2.004             |
| 7 d      | 0.01074          | 1.646             |
| 14 d     | 0.000535         | 1.288             |
| 21 d     | 0.000221         | 1.069             |
| 28 d     | 0.000135         | 0.9276            |
| 42 d     | 0.000070         | 0.7479            |
| 50 d     | 0.000049         | 0.6771            |
| 100 d    | 0.000023         | 0.4342            |
|    | R2   |         |         |      |  
|----|------|---------|---------|-----|  
|    | Stream | 0 h     |         | 24 h |  
| 14 d | 9.450 | 29.71   | 13.28   | 16.66 |  
| 21d  | 7.631 | 22.78   | 12.18   | 15.96 |  
| 28 d  | 5.394 | 18.79   | 11.01   | 15.22 |  
| 42 d  | 2.017 | 13.82   | 9.556   | 14.58 |  
| 52 d  | 11.24 | 12.01   | 12.54   | 13.37 |  
| 100 d | 7.152 | 10.91   | 12.59   | 12.91 |  
|    | R3   |         |         | 24 h |  
|    | Stream | 0 h     |         | 24 h |  
| 14 d | 39.32 | 4.517   |         |  
| 24 h | 0.009607 | 25.94 | 1.741 | 3.256 |  
| 2 d  | 0.03709 | 12.97 | 1.759 | 2.524 |  
| 4 d  | 0.003053 | 8.052 | 1.283 | 2.114 |  
| 7 d  | 0.000885 | 4.603 | 0.9124 | 1.696 |  
| 14 d | 0.000311 | 2.312 | 0.6309 | 1.234 |  
| 21 d | 0.000156 | 1.542 | 0.4954 | 1.012 |  
| 28 d | 0.000094 | 1.156 | 0.4101 | 0.8733 |  
| 42 d | 0.000049 | 0.7709 | 0.2992 | 0.7004 |  
| 50 d | 0.000038 | 0.6476 | 0.2556 | 0.6331 |  
| 100 d | 0.000011 | 0.3238 | 0.1204 | 0.4046 |  
|    | R4   |         |         | 24 h |  
|    | Stream | 0 h     |         | 24 h |  
| 14 d | 73.68 | 6.721   |         |  
| 24 h | 0.005456 | 31.33 | 2.148 | 4.162 |  
| 2 d  | 0.002051 | 15.67 | 1.569 | 3.105 |  
| 4 d  | 0.1807 | 8.081 | 1.202 | 2.283 |  
| 7 d  | 0.000358 | 4.646 | 0.8890 | 1.761 |  
| 14 d | 0.000472 | 2.323 | 0.6163 | 1.253 |  
| 21 d | 0.000252 | 1.549 | 0.4882 | 1.020 |  
| 28 d | 0.000162 | 1.162 | 0.4053 | 0.8771 |  
| 42 d | 0.000067 | 0.7745 | 0.2966 | 0.7012 |  

www.efs.europa.eu/efsajournal 58  EFSA Journal 2018;16(11):5464
### FOCUS STEP 4

**Scenario:** Fruiting vegetables

**Zone:** 20 m buffer

**Crop:** Spring (February)

| Water body | PEC<sub>SW</sub> (µg/L) Actual | TWA | PEC<sub>SED</sub> (µg/kg) Actual | TWA |
|------------|--------------------------------|-----|---------------------------------|-----|
| Ditch      | 0 h                           | 5.404 | 1.154                          |     |
|            | 24 h                          | 2.101 | 4.672                          | 1.032 | 1.128 |
|            | 2 d                           | 1.113 | 3.497                          | 0.9487 | 1.080 |
|            | 4 d                           | 0.6597 | 2.272                          | 0.8537 | 1.005 |
|            | 7 d                           | 0.5391 | 1.565                          | 0.7907 | 0.9321 |
|            | 14 d                          | 0.3955 | 1.024                          | 0.7145 | 0.8458 |
|            | 21d                           | 0.5150 | 0.8648                         | 0.7358 | 0.8090 |
|            | 28 d                          | 0.5162 | 0.8020                         | 0.7203 | 0.7881 |
|            | 42 d                          | 0.5765 | 0.7068                         | 0.7459 | 0.7669 |
|            | 52 d                          | 0.4582 | 0.6725                         | 0.7199 | 0.7615 |
|            | 100 d                         | 0.4716 | 0.5864                         | 0.7136 | 0.7390 |
| Stream     | 0 h                           | 10.48 | 0.7869                         |     |
|            | 24 h                          | 0.000910 | 3.197                          | 0.2254 | 0.4382 |
|            | 2 d                           | 0.000328 | 1.599                          | 0.1628 | 0.3219 |
|            | 4 d                           | 0.000119 | 0.7996                         | 0.1153 | 0.2577 |
|            | 7 d                           | 0.001252 | 0.8041                         | 0.2507 | 0.2340 |
|            | 14 d                          | 0.000051 | 0.4124                         | 0.1247 | 0.2015 |
|            | 21 d                          | 0.000028 | 0.2749                         | 0.09436 | 0.1706 |
|            | 28 d                          | 0.000017 | 0.2062                         | 0.07704 | 0.1494 |
|            | 42 d                          | 0.000008 | 0.1375                         | 0.05558 | 0.1215 |
|            | 50 d                          | 0.000007 | 0.1155                         | 0.04729 | 0.1103 |
|            | 100 d                         | 0.000002 | 0.05774                        | 0.02187 | 0.07124 |
| Stream     | 0 h                           | 27.53 | 2.249                          |     |
|            | 24 h                          | 8.166 | 14.15                          | 1.587 | 1.834 |
|            | 2 d                           | 0.08155 | 9.041                          | 0.9844 | 1.634 |
|            | 4 d                           | 0.004498 | 4.529                          | 0.6705 | 1.252 |
|            | 7 d                           | 0.001653 | 2.589                          | 0.4993 | 0.9715 |
|        |        |        |        |        |
|--------|--------|--------|--------|--------|
| 14 d   | 0.000546 | 1.295  | 0.3460 | 0.6958 |
| 21 d   | 0.000339 | 0.8816 | 0.2861 | 0.5735 |
| 28 d   | 0.000450 | 0.6617 | 0.2358 | 0.4958 |
| 42 d   | 0.000110 | 0.4412 | 0.1711 | 0.3981 |
| 50 d   | 0.000084 | 0.3706 | 0.1460 | 0.3599 |
| 100 d  | 0.000022 | 0.1853 | 0.06802| 0.2300 |

**FOCUS STEP 4**

|        |        |        |        |        |
|--------|--------|--------|--------|--------|
|        |        |        |        |        |
| **Scenario** | **Fruiting vegetables** | **20 m buffer zone** | **20 m VFS** | **Autumn (October)** |
| **Water body** | **D6** | **Ditch** | **PEC_{SW} (µg/L)** | **PEC_{SED} (µg/kg)** |
| **Day after overall maximum** | **Actual** | **TWA** | **Actual** | **TWA** |
| 0 h    | 127.7  | 18.18  |          |          |
| 24 h   | 50.26  | 78.66  | 17.74    | 18.12    |
| 2 d    | 37.81  | 67.04  | 17.17    | 17.96    |
| 4 d    | 17.68  | 52.57  | 15.79    | 17.50    |
| 7 d    | 30.01  | 41.30  | 14.45    | 16.66    |
| 14 d   | 9.450  | 29.71  | 13.28    | 15.96    |
| 21d    | 7.631  | 22.78  | 12.18    | 15.22    |
| 28 d   | 5.394  | 18.79  | 11.01    | 14.58    |
| 42 d   | 2.017  | 13.82  | 9.556    | 13.37    |
| 52 d   | 11.24  | 12.01  | 12.54    | 13.20    |
| 100 d  | 7.152  | 10.91  | 12.59    | 12.91    |

**R2**

|        |        |        |        |        |
|--------|--------|--------|--------|--------|
|        |        |        |        |        |
| **Stream** |        |        |        |        |
| 0 h    | 9.295  | 1.060  |          |          |
A contribution for deposition of 0.5 μg/L in PECsw is proposed to be added to previous PEC SW based on the average air concentration showed in the volatilization studies (500 μg/m3 and considering that 100% of the 1,3-D mass from 1 liter if air deposited into 1 liter of water).
Metabolite

Drip irrigation

Initial PECsw for metabolites taking into account only the deposition route of entry in drip irrigation:

(EZ)-3-chloroallyl alcohol: Considering an initial concentration 2.46 μg/L; a transformation factor of 0.833 for (EZ)-3-chloroallyl alcohol and that 1 mole of 1,3-D is transformed in 1 mol of (EZ)-3-chloroallyl alcohol, the initial PECsw for this metabolite is estimated to be 2.05 μg/L.

3-chloroacrylic acid: Considering an initial concentration 2.46 μg/L, a transformation factor of 0.96 for 3-chloroacrylic acid and that 1 mole of 1,3-D is transformed in 1 mol of 3-chloroacrylic acid, the initial PECsw for this metabolite is estimated to be 2.36 μg/L.

Soil Injected

**Metabolite 3-CAAL**

| Parameters used in FOCUSsw step 1 and 2 | Parameters used in FOCUSsw step 3 (if performed) |
|----------------------------------------|-------------------------------------------------|
| Molecular weight: 92.5                 | Water solubility (mg/L): 1000 (default value)   |
| Soil or water metabolite: Soil /water  | Vapour pressure: 0 Pa (default value)            |
| Koc (mL/g): 8.49                       | Koc (mL/g): 8.49                                 |
| DT₅₀ soil (d): 0.381 d                 | 1/n: 1.14                                        |
| DT₅₀ water/sediment system (d): 1.09   | Q₁₀=2.58, Walker equation coefficient 0.7       |
| DT₅₀ water (d): 1.09                   | Crop uptake factor: 0.0                          |
| DT₅₀ sediment (d): 1000                | Metabolite kinetically generated in simulation (yes/no): no |
| Crop interception (%): 0%              | Formation fraction in soil (kᵢ/kᵢₚ): 1           |
| Maximum occurrence observed:          | from parent                                      |
| Total Water and Sediment: 5.5%         | Formation fraction in sediment water (kᵢ/kᵢₚ): 1 from parent |
| Soil: 2 %                              | (Simulation as parent using a pseudo application rate) |

Application rate

Molecular weight relative to the parent: 0.830
Application rate assumed: 2.9382 kg/ha (assumed (EZ)-3-chloroallyl alcohol is formed at a maximum of 2% of the applied dose)
CAM 5*
20 cm depth
Fruiting vegetables (bare soil)
Number of applications: 1
Interval (d): -
Application rate(s): 177 kg a.s./ha

Application window:
Spring application
D6: 11 feb (42)- 13 mar (72)
R2: 01 feb (32)- 03 mar (62)
R3: 26 feb (57)- 28 mar (87)
R4: 16 feb (47)- 18 mar (77)

Autumn application
D6: 11 oct (284)- 10 nov (314)
R2: 01 oct (274)- 31 oct (304)
R3: 26 oct (299)- 25 nov (329)
R4: 16 oct (289)- 15 nov (319)

**CAM 8 is recommended for shank injection according to EFSA Journal (2004) 145, 1-31.** However, when CAM 8 is selected the runoff is negligible. Due to the volatility of the active substance, 1,3-D is distributed through the soil once it is applied. Therefore, CAM 5 was selected (Pesticide incorporation to an opened furrow which is then covered. Residues are distributed through the soil linearly increasing to a user defined depth).

**FOCUS STEP 1**

| Day after overall maximum | PEC_{SW} (µg/L) | PEC_{SED} (µg/kg) |
|---------------------------|-----------------|-------------------|
|                           | Actual          | TWA               | Actual          | TWA               |
| Southern EU Oct-fb        |                 |                   |                 |                   |
| 0 h                       | 996.07          | 82.27             |                 |                   |
| 24 h                      | 527.21          | 761.64            | 44.76           | 63.52             |
| 2 d                       | 279.13          | 527.21            | 23.70           | 48.32             |
| 4 d                       | 78.25           | 279.13            | 6.64            | 30.8642           |
| 7 d                       | 11.61           | 224.63            | 0.99            | 18.91             |
| 14 d                      | 0.14            | 113.61            | 0.01            | 9.56              |
| 21 d                      | 0.002           | 75.75             | 0.0001          | 6.38              |
| 28 d                      | 0.00            | 56.81             | 0.00            | 4.78              |
| 42 d                      | 0.00            | 37.87             | 0.00            | 3.19              |
| 50 d                      | 0.00            | 31.81             | 0.00            | 2.68              |
| 100 d                     | 0.00            | 15.91             | 0.00            | 1.34              |

**FOCUS STEP 2**

| Day after overall maximum | PEC_{SW} (µg/L) | PEC_{SED} (µg/kg) |
|---------------------------|-----------------|-------------------|
|                           | Actual          | TWA               | Actual          | TWA               |
| Southern EU Oct-fb        |                 |                   |                 |                   |
| 0 h                       | 27.04           | 0.80              |                 |                   |
| 24 h                      | 14.21           | 20.6234           | 0.43            | 0.61              |
| 2 d                       | 7.52            | 15.7445           | 0.23            | 0.47              |

10 Opinion of the Scientific Panel on Plant health, Plant protection products and their Residues on a request from EFSA on the appropriateness of using the current FOCUS surface water scenarios for estimating exposure for risk assessment in aquatic ecotoxicology in the context of Council Directive 91/414/EEC (Dezember 2004).
### FOCUS STEP 2

| Day after overall maximum | PEC<sub>SW</sub> (µg/L) | PEC<sub>SED</sub> (µg/kg) |
|---------------------------|-------------------------|--------------------------|
|                           | Actual                  | TWA                      |
|                           | Actual                  | TWA                      |
| 4 d                       | 2.37                    | 10.10                    | 0.11 | 0.31 |
| 7 d                       | 0.35                    | 6.24                     | 0.02 | 0.20 |
| 14 d                      | 0.004                   | 3.16                     | 0.0002 | 0.10 |
| 21 d                      | 0.00                    | 2.11                     | 0.00 | 0.07 |
| 28 d                      | 0.00                    | 1.58                     | 0.00 | 0.05 |
| 42 d                      | 0.00                    | 1.05                     | 0.00 | 0.03 |
| 50 d                      | 0.00                    | 0.89                     | 0.00 | 0.03 |
| 100 d                     | 0.00                    | 0.44                     | 0.00 | 0.01 |

### FOCUS STEP 3

**Scenario**
- Fruiting vegetables
- Spring (February)

| Water body | Day after overall maximum | PEC<sub>SW</sub> (µg/L) | PEC<sub>SED</sub> (µg/kg) |
|------------|---------------------------|-------------------------|--------------------------|
|            |                           | Actual                  | TWA                      |
|            |                           | Actual                  | TWA                      |
| Ditch      | 0 h                       | < 1e-6                  | < 1e-6                    |< 1e-6 |
|            | 24 h                      | < 1e-6                  | < 1e-6                    |< 1e-6 |
|            | 2 d                       | < 1e-6                  | < 1e-6                    |< 1e-6 |
|            | 4 d                       | < 1e-6                  | < 1e-6                    |< 1e-6 |
|            | 7 d                       | < 1e-6                  | < 1e-6                    |< 1e-6 |
|            | 14 d                      | < 1e-6                  | < 1e-6                    |< 1e-6 |
|            | 21 d                      | < 1e-6                  | < 1e-6                    |< 1e-6 |
|            | 28 d                      | < 1e-6                  | < 1e-6                    |< 1e-6 |
|            | 42 d                      | < 1e-6                  | < 1e-6                    |< 1e-6 |
|            | 52 d                      | < 1e-6                  | < 1e-6                    |< 1e-6 |
|            | 100 d                     | < 1e-6                  | < 1e-6                    |< 1e-6 |
| Stream     | 0 h                       | 0.000010                | < 1e-6                    |< 1e-6 |
|            | 24 h                      | 0.000010                | 0.000006                  |< 1e-6 |
|            | 2 d                       | < 1e-6                  | 0.000003                  |< 1e-6 |
|            | 4 d                       | < 1e-6                  | 0.000002                  |< 1e-6 |
|            | 7 d                       | < 1e-6                  | < 1e-6                    |< 1e-6 |
|            | 14 d                      | < 1e-6                  | < 1e-6                    |< 1e-6 |
|            | 21 d                      | < 1e-6                  | < 1e-6                    |< 1e-6 |
|            | 28 d                      | < 1e-6                  | < 1e-6                    |< 1e-6 |
|            | 42 d                      | < 1e-6                  | < 1e-6                    |< 1e-6 |
|            | 50 d                      | < 1e-6                  | < 1e-6                    |< 1e-6 |
| Water body | Day after overall maximum | PEC\(_{\text{sw}}\) (µg/L) | PEC\(_{\text{RED}}\) (µg/kg) |
|------------|--------------------------|-----------------------------|-----------------------------|
|            | Actual                   | TWA                         | Actual                      | TWA |
| Ditch      |                          |                             |                             |
| D6         | 0 h                      | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 24 h                     | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 2 d                      | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 4 d                      | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 7 d                      | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 14 d                     | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 21 d                     | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 28 d                     | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 42 d                     | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 50 d                     | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 100 d                    | < 1e-6                      | < 1e-6                      | < 1e-6 |
| Stream     |                          |                             |                             |
| R3         | 0 h                      | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 24 h                     | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 2 d                      | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 4 d                      | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 7 d                      | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 14 d                     | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 21 d                     | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 28 d                     | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 42 d                     | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 50 d                     | < 1e-6                      | < 1e-6                      | < 1e-6 |
|            | 100 d                    | < 1e-6                      | < 1e-6                      | < 1e-6 |
| R4         | 0 h                      | 0.000533                    | 0.000038                    |
|            | 24 h                     | 0.000533                    | 0.000397                    | 0.000016 | 0.000029 |
|            | 2 d                      | < 1e-6                      | 0.000199                    | 0.000011 | 0.000022 |
|            | 4 d                      | < 1e-6                      | 0.000099                    | 0.000008 | 0.000016 |
|            | 7 d                      | < 1e-6                      | 0.000057                    | 0.000006 | 0.000013 |
|            | 14 d                     | < 1e-6                      | 0.000028                    | 0.000004 | 0.000009 |
|            | 21 d                     | < 1e-6                      | 0.000019                    | 0.000003 | 0.000007 |
|            | 28 d                     | < 1e-6                      | 0.000014                    | 0.000002 | 0.000006 |
|            | 42 d                     | < 1e-6                      | 0.000009                    | 0.000001 | 0.000004 |
|            | 50 d                     | < 1e-6                      | 0.000009                    | < 1e-6   | 0.000004 |
|            | 100 d                    | < 1e-6                      | 0.000004                    | < 1e-6   | 0.000002 |
| Days | R2 Stream | 0 h | 24 h | 2 d | 4 d | 7 d | 14 d | 21 d | 28 d | 42 d | 50 d | 100 d |
|------|-----------|-----|------|-----|-----|-----|------|------|------|------|------|-------|
| 42 d | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 |
| 52 d | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 |
| 100 d| < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 |
| R3 Stream | 0 h | 0.03751 | 0.01265 | 0.007962 | 0.000628 | 0.000020 | 0.000123 | 0.000061 | 0.0000041 | 0.0000031 | < 1e-6 | < 1e-6 | 0.000009 |
| 24 h | 0.03751 | 0.000842 | 0.000421 | 0.000215 | 0.000123 | 0.000061 | 0.0000041 | 0.0000031 | 0.0000041 | 0.0000031 | < 1e-6 | < 1e-6 | 0.000009 |
| 2 d  | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| 4 d  | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| 7 d  | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| 14 d | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| 21 d | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| 28 d | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| 42 d | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| 50 d | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| 100 d| < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| R4 Stream | 0 h | 0.03023 | 0.01284 | 0.006421 | 0.003221 | 0.000842 | 0.000325 | 0.000129 | 0.0000041 | 0.0000031 | < 1e-6 | < 1e-6 | 0.000016 |
| 24 h | 0.03023 | 0.000842 | 0.000421 | 0.000215 | 0.000123 | 0.000061 | 0.0000041 | 0.0000031 | 0.0000041 | 0.0000031 | < 1e-6 | < 1e-6 | 0.000016 |
| 2 d  | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| 4 d  | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| 7 d  | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| 14 d | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| 21 d | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| 28 d | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| 42 d | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| 50 d | < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
| 100 d| < 1e-6   | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 | < 1e-6 |
### Metabolite 3-CAC

| Parameters used in FOCUSsw step 1 and 2 |
|------------------------------------------|
| Molecular weight: 106.5                  |
| Soil or water metabolite: Soil /water    |
| Koc (mL/g): 1.72 mL/g                    |
| DT$_{50}$ soil (d): 4.47 d               |
| DT$_{50}$ water/sediment system (d): 6.09|
| DT$_{50}$ water (d): 6.09                |
| DT$_{50}$ sediment (d): 6.09             |
| Crop interception (%): 0%                |
| Maximum occurrence observed:            |
| Total Water and Sediment: 8.6%          |
| Soil: 37.3%                              |

| Parameters used in FOCUSsw step 3 (if performed) |
|--------------------------------------------------|
| Water solubility (mg/L): 1000 (default value)    |
| Vapour pressure: 0 Pa (default value)            |
| Koc (mL/g): 1.72                                  |
| 1/n: 0.87                                        |
| Q10=2.58, Walker equation coefficient 0.7        |
| Crop uptake factor: 0.0                          |
| Metabolite kinetically generated in simulation (yes/no): no |
| Formation fraction in soil ($k_f/k_{dp}$): 1 from 3-CAAL |
| Formation fraction in sediment water ($k_f/k_{dp}$): 1 from CAAL |
| (Simulation as parent using a pseudo application rate) |

### Application rate

| Application rate |
|------------------|
| Molecular weight relative to the parent: 0.9597 |
| Application rate assumed: 63.3604 kg/ha (assumed 3-chloroacryllic acid is formed at a maximum of 37.3 % of the applied dose) |
| Fruiting vegetables (bare soil) |
| CAM 5* |
| 20 cm depth |
| Number of applications: 1 |
| Interval (d): - |
| Application rate(s): 177 kg a.s./ha |
| Application window: |
| Spring application |
| D6: 11 feb (42)- 13 mar (72) |
| R2: 01 feb (32)- 03 mar (62) |
| R3: 26 feb (57)- 28 mar (87) |
| R4: 16 feb (47)- 18 mar (77) |
| Autumn application |
| D6: 11 oct (284)- 10 nov (314) |
| R2: 01 oct (274)- 31 oct (304) |
| R3: 26 oct (299)- 25 nov (329) |
| R4: 16 oct (289)- 15 nov (319) |
**CAM 8 is recommended for shank injection according to EFSA Journal (2004) 145, 1-31.** However, when CAM 8 is selected the runoff is negligible. Due to the volatility of the active substance, 1,3-D is distributed through the soil once it is applied. Therefore, CAM 5 was selected (Pesticide incorporation to an opened furrow which is then covered. Residues are distributed through the soil linearly increasing to a user defined depth).

### FOCUS STEP 1

| Day after overall maximum | PEC_{SW} (µg/L) | PEC_{SED} (µg/kg) |
|---------------------------|-----------------|-------------------|
|                           | Actual | TWA | Actual | TWA |
| **Southern EU Oct-fEB**   | 0 h    | 2.17E+04 | 362.43 |
|                           | 24 h   | 1.93E+04 | 332.37 | 347.40 |
|                           | 2 d    | 1.72E+04 | 296.6108 | 330.78 |
|                           | 4 d    | 1.37E+04 | 236.23 | 298.02 |
|                           | 7 d    | 9.76E+03 | 167.90 | 256.07 |
|                           | 14 d   | 4.4E+03 | 75.69 | 185.90 |
|                           | 21 d   | 1.98E+03 | 34.12 | 141.32 |
|                           | 28 d   | 894.28 | 15.38 | 111.87 |
|                           | 42 d   | 181.74 | 3.13 | 77.15 |
|                           | 50 d   | 73.12 | 1.26 | 65.13 |
|                           | 100 d  | 0.25 | 0.004 | 32.68 |

### FOCUS STEP 2

| Day after overall maximum | PEC_{SW} (µg/L) | PEC_{SED} (µg/kg) |
|---------------------------|-----------------|-------------------|
|                           | Actual | TWA | Actual | TWA |
| **Southern EU Oct-fEB**   | 0 h    | 4.9E+03 | 82.20 |
|                           | 24 h   | 4.37E+03 | 75.24 | 78.72 |
|                           | 2 d    | 3.9E+03 | 67.15 | 74.96 |
|                           | 4 d    | 3.11E+03 | 53.48 | 67.54 |
|                           | 7 d    | 2.21E+03 | 38.01 | 58.03 |
|                           | 14 d   | 996.15 | 17.13 | 42.13 |
|                           | 21 d   | 449.07 | 7.72 | 32.03 |
|                           | 28 d   | 202.44 | 3.48 | 25.35 |
|                           | 42 d   | 41.14 | 0.71 | 17.48 |
|                           | 50 d   | 16.55 | 0.29 | 14.76 |
|                           | 100 d  | 0.06 | 0.001 | 7.41 |

---

11 Opinion of the Scientific Panel on Plant health, Plant protection products and their Residues on a request from EFSA on the appropriateness of using the current FOCUS surface water scenarios for estimating exposure for risk assessment in aquatic ecotoxicology in the context of Council Directive 91/414/EEC (December 2004).
| FOCUS STEP 3 Scenario Fruiting vegetables Spring (February) | Water body | Day after overall maximum | PEC<sub>SW</sub> (µg/L) | PEC<sub>SED</sub> (µg/kg) |
|---|---|---|---|---|
| | | Actual | TWA | Actual | TWA |
| D6 | Ditch | 0 h | 0.4125 | 0.06434 |
| | | 24 h | 0.2383 | 0.06279 | 0.06423 |
| | | 2 d | 0.1840 | 0.05971 | 0.06398 |
| | | 4 d | 0.09361 | 0.05465 | 0.06265 |
| | | 7 d | 0.06171 | 0.05050 | 0.05959 |
| | | 14 d | 0.04298 | 0.04661 | 0.05432 |
| | | 21 d | 0.05809 | 0.04681 | 0.05217 |
| | | 28 d | 0.05676 | 0.04562 | 0.05065 |
| | | 42 d | 0.06263 | 0.04545 | 0.04880 |
| | | 52 d | 0.04794 | 0.04359 | 0.04818 |
| | | 100 d | 0.03389 | 0.03506 | 0.04396 |
| R2 | Stream | 0 h | 9.296 | 0.4503 |
| | | 24 h | 0.000515 | 0.1296 | 0.2488 |
| | | 2 d | 0.000187 | 0.09371 | 0.1840 |
| | | 4 d | 0.000067 | 0.06728 | 0.1329 |
| | | 7 d | 0.000082 | 0.06252 | 0.1069 |
| | | 14 d | 0.000013 | 0.03853 | 0.07788 |
| | | 21 d | 0.000008 | 0.02795 | 0.06297 |
| | | 28 d | 0.000005 | 0.02139 | 0.05340 |
| | | 42 d | 0.000003 | 0.01394 | 0.04139 |
| | | 50 d | 0.000002 | 0.01145 | 0.03680 |
| | | 100 d | < 1e-6 | 0.005295 | 0.02220 |
| R3 | Stream | 0 h | 45.49 | 2.288 |
| | | 24 h | 7.381 | 23.15 | 1.346 | 1.858 |
| | | 2 d | 0.06718 | 13.31 | 0.8856 | 1.560 |
| | | 4 d | 0.003885 | 6.663 | 0.6196 | 1.176 |
| | | 7 d | 0.001522 | 3.809 | 0.4622 | 0.9104 |
| | | 14 d | 0.000498 | 1.905 | 0.3006 | .6458 |
| | | 21 d | 0.000277 | 1.274 | 0.2185 | 0.5183 |
| | | 28 d | 0.000203 | 0.9557 | 0.1659 | 0.4371 |
| | | 42 d | 0.000104 | 0.6372 | 0.1071 | 0.3364 |
| | | 50 d | 0.000080 | 0.5352 | 0.08771 | 0.2982 |
### FOCUS STEP 3

**Scenario**
- Fruiting vegetables
- Autumn (October)

| Water body | Day after overall maximum | PEC<sub>SW</sub> (µg/L) | PEC<sub>SED</sub> (µg/kg) |
|------------|---------------------------|-------------------------|---------------------------|
|            | Actual                    | TWA                     | Actual                    | TWA                     |
| **D6**     |                           |                         |                           |                         |
| Ditch      | 0 h                       | 51.05                   | 3.404                     |                         |
|            | 24 h                      | 20.35                   | 29.59                     | 3.049                   | 3.367                   |
|            | 2 d                       | 17.70                   | 24.20                     | 2.598                   | 3.284                   |
|            | 4 d                       | 4.130                   | 18.94                     | 2.956                   | 3.104                   |
|            | 7 d                       | 8.494                   | 13.34                     | 2.755                   | 2.957                   |
|            | 14 d                      | 1.963                   | 9.069                     | 2.011                   | 2.764                   |
|            | 21 d                      | 1.515                   | 6.651                     | 1.674                   | 2.498                   |
|            | 28 d                      | 1.062                   | 5.327                     | 1.404                   | 2.283                   |
|            | 42 d                      | 0.3920                  | 3.805                     | 0.9737                  | 1.944                   |
|            | 52 d                      | 1.505                   | 3.255                     | 1.050                   | 1.786                   |
|            | 100 d                     | 1.043                   | 2.250                     | 0.9905                  | 1.420                   |
| **R2**     |                           |                         |                           |                         |
| Stream     | 0 h                       | 13.18                   | 0.9567                    |                         |
|            | 24 h                      | 0.002040                | 8.694                     | 0.3691                  | 0.6878                  |
|            | 2 d                       | 0.002387                | 4.348                     | 0.2902                  | 0.5322                  |
|            | 4 d                       | 0.000321                | 2.238                     | 0.2072                  | 0.4007                  |
|            | 7 d                       | 0.000137                | 1.279                     | 0.1556                  | 0.3099                  |
|            | 14 d                      | 0.000048                | 0.6396                    | 0.1022                  | 0.2199                  |
|            | 21 d                      | 0.000026                | 0.4264                    | 0.07417                 | 0.1764                  |
|            | 28 d                      | 0.000016                | 0.3198                    | 0.05669                 | 0.1489                  |
| Time | Value | Percentile 95 | Percentile 50 | Percentile 10 |
|------|-------|--------------|--------------|--------------|
| 42 d | 0.000009 | 0.2132 | 0.03695 | 0.1147 |
| 50 d | 0.000007 | 0.1791 | 0.03036 | 0.1018 |
| 100 d | 0.000002 | 0.08956 | 0.01428 | 0.06109 |

**R3 Stream**

| Time | Value | Percentile 95 | Percentile 50 | Percentile 10 |
|------|-------|--------------|--------------|--------------|
| 0 h | 46.85 | 15.96 | 1.018 | 1.352 |
| 24 h | 5.585 | 15.96 | 1.018 | 1.352 |
| 2 d | 0.7182 | 9.901 | 0.7444 | 1.156 |
| 4 d | 0.002000 | 5.036 | 0.4851 | 0.8873 |
| 7 d | 0.000759 | 2.879 | 0.3573 | 0.6887 |
| 14 d | 0.000244 | 1.440 | 0.2314 | 0.4897 |
| 21 d | 0.000132 | 0.9598 | 0.1667 | 0.3928 |
| 28 d | 0.000091 | 0.7199 | 0.1268 | 0.3313 |
| 42 d | 0.000058 | 0.4799 | 0.08218 | 0.2551 |
| 50 d | 0.000045 | 0.4032 | 0.06741 | 0.2263 |
| 100 d | 0.000002 | 0.2016 | 0.03192 | 0.1357 |

**R4 Stream**

| Time | Value | Percentile 95 | Percentile 50 | Percentile 10 |
|------|-------|--------------|--------------|--------------|
| 0 h | 23.73 | 10.09 | 0.4408 | 0.8464 |
| 24 h | 0.001113 | 5.045 | 0.3219 | 0.6334 |
| 2 d | 0.000415 | 2.541 | 0.2358 | 0.4626 |
| 4 d | 0.006882 | 1.453 | 0.1768 | 0.3545 |
| 7 d | 0.000069 | 0.7264 | 0.1160 | 0.2500 |
| 14 d | 0.000092 | 0.4843 | 0.08423 | 0.2002 |
| 21 d | 0.000051 | 0.3632 | 0.06440 | 0.1688 |
| 28 d | 0.000033 | 0.2422 | 0.04197 | 0.1300 |
| 42 d | 0.000014 | 0.2034 | 0.03449 | 0.1154 |
| 50 d | 0.000011 | 0.1017 | 0.01631 | 0.06924 |

**Estimation of concentrations from other routes of exposure (Regulation (EU) No 284/2013, Annex Part A, point 9.4)**

No data submitted
## Ecotoxicology

### Effects on birds and other terrestrial vertebrates (Regulation (EU) N° 283/2013, Annex Part A, point 8.1 and Regulation (EU) N° 284/2013, Annex Part A, point 10.1)

| Species        | Test substance | Time scale | End point | Toxicity (mg/kg bw per day) |
|----------------|----------------|------------|-----------|-----------------------------|
| **Birds**      |                |            |           |                             |
| Bobwhite quail | 1,3-D          | Acute      | LD₅₀      | 92                          |
| Bobwhite quail | 1,3-D          | Short-term | LD₅₀      | 3082                        |
| Mallard duck   | 1,3-D          | Short-term | LD₅₀      | 1085                        |
| Mallard duck   | 1,3-D          | Long-term  | NOEC      | 36                          |
| Bobwhite quail | 1,3-D          | Long-term  | LD₅₀/10   | 9.2                         |
| **Mammals**    |                |            |           |                             |
| Rat            | 1,3-D          | Acute      | LD₅₀      | 130                         |
| Rat            | 1,3-D          | Acute      | LD₅₀      | 2.7                         |
| Rat            | 1,3-D          | Long-term  | NOAEL     | 2.5                         |
| Rat            | 1,3-D          | Long-term  | NOAEL     | 5*                          |

### Endocrine disrupting properties (Annex Part A, points 8.1.5)

Pending on the data gap identified in Section 2, further ecotoxicological data may be needed to draw a firm conclusion on the potential of (EZ)-1,3-dichloropropene for endocrine disruption in non-target organisms.

### Additional higher tier studies (Annex Part A, points 10.1.1.2):

A residue study in tomatoes in Italy was provided. No residues of 1,3-D were detectable in any sample analyzed in any of the trials assessed. Therefore, the residues in tomato plants should be considered below 0.002 mg/kg. The tomato plants were planted in greenhouses and then transplanted into treated soil 14 days after application.

A residue study in insects and earthworms from tomato fields injected with Telone II in Italy was provided. The maximum measured residue levels on any sampling occasion were 1.52 mg/kg for insects and 0.40 mg/kg for earthworms. It was noted that to avoid the escape of arthropods from pitfall traps, especially jumping arthropods such as crickets, a small amount of water was added to each trap at the time it was set for sampling. RMS considers that this study is not reliable to refine the RUD in arthropods. The majority of the experts in the Pesticides Peer Review Meeting 181 on 1,3-dichloropropene agreed that this study could not be used for residue refinement either in earthworms (please refer to study summary for further details).

A study on the presence of mammals on fields treated with Telone II was provided by the applicant, and it was considered useful by RMS to confirm that the wood mouse is present in the treated field, and therefore it could be used as a focal species that can be exposed to 1,3-D residues.

All the available higher Tier data were discussed at the Peer review experts’ meeting 81 (June, 2018). Please, refer to experts’ consultation 5.1 in the Report of Pesticides Peer Review Experts’ Meeting 181.
Terrestrial vertebrate wildlife (birds, mammals, reptile and amphibians) (Annex Part A, points 8.1.4, 10.1.3):
No relevant information from open literature have been found.

Values in **bold** are used in the risk assessment. *Considered the relevant endpoint for risk assessment (EFSA, 2009b)*

Toxicity/exposure ratios for terrestrial vertebrates (Regulation (EU) N° 284/2013, Part A, Annex point 10.1)

Field application (GF-3035)

Fruiting vegetables at 177000 g a.s./ha x 1 every two years (soil injection):

Tier 1 risk assessment for birds and mammals*

| Acute birds | Crop | Scenario | Generic focal species | Diet of generic focal species in crop (%) | SV mean | SV 90 %-ile | DDDa | TERa |
|-------------|------|----------|-----------------------|------------------------------------------|--------|-------------|------|------|
|             | Bare soils | BBCH < 10 | Small granivorous bird "finch" | 100% weed seeds | 11.4 | 24.7 | 4371.9 | 0.021 |
|             | Bare soils | BBCH < 10 | Small omnivorous bird "lark" | 50% seeds 50% ground arthropods | 8.2 | 17.4 | 3079.8 | 0.030 |
|             | Bare soils | BBCH < 10 | Small insectivorous bird "wagtail" | 100% soil dwelling invertebrates | 5.9 | 10.9 | 1929.3 | 0.048 |

| Long-term birds | Crop | Scenario | Generic focal species | Diet of generic focal species in crop (%) | SV mean | SV 90 %-ile | DDDlt | TERlt |
|-----------------|------|----------|-----------------------|------------------------------------------|--------|-------------|-------|-------|
|                 | Bare soils | BBCH < 10 | Small granivorous bird "finch" | 100% weed seeds | 11.4 | 24.7 | 1069.434 | 0.034 |
|                 | Bare soils | BBCH < 10 | Small omnivorous bird "lark" | 50% seeds 50% ground arthropods | 8.2 | 17.4 | 769.242 | 0.047 |
|                 | Bare soils | BBCH < 10 | Small insectivorous bird "wagtail" | 100% soil dwelling invertebrates | 5.9 | 10.9 | 553.479 | 0.065 |

| Acute mammals | Crop | Scenario | Generic focal species | Shortcut value for mean RUD | Shortcut value for 90 %%-ile | DDDa | TERa |
|--------------|------|----------|-----------------------|--------------------------|-----------------------------|------|------|
|              | Bare soils | BBCH < 10 | Small omnivorous mammal "mouse" | 5.7 | 14.3 | 2531.1 | 0.051 |

| Long-term mammals | Crop | Scenario | Generic focal species | Shortcut value for mean RUD | Shortcut value for 90 %%-ile | DDDLt | TERlt |
|-------------------|------|----------|-----------------------|--------------------------|-----------------------------|-------|-------|
|                   | Bare soils | BBCH < 10 | Small omnivorous mammal "mouse" | 5.7 | 14.3 | 534.717 | 0.0094 |

* For illustrative purpose only since EFSA (2009b) does not cover type of applications such as soil direct injection and drip irrigation and the inhalation route of exposure

Risk assessment for birds and mammals via inhalation*
Growth stage | Indicator or focal species | Time scale | ETE (mg/kg bw per day) | TER | Trigger
--- | --- | --- | --- | --- | ---
Bare soil | Acute inhalation exposure | Exposure = 460000 µg/kg bw | 162<sup>1</sup> | 10 |
Bare soil | Acute inhalation exposure | Exposure = 0.004098 mg/L | 658<sup>1</sup> | 10 |

<sup>1</sup>Although the risk assessment via inhalation showed low risk, many uncertainties are identified with the used methodologies.

**Risk from bioaccumulation and food chain behaviour** *indicate when not relevant i.e if Log kow≤3*
1,3-D has log Kow value of 1.82 and 2.1 for the cis and trans isomers respectively, indicating that it is not necessary to consider the risk for secondary poisoning.

**Risk from consumption of contaminated water**

**Puddle scenario, Screening step**

| Application rate (g/ha) | NOEL (mg/kg bw) | Ratio | Trigger |
|---|---|---|---|
| 1,3-D | 36 | 4920 | 50 |

Since the ratio exceeds 50 for 1,3-D, a specific TER calculation is required.

| Scenarios | Indicator or focal species | Time scale | PEC<sub>dw</sub>xDWR | TER | Trigger |
|---|---|---|---|---|---|
| Puddle scenario | Birds | acute | 0.0008 | 115000 | 10 |
| Puddle scenario | Mammals | acute | 0.0004 | 325000 | 10 |
| Puddle scenario | Birds | Long-term | 0.0008 | 45000 | 5 |
| Puddle scenario | Mammals | Long-term | 0.0004 | 6250 | 5 |

**Glasshouse application (GF-3036)**

No information has been provided on the type of protected structures. Due to the lack of that information, the same conclusion as for outdoor use is drawn.

**Toxicity data for all aquatic tested species (Regulation (EU) N° 283/2013, Annex Part A, points 8.2 and Regulation (EU) N° 284/2013 Annex Part A, point 10.2)** *This section does not yet reflect the new EFSA Guidance Document on aquatic organisms which has been noted in the meeting of the Standing Committee on Plants, Animals, Food and Feed on 11 July 2014.*

| Group | Test substance | Time-scale (Test type) | End point | Toxicity<sup>1</sup> |
|---|---|---|---|---|
| Laboratory tests | | | | |
| Fish | Rainbow trout | a.s.: 1,3-D | Acute 96 hr (flow-through) | Mortality, LC<sub>50</sub> | 2.78 mg a.s./L<sub>(mm)</sub> |
| | Cyprinodon variegatus | a.s.: 1,3-D | Acute 96 hr (flow-through) | Mortality, LC<sub>50</sub> | 0.87 mg a.s./L<sub>(mm)</sub> |
| | Fathead minnow *(Pimephales promelas)* | a.s.: 1,3-D | Chronic (flow-through) | 33-d Growth NOEC | 0.032 mg a.s./L<sub>(mm)</sub> |
| Group                          | Test substance                  | Time-scale (Test type) | End point                      | Toxicity\(^1\)          |
|-------------------------------|---------------------------------|------------------------|--------------------------------|-------------------------|
| Fathead minnow (Pimephales promelas) | a.s.: 1,3-D                       | Chronic (flow-through) | 33-d Growth NOEC (dry weight) | 0.0069 mg a.s./L\(_{(mm)}\) |
| Rainbow trout (Oncorhynchus mykiss) | (EZ)-3-chloroallyl alcohol       | 96 hr (semi-static)    | Mortality, LC\(_{50}\)        | 0.986 mg a.s./L\(_{(mm)}\) |
| Rainbow trout (Oncorhynchus mykiss) | (EZ)-3-chloroacrylic acid        | 96 hr (static)         | Mortality, LC\(_{50}\)        | 69.5 mg a.s./L\(_{(mm)}\) |
| Fathead minnow (Pimephales promelas) | (EZ)-3-chloroacrylic acid        | Chronic (flow-through) | 33-d reproduction NOEC        | 2.22 mg a.s./L\(_{(mm)}\) |

**Aquatic invertebrates**

|                      | Test substance                  | Time-scale (Test type) | End point                      | Toxicity\(^1\)          |
|----------------------|---------------------------------|------------------------|--------------------------------|-------------------------|
| Daphnia magna        | a.s.: 1,3-D                      | 48 h (static)          | Mortality, EC\(_{50}\)        | 3.58 mg a.s./L\(_{(mm)}\) |
| Daphnia magna        | a.s.: 1,3-D                      | 48 h (semi-static)     | Mortality, EC\(_{50}\)        | 1.94 mg a.s./L\(_{(mm)}\) |
| Daphnia magna        | a.s.: 1,3-D                      | 48 h (semi-static)     | Mortality, EC\(_{50}\)        | 1.83 mg a.s./L\(_{(mm)}\) |
| Crassotrea virginica | a.s.: 1,3-D                      | 96 h (flow-through)    | Shell growth inhibition, EC\(_{50}\) | 0.64 mg a.s./L\(_{(mm)}\) |
| Mysisidopsis bahia   | a.s.: 1,3-D                      | 96 h (flow-through)    | Mortality, EC\(_{50}\)        | 0.67 mg a.s./L\(_{(mm)}\) |
| Daphnia magna        | a.s.: 1,3-D                      | 21 d (flow-through)    | Growth and reproduction NOEC   | 0.0701 mg a.s./L\(_{(mm)}\) |
| Daphnia magna        | (EZ)-3-chloroallyl alcohol       | 48 h (static)          | Mortality, EC\(_{50}\)        | 2.30 mg a.s./L\(_{(mm)}\) |
| Daphnia magna        | (EZ)-3-chloroacrylic acid        | 48 h (semi-static)     | Mortality, EC\(_{50}\)        | 55 mg a.s./L\(_{(mm)}\)  |
| Daphnia magna        | (EZ)-3-chloroacrylic acid        | 21 d (semi-static)     | NOEC (based on length of the adults at test termination) | 2.53 mg a.s./L\(_{(mm)}\) |

**Sediment-dwelling organisms**

| Chironomus riparius | GF- 3035                        | 28-d (static)          | NOEC (emergence)               | 0.369 mg a.s./L\(_{(mm)}\) |

**Algae**

| Pseudokirchneriella subcapitata | a.s.: 1,3-D | 96-h (static) | ErC\(_{50}\) | 6.4 mg a.s./L |
|---------------------------------|-------------|---------------|--------------|--------------|
|                                 |             |               | EbC\(_{50}\) | 3.5 mg a.s./L |
|                                 |             |               | EyC\(_{50}\) | 3.3 mg a.s./L |
|                                 |             |               | NOEC         | 0.889 mg a.s./L |
|                                 |             |               | ErC\(_{10}\) | 4.41 mg a.s./L |

| Pseudokirchneriella subcapitata | a.s.: 1,3-D | 96-h (static) | E\(_{r}\)C\(_{50}\) | 5.45 mg a.s./L |
|---------------------------------|-------------|---------------|---------------------|---------------|
|                                 |             |               | E\(_{b}\)C\(_{50}\) | 3.36 mg a.s./L |
|                                 |             |               | E\(_{y}\)C\(_{50}\) | 3.41 mg a.s./L |
|                                 |             |               | NOEC                | 0.759 mg a.s./L |
|                                 |             |               | E\(_{r}\)C\(_{10}\) | 4.37 mg a.s./L |

**Higher plant**

Further testing on aquatic organisms

None

Potential endocrine disrupting properties (Annex Part A, point 8.2.3)

Pending on the data gap identified in Section 2, further ecotoxicological data may be needed to draw a firm conclusion on the potential of (EZ)-1,3-dichloropropene for endocrine disruption in non-target organisms.

\(^1\)(nom) nominal concentration; (mm) mean measured concentration; prep.: preparation; a.s.: active substance
### Bioconcentration in fish (Annex Part A, point 8.2.2.3)

|                           | 1,3-Dichloropropene | 3-CAA | 3-CACA |
|---------------------------|----------------------|-------|--------|
| logP<sub>O/W</sub>        | <3                   |       |        |
| Steady-state bioconcentration factor (BCF) (total wet weight/normalised to 5% lipid content) |         |       |        |
| Uptake/depuration kinetics BCF (total wet weight/normalised to 5% lipid content) |         |       |        |
| Annex VI Trigger for the bioconcentration factor |         |       |        |
| Clearance time (days) (<i>CT</i><sub>50</sub>) |         |       |        |
| (<i>CT</i><sub>90</sub>) |         |       |        |
| Level and nature of residues (%) in organisms after the 14 day depuration phase |         |       |        |

* based on total <sup>14</sup>C or on specific compounds
Toxicity/exposure ratios for the most sensitive aquatic organisms (Regulation (EU) N° 284/2013, Annex Part A, point 10.2)

Field application (GF-3035)

FOCUS_{sw} - TERs for 1,3-dichloropropene – fruiting vegetables at 177000 g a.s./ha x 1 every two years (worst-case between spring and autumn scenarios)

| Scenario | PEC global max (µg L) | Fish acute | Fish chronic | Aquatic invertebrates | Aquatic invertebrates prolonged | Sed. dweller prolonged | Algae | Higher plants |
|----------|-----------------------|------------|-------------|-----------------------|-------------------------------|-----------------------|-------|---------------|
|          | Cyprinodon variegatus | Pinephales promelas | Crassostrea virginica | Daphnia magna | Chironomus riparius | P. subcapitata | Lemma gibba |
| Step 3   |                       |             |             |                       |                               |                       |       |               |
| D6 Ditch | 127.7                 | 6.8         | 0.1         | 5.0                   | 0.5                           | 2.9                    | 42.7  | -             |
| R2 Stream| 44.44                 | 19.6        | 0.2         | 14.4                  | 1.6                           | 8.3                    | 122.6 | -             |
| R3 Stream| 127.6                 | 6.8         | 0.1         | 5.0                   | 0.5                           | 2.9                    | 42.7  | -             |
| R4 Stream| 94.44                 | 9.2         | 0.1         | 6.8                   | 0.7                           | 3.9                    | 57.7  | -             |

* The available study is not considered valid for the risk assessment (please, refer to Vol 3 CA B.9.2.7/01 for details)

FOCUS_{sw} - TERs for (EZ)-3-chloroallyl alcohol – fruiting vegetables at 177000 g a.s./ha x 1 every two years (worst-case between spring and autumn scenarios)

| Scenario | PEC global max (µg L) | Fish acute | Fish chronic | Aquatic invertebrates | Aquatic invertebrates prolonged | Sed. dweller prolonged | Algae | Higher plants |
|----------|-----------------------|------------|-------------|-----------------------|-------------------------------|-----------------------|-------|---------------|
|          | Oncorhynchus mykiss   | Daphnia magna |                |                       |                               |                       |       |               |
| Step 1   |                       |             |             |                       |                               |                       |       |               |
|                       | LC_{50} (µg/L) | NOEC (µg/L) | EC_{50} (µg/L) | NOEC (µg/L) | NOEC (µg/L) | EC_{50} (µg/L) | EC_{50} (µg/L) |
| Step 2   | 996.07                | 0.99        | -           | 2.31                   | -                             | 0.55                  | 20.16 |

* The risk assessment is performed considering the metabolite as 10 times more toxic than the parent
** No data available

**FOCUS**sw - TERs for (EZ)-3-chloroacrylic acid – fruiting vegetables at 177000 g a.s./ha x 1 every two years (worst-case between spring and autumn scenarios)

| Scenario | PEC global max (µg L) | Fish acute | Fish chronic | Aquatic invertebrates | Aquatic invertebrates prolonged | Sed. dweller prolonged | Algae | Higher plants |
|----------|------------------------|------------|-------------|-----------------------|---------------------------------|------------------------|-------|---------------|
|          |                        | Oncorhynchus mykiss | Pimephales promelas | Daphnia magna | Daphnia magna | Chironomus riparius | P. subcapitata |
|          |                        | LC₅₀ (µg/L) | NOEC (µg/L) | EC₅₀ (µg/L) | NOEC (µg/L) | NOEC (µg/L) | EC₅₀ (µg/L) | EC₅₀ (µg/L) |
| Step 1   | 21700                  | 69500      | 2220       | 55000          | 2530             | 36.9*        | 545*        | -             |
| Step 2   | 4900                   | 14.18      | 0.5        | 11.22          | 0.5              | 0.008        | 0.11        | -             |
| Step 3   |                        |            |            |                |                  |             |             |               |
| D6 Ditch |                        | 51.05      | 1361       | 43.5           | 1077             | 49.6         | 0.7          | 10.68         |
| R2 Stream|                        | 13.18      | 5273       | 168.4          | 4173             | 192.0        | 2.8          | 41.35         |
| R3 Stream|                        | 46.85      | 1483       | 47.4           | 1174             | 54.0         | 0.8          | 11.63         |
| R4 Stream|                        | 27.93      | 2488       | 79.5           | 1969             | 90.6         | 1.3          | 19.51         |
| Trigger  |                        | 100        | 10         | 100            | 10               | 10           | 10          | 10            |

*The risk assessment is performed considering the metabolite as 10 times more toxic than the parent

**FOCUS**sw - TERs for 1,3-dichloropropene– fruiting vegetables at 226000 g a.s./ha x 1 every two years considering a 10 m buffer zone

| Scenario | PEC global max (µg L) | Fish acute | Fish chronic | Aquatic invertebrates | Aquatic invertebrates prolonged | Sed. dweller prolonged | Algae | Higher plants |
|----------|------------------------|------------|-------------|-----------------------|---------------------------------|------------------------|-------|---------------|
|          |                        | Cyprinodon variegatus | Pimephales promelas | Crassostrea virginica | Daphnia magna | Chironomus riparius | P. subcapitata | Lemma gibba |
|          |                        | LC₅₀ (µg/L) | NOEC (µg/L) | EC₅₀ (µg/L) | NOEC (µg/L) | NOEC (µg/L) | EC₅₀ (µg/L) | EC₅₀ (µg/L) |
| Bystander study |                  | 870        | 6.9        | 640          | 70.1             | 360         | 5450       | *             |
| Trigger  |                        | 2.46       | 353.7      | 28.2          | 260.2             | 28.5        | 150.0      | 2215.4       |

*.* The available study is not considered valid for the risk assessment (please, refer to Vol 3 CA B.9.2.7/01 for details).

**FOCUS**sw - TERs for 1,3-dichloropropene– fruiting vegetables at 226000 g a.s./ha x 1 every two years (worst-case between spring and autumn scenarios)

| Scenario | PEC global max (µg L) | Fish acute | Fish chronic | Aquatic invertebrates | Aquatic invertebrates prolonged | Sed. dweller prolonged | Algae | Higher plants |
|----------|------------------------|------------|-------------|-----------------------|---------------------------------|------------------------|-------|---------------|
|          |                        |            |            |                |                  |             |             |               |

www.efsa.europa.eu/efsajournal 78  EFSA Journal 2018;16(11):5464
### Peer review of the pesticide risk assessment of the active substance (EZ)-1,3-dichloropropene

| Cyprinodon variegatus | Pimephales promelas | Crassostrea virginica | Daphnia magna | Chironomus riparius | P. subcapitata | Lemna gibba |
|-----------------------|---------------------|-----------------------|---------------|---------------------|---------------|------------|
| LC₅₀ (µg/L)           | NOEC (µg/L)         | EC₅₀ (µg/L)           | NOEC (µg/L)   | NOEC (µg/L)         | EC₅₀ (µg/L)   | EC₅₀ (µg/L) |
| 870                   | 6.9                 | 640                   | 70.1          | 369                 | 5450          | *          |

**Bystander study**

|                  | LC₅₀ (µg/L) | NOEC (µg/L) | EC₅₀ (µg/L) | NOEC (µg/L) | NOEC (µg/L) | EC₅₀ (µg/L) | EC₅₀ (µg/L) |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 0.478            | 1820        | 14          | 1339        | 147         | 772         | 11402       | -           |
| Trigger          | 100         | 10          | 100         | 10          | 10          | 10          | 10          |

* The available study is not considered valid for the risk assessment (please, refer to Vol 3 CA B.9.2.7/01 for FOCUSsw - TERs for (EZ)-(EZ)-3-chloroallyl alcohol– fruiting vegetables at 226000 g a.s./ha x 1 every two years considering 1 m buffer zone

| Scenario | PEC global max (µg L) | Fish acute | Fish chronic | Aquatic invertebrates | Aquatic invertebrates prolonged | Sed. dweller prolonged | Algae | Higher plants |
|----------|-----------------------|------------|--------------|-----------------------|-------------------------------|------------------------|-------|---------------|
| Oncorhynchus mykiss | -         | Daphnia magna       | -            | -                     | -                             | -                     | P. subcapitata | -            |
| LC₅₀ (µg/L) | NOEC (µg/L) | EC₅₀ (µg/L) | NOEC (µg/L) | NOEC (µg/L) | EC₅₀ (µg/L) | EC₅₀ (µg/L) |
| 986       | 0.69*          | 2300       | 7.01*        | 36.9*                 | 545*                          | -**                    |
| Trigger  | 2.05           | 481        | 0.37         | 1122                  | 3.42                          | 18                    | 266              | -            |
|          | 100            | 10         | 100          | 10                    | 10                            | 10                    | 10                | 10            |

*The risk assessment is performed considering the metabolite as 10 times more toxic than the parent
** No data available

FOCUSsw - TERs for (EZ)-3-chloroacrylic acid – fruiting vegetables at 226000 g a.s./ha x 1 every two years considering 1 m buffer zone

| Scenario | PEC global max (µg L) | Fish acute | Fish chronic | Aquatic invertebrates | Aquatic invertebrates prolonged | Sed. dweller prolonged | Algae | Higher plants |
|----------|-----------------------|------------|--------------|-----------------------|-------------------------------|------------------------|-------|---------------|
| Oncorhynchus mykiss | Pimephales promelas | Daphnia magna | Daphnia magna | Chironomus riparius | P. subcapitata | -            |
| LC₅₀ (µg/L) | NOEC (µg/L) | EC₅₀ (µg/L) | NOEC (µg/L) | NOEC (µg/L) | EC₅₀ (µg/L) | EC₅₀ (µg/L) |
| 69500      | 2220          | 55000      | 2530         | 36.9*                 | 543*                          | -**                    |
| Trigger  | 2.36           | 29449      | 941          | 23305                 | 1072                          | 16                    | 231              | -            |
|          | 100            | 10         | 100          | 10                    | 10                            | 10                    | 10                | 10            |

*The risk assessment is performed considering the metabolite as 10 times more toxic than the parent
** No data available

Effects on bees (Regulation (EU) N° 283/2013, Annex Part A, point 8.3.1 and Regulation (EU) N° 284/2013 Annex Part A, point 10.3.1)*

* This section does reflect the new EFSA Guidance Document on bees which has not yet been noted by the Standing Committee on Plants, Animals, Food and Feed.

www.efsa.europa.eu/efsajournal
Species | Test substance | Time scale/type of endpoint | End point | toxicity
--- | --- | --- | --- | ---
Honeybee | a.s.: 1,3-D | Acute/Chronic | Oral/Contact toxicity (LD₅₀) | No data available. The product is applied subsoil, preemergence.

Honeybee | a.s.: 1,3-D | Acute | Inhalation toxicity (LD₅₀) | NOEC inhalation = 115 mg/m³ (0.5-6h)

Potential for accumulative toxicity: -
Semi-field test (Cage and tunnel test): -
Field tests: -

**Field application (GF-3035)**

**Risk assessment** for – fruiting vegetables at 177000 g a.s./ha x 1 every two years.

| Species | Test substance | Risk quotient | HQ | Trigger |
| --- | --- | --- | --- | --- |
| Honey bee | 1,3-Dichloropropene (inhalation) | - | NOEC inhalation/maxim um PECair = 115/5.793 = 19 | 50 |

**Greenhouse application (GF-3036)**
Glasshouse applications are covered by field applications.

**Effects on other arthropod species (Regulation (EU) N° 283/2013, Annex Part A, point 8.3.2 and Regulation (EU) N° 284/2013 Annex Part A, point 10.3.2)**

**Laboratory tests with standard sensitive species**

| Species | Test Substance | End point | Toxicity |
| --- | --- | --- | --- |
| Typhlodromus pyri | | Mortality, LR₅₀ Reproduction, ER₅₀ | No data submitted |
| Aphidius rhopalosiphi | | Mortality, LR₅₀ Reproduction, ER₅₀ | No data submitted |
| Additional species | | | |
| No data submitted | | | |
| No data submitted | | | |
### Extended laboratory tests, aged residue tests

| Species                  | Life stage | Test substance, substrate | Time scale | Dose (g/ha) | End point                        | % effect | ER$_{50}$ |
|--------------------------|------------|---------------------------|------------|-------------|----------------------------------|----------|----------|
| *Folsomia candida*       | Juvenil    | Telone II, LUFA 2.2 soil  | 1DAA       | 329000 g a.s/ha (aged) | Mortality, reproduction           | 1 DAA: M = 78% R= N/A 22 DAA: M = 3.0 R= No effect | -        |
| *Hypoaspis aculeifer*    | Protonymphal | Telone II, LUFA 2.2 soil | 1DAA       | 329000 g a.s/ha (aged) | Mortality, reproduction           | 1 DAA: M = 18 % R= No effect 22 DAA: M = 4 % R= No effect | -        |

1. indicate whether initial or aged residues
2. for preparations indicate whether dose is expressed in units of a.s. or preparation
3. indicate if positive percentages relate to adverse effects or not
4. No ER50 could be calculated. Only one dose was tested.

### Semi-field tests

-  

### Field studies
A study has been conducted to evaluate the effects of Telone II, applied at 199 L/ha, on earthworms and soil arthropods in Southern Europe (Small, 2006). It was agreed in PRAPeR TC 16 (September 2009) that the new field study should only be used to refine the risk assessment for the intended use (tomatoes and soil injection) and only in case the statistical power of the field study could be confirmed. The reevaluation (Miles, 2010) showed statistical power above 80% for earthworm and collembola abundance. However, the statistical power was below 80% for spiders and beetles in some sampling days. Results indicate that total number of arthropods did not differ statistically at any time between the untreated and Telone II treated plots throughout the study. Spiders showed higher levels in the treated plots than in the control (untreated) at the end of the study (related with the lower number of beetles). A statistically significant reduction in number of Coleoptera (beetles) compared to the untreated population were observed on four consecutive occasions at 42, 96, 161 and 227 days after treatment with Telone II. At the final assessment (367 DAA) beetle numbers remained lower in the Telone II treated plots compared to the untreated population, but at this point the difference was not statistically significant. No total recovery could be demonstrated for Coleoptera after one-year treatment. Regarding collembolan populations, no statistically significant differences were found along the year. However, it should be noted that no Collembola were obtained from soil cores taken until 5 weeks post-treatment. This incidence was associated to the deep of the soil core. After that, the deep of the soil core was increased to increase the chances of obtaining Collembola. However, even after the increase in the deep of the soil core, the number of Collembola per plot was still low.

A new field study was designed to assess the potential adverse effects of Telone II injection at 200 L/ha (236 Kg/ha) on soil dwelling arthropod communities in a commercial arable field in the South-West of France (Aldershof, 2015). The statistical analysis at community level indicates recovery of the arthropods community after two years. The population response indicates that Acari (mite) and Araneae (spiders) recover 4 months and one year after treatment, respectively. For the mite community his was confirmed statistically in a univariate analysis of pooled mite specimens or mite taxa, but not in multivariate analyses of the mite dataset. The Collembola populations show a clear decline after treatment, but recovery approximately 4 month thereafter. However, it has to be noted that collembolans were only sampled with suction sampling and not included in the soil samples and therefore the study is not suitable in order to assess the risk for Collembola as the collecting method used is not the most appropriate for this taxonomic group. However, for Coleoptera population effects last longer than one year and at the end of the study period, still a 47% reduction was observed in Drussilla canaliculata (not statistically significant). Hymenoptera populations recover approximately 4 month after treatment except for Formicidae, for which a reduction of population was observed from week 64 to 101. In case of Diplopoda and Isopoda population effects last longer than one year but recovery is observed within the study period (2 years). RMS cannot conclude recovery of Coleoptera population based on the effects observed on Drussilla canaliculata, Poecilus cupreaus and Pterostichus madidus. Moreover, no clear information is provided regarding the power analysis of the study. This information was required to the applicant on May (2016). An annex report to the study was submitted in June 2016 to provide additional information on the Minimum Detectable Difference (MDD), also referred to as Minimum Significant Difference (MSD), to further validate the discriminatory power of the population level analyses presented in the original report. The majority of taxa evaluated were classified as Category 1 taxa, indicating that the test system had sufficient discriminatory power to adequately detect moderate adverse treatment related effects if present. However, it is noted that MDD calculations were performed only until 52 weeks after application instead of until the end of the study (week 101 after treatment).

In addition, the risk assessment to off-field NTA due to redeposition of 1,3-D at the edge of the field cannot be finalised for the representative uses. Please, note that there is no specific scheme to estimate the off-field foliar deposition.

Additional specific test
Effects on non-target soil meso- and macro fauna; effects on soil nitrogen transformation (Regulation (EU) N° 283/2013, Annex Part A, points 8.4, 8.5, and Regulation (EU) N° 284/2013 Annex Part A, points 10.4, 10.5)

| Test organism       | Test substance                | Application method of test a.s./OM | Time scale | End point         | Toxicity       |
|---------------------|-------------------------------|-----------------------------------|------------|-------------------|----------------|
| Other soil macroorganisms |                               |                                    |            |                   |                |
| Folsomia candida    | Technical 1,3-D (XRM-5048)    | Mixed to soil / 5%                 | Chronic   | Mortality NOEC    | 11.6 mg 1,3-D/kg |
|                     |                               |                                    |            | Reproduction EC10 | 5.1 mg 1,3-D/kg soil |
|                     |                               |                                    |            | EC10corr          | 2.55 mg 1,3-D/kg soil |
| Folsomia candida    | Technical 1,3-D (GF-3035)     | Mixed to soil / 5%                 | Chronic   | Mortality NOEC    | 19.7 mg 1,3-D/kg soil |
|                     |                               |                                    |            | Reproduction EC10 | 4.9 mg 1,3-D/kg soil |
|                     |                               |                                    |            | EC10corr          | 2.45 mg 1,3-D/kg soil |

To indicate whether the test substance was oversprayed/to indicate the organic content of the test soil (e.g. 5 % or 10 %).

Higher tier testing (e.g. modelling or field studies)

A field study was conducted by Luhrs (2002) to determine the effects of 1,3-D at 300 L/ha (356 kg/ha) on earthworm populations. A control plot (undisturbed), an agricultural control, and a toxic standard control was included. The study was considered acceptable by the RMS, but it has been argued that by using the electric octet-method to collect earthworms, some individuals might not be detected, as earthworms tend to avoid areas treated with electric impulses. Therefore, effects from the active substance might be masked. The study showed that total earthworm abundance and biomass was substantially decreased 3.5 weeks after a single application with 1,3-D at 356 kg/ha (only statistically significant for abundance). After 4.5 months, both earthworm abundance and biomass were still significantly lower. At that time, both parameters in the 1,3-D treatment were even lower than in the toxic reference. 1 year after treatment earthworm populations following application with 1,3-D at 356 kg/ha show full recovery in abundance and biomass compared to an untreated control. However, a statistical analysis at the species level (also for the control) should be presented in order to comply with the relevant guideline (Kula et al, 2006). No statistically significant difference in the number of juveniles was detected all along the study period. No data on the concentrations of the test item in the soil after application are available. A multivariate evaluation of the community including a principle response curve (PRC) should be presented. Details about the statistical power analysis of the test protocol should be provided (this information was requested to the applicant on May 2016).

A study has been conducted to evaluate the effects of Telone II, applied at 199 L/ha, on earthworms (and soil arthropods) in Southern Europe (Small, 2006). The effects on earthworms were transient, lasting less than 6 months, with no difference in earthworm abundance between treated and untreated plots detected at 6, 9 or 12 months post-treatment. It was agreed in PRAPeR TC 16 (September 2009) that the new field study should only be used to refine the risk assessment for the intended use (tomatoes and soil injection) and only in case the statistical power of the field study could be confirmed. The re-analysis of this study (Miles, 2010) revealed statistically significant reductions in the number of earthworms sampled per plot between untreated and Telone II treated plots approximately 96 and 161 days after treatment and still relevant (though not statistically
significant) at 227 DAT (reduction of 52.4% compared to the control). At 227 and 367 days after treatment earthworm numbers had declined in both untreated and Telone II treated plots. Differences between treatments were not statistically significant, suggesting that earthworm populations had recovered. The trend of earthworm weight (biomass) followed that of the abundance; however, no statistically significant differences could be detected at any sampling point. High level of power (> 0.8) at all sample timings were observed for earthworm abundance. For earthworm weights, power was low (< 0.39) for all samples indicating high variability of this metric in the study.

July 2018: Report of the Pesticides Peer Review Meeting 181 on 1,3-dichloropropene.

During the Peer Review Experts’ meeting 181, it was agreed that the field study B.9.7.1/02 (Luhrs, 2002) cannot be used for the RA. Field study B.9.7.1/03-04 (Small, 2006 & Miles, 2010) is not considered suitable to address risks to earthworms either.

A field study has been conducted to evaluate the effects of Telone II applied at 200 L/ha (229.4 kg 1,3-D/ha), injected in the soil at 20 cm depth, on a commercial farm with low agricultural input in the south-west of France (Bakker, 2015). RMS considered the study acceptable for the risk assessment. The validity criteria are met (an initial pre-application average of 521 individuals/m² and controls with mean abundances above 60 ind./m² all over the sampling period). It has been argued that the study started very late in the year (June) and therefore the active spring peak couldn’t have been observed in this study. Earthworms as well as other soil organisms tend to show active peaks in spring and fall and sampling dates in this study do not cover those peaks. No data on the concentrations of the test item in the soil after application are available. Effects on abundance of earthworms at the end of the study were -35.6 % for L. friendi, -30.8 % for endogeic adults and -33.8 % for all adults. Additionally, for effects on biomass strong increases of up to -44 % can be seen for these same groups. It has been highlighted that these positive effects of such a magnitude should be considered as relevant, because though negative effects are not detected at day 365 anymore, the increases in the abundance and biomass of some groups at day 365 could have been induced by the effects of the earthworm community for over 9 months. Another later sampling when sufficient abundances are present was required to conclude on recovery, because severe effects of > 60% on the species Satchelius mammalis still occurred 270 days after application. 365-367 days after application no analysis for this species could be performed due to low statistical power caused by a decrease in activity/abundance. The data on a later sampling date at 618-623 days after treatment show a small but persistent effect of 31.8% decrease in the abundance of this species related to the control even at 620 DAT, but the abundance of the species S. mammalis was relatively low all along the sampling period. It was considered necessary that details about the statistical power analysis of the test protocol should be provided. According to PPR 133, for higher tier effect studies (field, semi-field), it was agreed that applicants will be requested to perform a power analysis of the test protocol. Justification must be provided regarding the assumed variance used in the power analysis. On June 2016 an additonal report (Aldershof, 2016) was submitted to validate the discriminatory power of the population level analyses presented in the original report. The authors’ conclusions were that the power of tests performed in this study was insufficient to identify small effects (around 30%) as being statistically significant at a type I error rate of 0.05 or 0.1. It is uncertain whether this effect size would have biological significance, given the large scale of this type of field study (12 ha) and as a consequence the high probability that differences in population abundances of this magnitude will arise from local differences in environmental conditions or other biotic or abiotic factors within the experimental area. The authors also state that conclusions presented in the original report (Small, 2006) are considered valid. It is emphasized that effect classifications in the original report were based on a statistical significance level of 5%, but trend evaluations also included incidences at a significance level of 10%. This approach ensured a minimum occurrence of type II errors, i.e. neglecting true treatment effects that would not be detected statistically due to low power of the test. The RMS noted that the test has a power of 53% to identify effects of 50% or higher at a type I error rate of 0.05 and a power of 50% to identify effects of 30% or higher at a type II error rate of 0.1. However, the report does not show the analysis of statistical power for the sampling date at 618-623 DAT for the species/groups that could have been affected previously and therefore, conclusions on the effects at that time are still uncertain. It has been also argued that, though for the toxic reference 8 kg carbendazim/ha effects at the last sampling were not detectable in this study, from other field experiments for product authorisations there is evidence that earthworms dosed with this amount of carbendazim will not recover completely after one year. Considering that the effects in the 1,3-D treatment are consistently higher than in the toxic reference, no recovery after one year for this treatment shouldn’t be expected either. Severe effects of > 60 % still occurred 270 days after application on several groups. It has been
rightly indicated that such long-term effects quite necessarily affect shifts in the earthworm population assemblage. As the protection goal set by regulation (EC) 1107/2009 is biodiversity, shifts and changes in the structure of communities have to be considered as relevant. The results of the statistical community analyses show a statistically significant effect of the test item at alpha = 0.1 on the community of earthworms at both 268-270 and 365-367 DAT. A significant effect of 67% on biomass of tanylobous earthworms at the end of the study (365-367 DAT) and of 61% at 268-270 DAT clearly indicate a direct and strong response to the 1,3-D treatment still 1 year after the application of the product. For tanylobous earthworms effects > 67% after one year have been detected. **Recovery within 1 year after treatment can not be concluded at 200 L/ha (229.4 kg 1,3-D/ha).**

Furthermore, the natural abundance of earthworms in areas likely to require soil treatment for nematodes a survey was also conducted (Small 2006b) in different regions of Sicily (Italy). The surveyed scenarios, with sandy soils that might require 1,3-D treatment and thought to be representative of open fields in South Europe, indicate that **earthworms will be present at very low densities**

| Nitrogen transformation | 1,3-D Technical | >25 % effect at day 90 at 770 mg a.s/kg soil (577 kg 1,3-D/ha) |
|------------------------|----------------|---------------------------------------------------------------|
| Carbon mineralisation  | 1,3-D Technical | >25 % effect at day 90 at 770 mg a.s/kg soil (577 kg 1,3-D/ha) |

**Field studies**

A field treated with 363 kg/ha of Telone recovered the soil respiration rate (25% respect control) after 102 days from application; however, nitrogen turnover recovered at above level after 184 days.

A new study conducted in Southern Europe shows that a field treated with 190 L/ha (= 224 kg/ha injected to the soil) recovery was showed within 4.5 months of treatment. Soil function was not significantly different to that of untreated soils (less than 25% deviation) after 4.5 months post-treatment.

**Toxicity/exposure ratios for soil organisms**

**Field application (GF-3035)**

Fruiting vegetables at 177000 g a.s./ha x 1 application every two years (direct injection)

| Test organism          | Test substance            | Time scale | Soil PEC¹ | TER   | Trigger |
|------------------------|---------------------------|------------|------------|-------|---------|
| Earthworms             |                           |            |            |       |         |
| *Eisenia foetida*      | 1,3-Dichloropropene      | Chronic    | 236 (5 cm) | 1.56  | 5       |
|                        |                           |            | 59 (20 cm) | 6.22  |         |
|                        |                           |            | 39.33 (30 cm) | 9.34 |         |

| Other soil macroorganisms | 1,3-Dichloropropene | Chronic | 236 (5 cm) | 0.010 | 5       |
|                          |                      |         | 59 (20 cm) | 0.042 |         |
|                          |                      |         | 39.33 (30 cm) | 0.062 |         |

¹ Maximum initial PEC.
Application in protected stuctures (GF-3036)*

Fruiting vegetables at 226000 g a.s./ha x 1 application every two years (drip irrigation)

| Test organism       | Test substance     | Time scale | Soil PEC<sup>1</sup> | TER    | Trigger |
|---------------------|--------------------|------------|-----------------------|--------|---------|
| Earthworms          |                    |            |                       |        |         |
| *Eisenia fetida*    | 1,3-Dichloropropene| Chronic    | 301 (5 cm)            | 1.22   | 5       |
|                     |                    |            | 75.3 (20 cm)          | 4.88   |         |
|                     |                    |            | 50.2 (30 cm)          | 7.32   |         |
| Other soil macroorganisms |            |            |                       |        |         |
| *Folsomia candida*  | 1,3-Dichloropropene| Chronic    | 301 (5 cm)            | 0.008  | 5       |
|                     |                    |            | 75.3 (20 cm)          | 0.033  |         |
|                     |                    |            | 50.2 (30 cm)          | 0.049  |         |

*Maximum initial PECs
*Since information on the type of protected structures was not available, the same conclusion as outdoor use is drawn.

Effects on terrestrial non target higher plants (Regulation (EU) N° 283/2013, Annex Part A, point 8.6 and Regulation (EU) N° 284/2013 Annex Part A, point 10.6)

Screening data

No data submitted.

Field application (GF-3035)

Laboratory dose response tests

| Species            | Test substance     | ER<sub>50</sub> (g/ha)<sup>2</sup> | ER<sub>50</sub> (g/ha)<sup>2</sup> | Exposure<sup>3</sup> | TER    | Trigger |
|--------------------|--------------------|----------------------------------|----------------------------------|----------------------|--------|---------|
| Soybean            | 1,3-Dichloropropene| -                                | 10500 g a.s/ha (7.4 mg a.s/kg soil) | 1.6 (1m) 0.010 (3m) <0.001 (5m) | 4.6 740 >7400 | 5       |
| Onion              | 1,3-Dichloropropene| 5400 g a.s/ha (3.8 mg a.s/kg soil) | -                                | -#                  | -#     | 5       |
| Onion              | (EZ)-3-chloroallyl alcohol | >2300 g a.s/ha (1.6 mg a.s/kg soil) | >2300 g a.s/ha (1.6 mg a.s/kg soil) | 1.6 (1m) 0.010 (3m) <0.001 (5m) | >1 >160 | 5       |
| Onion              | (EZ)-3-chloroacrylic acid | >800 g a.s/ha (0.53 mg a.s/kg soil) | >800 g a.s/ha (0.53 mg a.s/kg soil) | 1.6 (1m) 0.010 (3m) <0.001 (5m) | >0.33 >53 | 5       |

Extended laboratory studies : -

Semi-field and field test: -

<sup>1</sup>Average total 1,3-D concentrations (mg/kg-soil) in the top 30-cm soil at 0.1, 1, 5, 14, and 28 days after injection
Risk assessment for non-target plants following application of 1,3-D to off field volatile deposition*

| Test material | Study type          | Critical endpoint (mg a.s./kg soil) | Exposure (mg a.s./kg soil) | TER   |
|---------------|---------------------|-------------------------------------|---------------------------|-------|
| 1,3-D         | Seedling emergence  | 7.4                                 | 0.000395                  | 18734 |

*The risk assessment following deposition after volatilization is reported for illustrative purpose. However, uncertainty exists on this methodology due to the lack of guidance.

**Greenhouse application (GF-3036)**

Since the product will be applied indoors in glasshouses there will be no exposure to terrestrial non-target higher plants.

*The risk assessment

**Effects on biological methods for sewage treatment (Regulation (EU) N° 283/2013, Annex Part A, point 8.8)**

| Test type/organism | end point                                      |
|--------------------|------------------------------------------------|
| Activated sludge   | 3h EC₅₀ total respiration = 325 μL1,3-D/L       |
| *Pseudomonas sp*    | -                                              |

**Monitoring data (Regulation (EU) N° 283/2013, Annex Part A, point 8.9 and Regulation (EU) N° 284/2013, Annex Part A, point 10.8)**

Please, refer to Environmental fate and behavior section.

**Definition of the residue for monitoring (Regulation (EU) N° 283/2013, Annex Part A, point 7.4.2) Ecotoxicologically relevant compounds**

**Soil:** (E-)- and (Z-)-1,3-dichloropropene, 3-chloroacrylic acid (open), (EZ)-3-chloroallyl alcohol (open)

**Groundwater:** (E-)- and (Z-)-1,3-dichloropropene, 3-chloroacrylic acid, (EZ)-3-chloroallyl alcohol (open)

Impurities: (1,2 dichloropropane, 2-M16, 3-M15, 4-M8, 5a-M5, 5b-M7, 5c-M11, 6-M21, 7-M25, 8a-M6, 8b-M10, 8c-M12, 9a-M23, 9B-M26, 10-M1, 11-M4, 12-M13, M-17, 13-M19 and 1,1,2 trichloroethane (open for all)

**Surface water:** (E-)- and (Z-)-1,3-dichloropropene, 3-chloroacrylic acid (open), (EZ)-3-chloroallyl alcohol (open)

**Sediment:** 1,3-dichloropropene

**Air:** 1,3-dichloropropene
Classification and labelling with regard to ecotoxicological data (Regulation (EU) No 283/2013, Annex Part A, Section 10)

| Substance                     | Harmonised classification according to Regulation (EC) No 1272/2008 and its Adaptations to Technical Process [Table 3.1 of Annex VI of Regulation (EC) No 1272/2008 as amended]¹²: | Peer review proposal¹³ for harmonised classification according to Regulation (EC) No 1272/2008: |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1,3-dichloropropene          | Aquatic Acute 1 - H400                                                                                                                                                                                                                                           | Aquatic Acute 1 - H400                                                                                                                                                                                                                                            |
|                               | Aquatic Chronic 1 - H410                                                                                                                                                                                                                                          | Aquatic Chronic 1 - H410 (M 10)                                                                                                                                                                                                                                   |

¹² Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. OJ L 353, 31.12.2008, 1-1355.

¹³ It should be noted that harmonised classification and labelling is formally proposed and decided in accordance with Regulation (EC) No 1272/2008.