

*European Commission*

**Renewal Assessment Report of the Inclusion of the  
Active Substance in Annex I of the  
Regulation (EC) 1107/2009**



**Oxamyl**

**Volume 3 (CA)  
ANNEX B.4 Further Information**

Rapporteur Member State: Italy  
Co-Rapporteur Member State: France

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### VERSION HISTORY

<b>Date</b>	<b>Data points containing amendments or additions</b>	<b>Document identifier or version number</b>

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## **B.4 FURTHER INFORMATION**

Unless specifically indicated, all reports in this section are submitted to address mandatory data requirements for the approval of active substance.

### **B.4.1 Use of the active substance**

Oxamyl manufactured by DuPont is used for the formulation of plant protection products. Oxamyl is used to control a wide range of important plant parasitic nematodes in a range of crops including, but not exclusively, fruiting vegetables, root vegetables, and tobacco.

Pure oxamyl is never isolated nor transported. Active substance is stabilized as TK (technical concentrate) containing 42% or 10% active.

Oxamyl 10GR, containing oxamyl, on potato is intended to be applied once at planting (BBCH 00). On tobacco, Oxamyl 10GR is intended to be applied once at transplanting (BBCH 00) or one application at pre-planting stage (BBCH 00) of the product evenly soil incorporated to a depth of 5–10 cm.

Oxamyl 10SL is applied on tomato *via* drip irrigation and recommended to be used immediately after transplant; followed by up to three applications each starting with BBCH 11, (10 to 14 days after transplant application), and up to 42 days after transplanting at planting. Considering the solarisation use, Oxamyl 10SL is applied *via* drip irrigation with transparent plastic foil covering soil or before transplant on bare soil (approximately between June and September) with the application to bare soil covered with plastic foil to control soil nematodes before transplant.

### **B.4.2 Function**

Oxamyl acts as a non-fumigant nematicide for the control of a range of plant parasitic nematodes.

Oxamyl is systemic in plants. Uptake by plants also occurs when the substance (product) is applied to the soil system. In this case, oxamyl is absorbed by the root of plants and translocated to leaves. Direct activity on nematode control occurs in this case as well as control of pests on above-ground plant material.

### **B.4.3 Effects on harmful organisms**

Oxamyl belongs to the chemical class of carbamate pesticides. It extends its control on harmful organisms by a neurotoxic mechanism. Toxic effects are fairly rapid, leading to paralysis in nematodes.

Oxamyl is neurotoxic and affects the normal functioning of the central nervous system (CNS) of the pest species. Nervous system functioning is disrupted by the action of oxamyl on the acetylcholinesterase system at the synapse of the nerve axons. Inhibition of the enzyme acetylcholinesterase by oxamyl results in the blockage of nerve signals resulting in paralysis and death. Entry of oxamyl to the target site is through the cuticle (contact) or by ingestion.

The symptoms of plant damage, namely reduced nutrient uptake leading to poor growth and poor physiological conditions, are prevented.

### **B.4.4 Field of use envisaged**

Oxamyl-containing products are used in agriculture *via* broadcast or in-furrow application and soil incorporation prior to or at (trans) planting or sowing, and *via* drip irrigation in fruiting vegetables and various field crops.

Detailed information on these uses is provided in the Oxamyl EU Renewal Dossier, Document D, Part 1, DuPont-40925 EU (GAP table).

### **B.4.5 Harmful organisms controlled and crops or products protected or treated**

Oxamyl is used to control a wide range of important plant parasitic nematodes in a range of crops. Nematode pests that are controlled include *Meloidogyne* sp. (rootknot nematodes), *Globodera* and *Heterodera* sp. (cyst

nematodes), *Trichodorus* and *Paratrichodorus* sp. (stubby root nematodes), *Radopholus similis* (burrowing nematode), *Belonalaimus longicaudatus* (sting nematode), *Hoplolaimus galeatus* (lance nematode), *Ditylenchus* sp. (stem and bulb nematodes), and *Pratylenchus penetrans* (root lesion nematode).

#### **B.4.6 Mode of action**

Oxamyl inhibits the acetylcholinesterase enzyme in insect synapses. Thus, the conductance of the nerve impulse, which requires acetylcholinesterase functioning from pre- to post-synapse, is disrupted.

Plant parasitic nematodes are generally found free in the soil at some stage in their development. Once the host crop is planted, root exudates attract the nematodes to the root system where they begin feeding. Feeding can reduce root growth, affect availability of water and nutrients, produce galling, and allow infection by plant pathogens and viruses, all of which can significantly reduce yield. Oxamyl controls nematodes by inhibiting the enzyme acetylcholinesterase *via* contact and ingestion routes, thus acting directly on the nervous system of the target pest. Oxamyl binds preferentially to the acetylcholinesterase enzyme, causing continual electrical discharging of the nervous system. This persistent firing eventually leads to fatigued, non-functioning nerves, uncoordinated control of life systems, and death.

The enzyme inhibition results in paralysis of the nematode (nematostatic activity) when applied at the recommended dose rate for the crop, preventing feeding and disrupting the nematode life cycle. Oxamyl also inhibits egg or cyst hatch in many nematode species. The type of nematocidal activity observed depends on the concentration of oxamyl in the soil.

#### **B.4.7 Information on the occurrence or possible occurrence of the development of resistance, and appropriate management strategies**

Oxamyl is classified as an IRAC Group 1A Nematicide and Insecticide (acetylcholine esterase inhibitor). For more information please visit the Insecticide Resistance Action Committee (IRAC) on the web at <http://www.irac-online.org>. Based on historical use data, it is expected that the risk of development of resistance in plant parasitic nematodes is low.

#### **B.4.8 Methods and precautions concerning handling, storage, transport or fire**

Please refer to the safety data sheet for oxamyl provided in Appendix 1.

Pure oxamyl is never isolated or transported. Details provided below are related to technical concentrate (42%) used for the formulation of DuPont Oxamyl 10GR. Oxamyl 10SL finished products is formulated starting from a technical concentrate containing 10% of oxamyl.

##### **Hazards identification:**

On the basis of available information, oxamyl is not expected to produce any significant adverse health or environmental effects when the recommended use instructions are followed. Information provided below are related to TK42%.

##### **Fire Fighting Measures:**

Flash Point:	57.4°C (135.3°F) closed cup
Hazardous Products of Combustion:	Hazardous decomposition products formed under fire conditions. Carbon dioxide (CO <sub>2</sub> ) nitrogen oxides (NO <sub>x</sub> )
Extinguishing Media:	Water, Foam, Dry Chemical, CO <sub>2</sub>
Unsuitable Extinguishing Media:	High volume water jet (contamination risk)
Fire Fighting Equipment:	Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus. Wear full protective equipment. Runoff from fire control may be a pollution hazard.

**Transport:**

**ADR**

Hazard Class:	6.1
Packaging Group:	II
UN-No.:	2991
Labelling No.:	6.1
Proper Shipping Name:	CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE (Oxamyl, Cyclohexanone)

**IATA\_C**

Hazard Class:	6.1
Packaging Group:	II
UN-No.:	2991
Labelling No.:	6.1
Proper Shipping Name:	Carbamate pesticide, liquid, toxic, flammable (Oxamyl, Cyclohexanone)

**IMDG**

Hazard Class:	6.1
Packaging Group:	II
UN-No.:	2991
Labelling No.:	6.1
Proper Shipping Name:	CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE (Oxamyl, Cyclohexanone)
Marine Pollutant:	Yes

**Handling and Storage:**

Handling (Personnel)

Do not breathe vapour or mist. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Wash clothing after use. Do not store or consume food, drink, or tobacco in areas where they may become contaminated with this material.

Use only according to our recommendations. Wear personal protective equipment. Provide adequate ventilation.

Do not breathe vapour. When opening containers, avoid breathing vapours that may be emanating. Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use.

Handling (Physical Aspects)

None.

Storage

Keep locked up or in an area accessible only to qualified or authorised persons. Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink, and animal feeding stuffs.

**B.4.9 Procedures for destruction or decontamination**

Soak up with sawdust, sand, oil dry, or other absorbent material. Dispose of in an approved container. If liquid has been spilled in large quantities, clean up promptly by scoop or vacuum.

Neutralise with sodium hydroxide, and allow to stand for 4 hours.

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

#### **B.4.10 Emergency measures in case of an accident**

Clean-up methods—small spillage: Neutralise with sodium hydroxide, and allow to stand for 4 hours. Soak up with inert absorbent material. Sweep up or vacuum up spillage, and collect in suitable container for disposal.

Clean-up methods—large spillage: Prevent further leakage or spillage. Contain spillage, soak up with non-combustible absorbent material, (*e.g.*, sand, earth, diatomaceous earth, vermiculite), and transfer to a container for disposal according to local/national regulations. Neutralise with sodium hydroxide, and allow to stand for 4 hours. Large spills should be collected mechanically (*i.e.*, remove by pumping) for disposal. Collect leaking liquid in sealable (metal/plastic) containers. Collect and contain contaminated absorbent and dike material for disposal.

#### **Waste treatment methods**


Product: In accordance with local and national regulations, the product must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. The product should not be allowed to enter drains, water courses, or the soil.

#### **B.4.11 References relied on**





No new studies submitted.


## **APPENDIX 1**


### **SAFETY DATA SHEET (SDS) OF OXAMYL TECHNICAL**


<p>SAFETY DATA SHEET according to Regulation (EC) No 1907/2006 and 453/2010</p>													
<p><b>OXAMYL TECHNICAL 42%</b></p>													
<p>Version 6.1 (replaces: Version 6.0) Revision Date 18.06.2015</p>	<p>Ref. 130000000039</p>												
<p>This Safety Data Sheet adheres to the standards and regulatory requirements of the European Community and may not meet the regulatory requirements of other countries.</p>													
<p><b>SECTION 1: Identification of the substance/mixture and of the company/undertaking</b></p>													
<p><b>1.1. Product identifier</b></p> <p>Product name : OXAMYL TECHNICAL 42%</p> <p>Synonyms : B10048939 DPX-D1410 Technical 42%</p>													
<p><b>1.2. Relevant identified uses of the substance or mixture and uses advised against</b></p> <p>Use of the Substance/Mixture : Insecticide, Nematicide</p>													
<p><b>1.3. Details of the supplier of the safety data sheet</b></p> <p>Company : DuPont International Operations S.a.r.l. 2, chemin du Pavillon CH-1218 Le Grand-Saconnex / GE Switzerland</p> <p>Telephone : +41 (0) 22 717 51 11</p> <p>Telefax : +41 (0) 22 717 51 09</p> <p>E-mail address : sds-support@che.dupont.com</p>													
<p><b>1.4. Emergency telephone number</b></p> <p>Emergency telephone number : +(44)-870-8200418 : Poison Centres may only possess information required for products in accordance with Regulation (EC) No 1272/2008 and national legislation.</p> <p>Supplier : Du Pont de Nemours (France) S.A.S. 82, rue de Wittelsheim F-68701 Cemay Cedex</p> <p>Telephone : +33 (0) 3 89 38 38 38</p>													
<p><b>SECTION 2: Hazards identification</b></p>													
<p><b>2.1. Classification of the substance or mixture</b></p> <table style="width: 100%;"> <tr> <td style="width: 40%;">Flammable liquids, Category 3</td> <td>H226: Flammable liquid and vapour.</td> </tr> <tr> <td>Acute toxicity, Category 2</td> <td>H300: Fatal if swallowed.</td> </tr> <tr> <td>Acute toxicity, Category 2</td> <td>H330: Fatal if inhaled.</td> </tr> <tr> <td>Acute toxicity, Category 4</td> <td>H312: Harmful in contact with skin.</td> </tr> <tr> <td>Eye irritation, Category 2</td> <td>H319: Causes serious eye irritation.</td> </tr> <tr> <td>Chronic aquatic toxicity,</td> <td>H411: Toxic to aquatic life with long lasting effects.</td> </tr> </table>		Flammable liquids, Category 3	H226: Flammable liquid and vapour.	Acute toxicity, Category 2	H300: Fatal if swallowed.	Acute toxicity, Category 2	H330: Fatal if inhaled.	Acute toxicity, Category 4	H312: Harmful in contact with skin.	Eye irritation, Category 2	H319: Causes serious eye irritation.	Chronic aquatic toxicity,	H411: Toxic to aquatic life with long lasting effects.
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1/14													





SAFETY DATA SHEET according to Regulation (EC) No 1907/2006 and 453/2010			
<b>OXAMYL TECHNICAL 42%</b>			
Version 6.1 (replaces: Version 6.0) Revision Date 18.06.2015		Ref. 130000000039	
Category 2			
<b>2.2. Label elements</b>			
  			
<b>Danger</b>			
H226	Flammable liquid and vapour.		
H300	Fatal if swallowed.		
H330	Fatal if inhaled.		
H312	Harmful in contact with skin.		
H319	Causes serious eye irritation.		
H411	Toxic to aquatic life with long lasting effects.		
Special labelling of certain substances and mixtures	EUH401: To avoid risks to human health and the environment, comply with the instructions for use.,		
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.		
P261	Avoid breathing vapours.		
P270	Do not eat, drink or smoke when using this product.		
P273	Avoid release to the environment.		
P280	Wear eye protection/ face protection.		
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.		
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.		
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.		
P310	Immediately call a POISON CENTER/doctor.		
P320	Specific treatment is urgent (see supplemental instructions on the administration of antidotes on this label).		
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.		
P405	Store locked up.		
P501	Dispose of contents/ container to an approved incineration plant.		
<b>2.3. Other hazards</b>			
This substance is not considered to be persistent, bioaccumulating and toxic (PBT).			
This substance is not considered to be very persistent and very bioaccumulating (vPvB).			
Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use.			
<b>SECTION 3: Composition/information on ingredients</b>			
2/14			


SAFETY DATA SHEET according to Regulation (EC) No 1907/2006 and 453/2010																		
<b>OXAMYL TECHNICAL 42%</b>																		
Version 6.1 (replaces: Version 6.0) Revision Date 18.06.2015		Ref. 130000000039																
<p><b>3.1. Substances</b></p> <p>Not applicable</p> <p><b>3.2. Mixtures</b></p> <table border="1"> <thead> <tr> <th>Registration number</th> <th>Classification according to Regulation (EU) 1272/2008 (CLP)</th> <th>Concentration (% w/w)</th> </tr> </thead> <tbody> <tr> <td colspan="3"><b>Oxamyl (CAS-No.23135-22-0) (M-Factor : 1[Acute])</b></td> </tr> <tr> <td></td> <td>Acute Tox. 2; H300 Acute Tox. 2; H330 Acute Tox. 4; H312 Aquatic Chronic 2; H411</td> <td>42,0 %</td> </tr> <tr> <td colspan="3"><b>Cyclohexanone (CAS-No.108-94-1)</b></td> </tr> <tr> <td></td> <td>Flam. Liq. 3; H226 Acute Tox. 4; H302 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Dam. 1; H318</td> <td>&gt; 25 - &lt; 30 %</td> </tr> </tbody> </table> <p>The above products are compliant to REACH registration obligations; Registration number(s) may not be provided because substance(s) are exempted, not yet registered under REACH or are registered under another regulatory process (biocide uses, plant protection products), etc.</p> <p>For the full text of the H-Statements mentioned in this Section, see Section 16.</p>				Registration number	Classification according to Regulation (EU) 1272/2008 (CLP)	Concentration (% w/w)	<b>Oxamyl (CAS-No.23135-22-0) (M-Factor : 1[Acute])</b>				Acute Tox. 2; H300 Acute Tox. 2; H330 Acute Tox. 4; H312 Aquatic Chronic 2; H411	42,0 %	<b>Cyclohexanone (CAS-No.108-94-1)</b>				Flam. Liq. 3; H226 Acute Tox. 4; H302 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Dam. 1; H318	> 25 - < 30 %
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<b>SECTION 4: First aid measures</b>																		
<b>4.1. Description of first aid measures</b>																		
General advice	<p>: Call a physician or poison control centre immediately. Never give anything by mouth to an unconscious person.</p> <p>: This product contains an anticholinesterase compound. Do not use if under medical advice not to work with such compounds.</p>																	
Inhalation	<p>: Move to fresh air. Call a physician or poison control centre immediately. Artificial respiration and/or oxygen may be necessary. If victim is unconscious but breathing: Give oxygen.</p>																	
Skin contact	<p>: Take off contaminated clothing and shoes immediately. Wash off immediately with soap and plenty of water. Wash contaminated clothing before re-use. Call a poison control center or doctor for treatment advice.</p>																	
Eye contact	<p>: If easy to do, remove contact lens, if worn. Hold eye open and rinse slowly and gently with water for 15-20 minutes. Call a poison control center or doctor for</p>																	
3/14																		

<p>SAFETY DATA SHEET according to Regulation (EC) No 1907/2006 and 453/2010</p>		
<p><b>OXAMYL TECHNICAL 42%</b></p>		
<p>Version 6.1 (replaces: Version 6.0) Revision Date 18.06.2015</p>		<p>Ref. 130000000039</p>
<p>treatment advice.</p>		
<p>Ingestion</p>	<p>: If swallowed, call a poison control centre or doctor immediately. If swallowed, drink 1 or 2 glasses of water and try once or twice to induce vomiting by touching the back of throat with finger. Induce vomiting if person is conscious. Do not give anything by mouth to an unconscious person.</p>	
<p><b>4.2. Most important symptoms and effects, both acute and delayed</b></p>		
<p>Risks</p>	<p>: This product is an acetyl cholinesterase inhibiting carbamate insecticide. Morphine therapy is contra-indicated.</p>	
<p>Symptoms</p>	<p>: Poisoning produces effects associated with anticholinesterase activity which may include:</p> <p>: Weakness, Blurred vision, Breathing difficulties, Nausea, Headache, Abdominal pain, discomfort in the chest, constriction of pupils, slow pulse, sweating, muscle twitching</p>	
<p><b>4.3. Indication of any immediate medical attention and special treatment needed</b></p>		
<p>Treatment</p>	<p>: Administer atropine sulphate as an antidote until complete atropinisation (1.2-2.0 mg i.v. every 10-30 minutes). 2-PAM may be used as an antidote in conjunction with atropine sulphate but must not be used alone. Allow no further exposure to any cholinesterase inhibitor until full recovery is assured.</p> <p>: Contraindication: Oximes (pralidoxime), succinylcholine and other cholinergic agents, respiratory stimulants and physostigmine.</p>	
<p><b>SECTION 5: Firefighting measures</b></p>		
<p><b>5.1. Extinguishing media</b></p>		
<p>Suitable extinguishing media</p>	<p>: Water spray, Dry chemical, Foam, Carbon dioxide (CO<sub>2</sub>)</p>	
<p>Extinguishing media which shall not be used for safety reasons</p>	<p>: High volume water jet, (contamination risk)</p>	
<p><b>5.2. Special hazards arising from the substance or mixture</b></p>		
<p>Specific hazards during firefighting</p>	<p>: Hazardous decomposition products formed under fire conditions. Carbon dioxide (CO<sub>2</sub>) Nitrogen oxides (NO<sub>x</sub>)</p>	
<p><b>5.3. Advice for firefighters</b></p>		
<p>Special protective equipment for firefighters</p>	<p>: Wear full protective clothing and self-contained breathing apparatus.</p>	
<p>Further information</p>	<p>: Evacuate personnel and keep upwind of fire. Prevent fire extinguishing water from contaminating surface water or the ground water system. Do not allow run-off from fire fighting to enter drains or water courses. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire</p>	
<p>4/14</p>		

<p>SAFETY DATA SHEET according to Regulation (EC) No 1907/2006 and 453/2010</p>		
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<p>residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.</p> <p>: (on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers/tanks with water spray.</p>		
<p><b>SECTION 6: Accidental release measures</b></p>		
<p><b>6.1. Personal precautions, protective equipment and emergency procedures</b></p> <p>Personal precautions : Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Control access to area. Ensure adequate ventilation. Ventilate spill area. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Refer to protective measures listed in sections 7 and 8.</p>		
<p><b>6.2. Environmental precautions</b></p> <p>Environmental precautions : Prevent further leakage or spillage if safe to do so. Use appropriate container to avoid environmental contamination. Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained. If the product contaminates rivers and lakes or drains inform respective authorities.</p>		
<p><b>6.3. Methods and materials for containment and cleaning up</b></p> <p>Methods for cleaning up : Clean-up methods - small spillage Neutralise with sodium hydroxide and allow to stand for 4 hours. Soak up with inert absorbent material. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean-up methods - large spillage Prevent further leakage or spillage. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Neutralise with sodium hydroxide and allow to stand for 4 hours. Large spills should be collected mechanically (remove by pumping) for disposal. Collect leaking liquid in sealable (metal/plastic) containers. Collect and contain contaminated absorbent and dike material for disposal.</p> <p>Other information : Never return spills in original containers for re-use. Dispose of in accordance with local regulations.</p>		
<p><b>6.4. Reference to other sections</b></p> <p>For personal protection see section 8., For disposal instructions see section 13.</p>		
<p><b>SECTION 7: Handling and storage</b></p>		
<p><b>7.1. Precautions for safe handling</b></p> <p>Advice on safe handling : Use only according to our recommendations. Wear personal protective equipment. For personal protection see section 8. Provide adequate ventilation.</p>		
<p>5/14</p>		

<p>SAFETY DATA SHEET according to Regulation (EC) No 1907/2006 and 453/2010</p>		
<p><b>OXAMYL TECHNICAL 42%</b></p>		
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<p>Do not breathe vapour. When opening containers, avoid breathing vapours that may be emanating. Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use. Avoid exceeding the given occupational exposure limits (see section 8).</p>		
<p>Advice on protection against fire and explosion</p>	<p>: Keep away from heat and sources of ignition.</p>	
<p><b>7.2. Conditions for safe storage, including any incompatibilities</b></p>		
<p>Requirements for storage areas and containers</p>	<p>: Keep locked up or in an area accessible only to qualified or authorised persons. Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.</p>	
<p>Advice on common storage</p>	<p>: No special restrictions on storage with other products.</p>	
<p>Other data</p>	<p>: Stable under recommended storage conditions.</p>	
<p><b>7.3. Specific end use(s)</b></p>		
<p>Plant protection products subject to Regulation (EC) No 1107/2009.</p>		
<p><b>SECTION 8: Exposure controls/personal protection</b></p>		
<p><b>8.1. Control parameters</b></p>		
<p>If sub-section is empty then no values are applicable.</p>		
<p><b>8.2. Exposure controls</b></p>		
<p>Engineering measures</p>	<p>: Ensure adequate ventilation, especially in confined areas. Use only in area provided with appropriate exhaust ventilation. Since the mixture includes an organic solvent, electrical equipment must be explosion-proof and free from ignition sources such as static electricity and sparks.</p>	
<p>Hand protection</p>	<p>: Material: Nitrile rubber Glove thickness: 0,4 - 0,7 mm Glove length: Gauntlets of 35 cm long or longer. Protection index: Class 6 Wearing time: 8 h The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). Gloves must be rinsed thoroughly after use. Gloves should be discarded and replaced if there is any indication of degradation or chemical</p>	
<p>6/14</p>		

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Version 6.1 (replaces: Version 6.0) Revision Date 18.06.2015		Ref. 130000000039
Skin and body protection	breakthrough. Gauntlets of 35 cm long or longer shall be worn over the combination sleeve. Before removing gloves clean them with soap and water. : Manufacturing and processing work: Full protective clothing Type 6 (EN 13034)  Wear protective clothing such as gloves, apron, boots, or coveralls, as appropriate.	
Protective measures	: The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. All chemical protective clothing should be visually inspected prior to use. Clothing and gloves should be replaced in case of chemical or physical damage or if contaminated.	
Hygiene measures	: Handle in accordance with good industrial hygiene and safety practice. Regular cleaning of equipment, work area and clothing. Keep working clothes separately. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product. When using do not eat, drink or smoke. Keep away from food, drink and animal feedingstuffs. Remove clothing/PPE immediately if material gets inside. For environmental protection remove and wash all contaminated protective equipment before re-use. Dispose of rinse water in accordance with local and national regulations.	
Respiratory protection	: Self-contained breathing apparatus (EN 133) respirator with A2B2-P3 filter	
<b>SECTION 9: Physical and chemical properties</b>		
<b>9.1. Information on basic physical and chemical properties</b>		
Form	: liquid	
Colour	: clear	
Odour	: slight, sulphurous, ketone-like	
Odour Threshold	: not determined	
pH	: 3,4 at 10 g/l ( 25 °C)	
Solidification point	: 6 °C	
Boiling point/boiling range	: no data available	
Flash point	: 57,4 °C , Method: Tag closed cup - TCC	
Flammability (solid, gas)	: The product is not flammable.	
Thermal decomposition	: no data available	
Auto-ignition temperature	: 303 °C , Test Type :Auto-ignition temperature	
Oxidizing properties	: The product is not oxidizing.	
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Explosive properties	: Not explosive	
Lower explosion limit/ lower flammability limit	: Not applicable	
Upper explosion limit/ upper flammability limit	: no data available	
Vapour pressure	: 0,0000005 hPa at 25 °C	
Density	: 1,31 g/cm3	
Water solubility	: 229,4 g/l at 25 °C	
Partition coefficient: n-octanol/water	: Pow: 0,36 log Pow: -0,44	
Viscosity, dynamic	: no data available	
Relative vapour density	: no data available	
Evaporation rate	: no data available	
<b>9.2. Other information</b>		
Phys.-chem./other information	: No other data to be specially mentioned.	
<b>SECTION 10: Stability and reactivity</b>		
<b>10.1. Reactivity</b>	: No hazards to be specially mentioned.	
<b>10.2. Chemical stability</b>	: The product is chemically stable under recommended conditions of storage, use and temperature.	
<b>10.3. Possibility of hazardous reactions</b>	: Vapours may form explosive mixture with air. No decomposition if stored and applied as directed.	
<b>10.4. Conditions to avoid</b>	: Heating can release hazardous gases. To avoid thermal decomposition, do not overheat. Protect from frost.	
<b>10.5. Incompatible materials</b>	: Incompatible with oxidizing agents.	
<b>10.6. Hazardous decomposition products</b>	: No materials to be especially mentioned.	
<b>SECTION 11: Toxicological information</b>		
<b>11.1. Information on toxicological effects</b>		
Acute oral toxicity		
LD50 / Rat Male and female : 9,1 mg/kg		
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Method: US EPA Test Guideline OPP 81-1  
(Data on the product itself) Information source: Internal study report

Acute inhalation toxicity

LC50 / 4 h Rat : 0,11 mg/l  
Method: US EPA Test Guideline OPP 81-3  
(Data on the product itself) Information source: Internal study report

Acute dermal toxicity

LD50 / Rat : > 5 000 mg/kg  
Method: OECD Test Guideline 402  
(Data on the product itself)

Skin irritation

Rabbit  
Result: No skin irritation  
Method: US EPA Test Guideline OPP 81-5  
(Data on the product itself) Information source: Internal study report

Eye irritation

Rabbit  
Result: Risk of serious damage to eyes.  
Method: US EPA Test Guideline OPP 81-4  
(Data on the product itself) Information source: Internal study report

Sensitisation

Guinea pig Buehler Test  
Result: Animal test did not cause sensitization by skin contact.  
Method: US EPA Test Guideline OPP 81-6  
(Data on the product itself) Information source: Internal study report

Repeated dose toxicity

human  
LOAEL: 0,15 mg/l  
cholinesterase inhibition

Rat  
LOAEL: 0,75 mg/l  
cholinesterase inhibition


Mutagenicity assessment

Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity assessment

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<p>Did not show carcinogenic effects in animal experiments. Not classifiable as a human carcinogen.</p> <p>Toxicity to reproduction assessment</p> <p>No toxicity to reproduction</p> <p>Assessment teratogenicity</p> <p>Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.</p> <p>Further information</p> <p>Contains organic solvents. Inhalation of high vapour concentrations can cause CNS-depression and narcosis. Repeated and prolonged exposure to solvents may cause brain and nervous system damage. Evaporation of solvents may cause irritation to eyes and mucous membranes. Solvents may degrease the skin.</p> <p>STOT - single exposure</p> <p>The substance or mixture is not classified as specific target organ toxicant, single exposure. cholinesterase inhibition</p> <p>STOT - repeated exposure</p> <p>The substance or mixture is not classified as specific target organ toxicant, repeated exposure.</p> <p>Aspiration hazard</p> <p>No aspiration toxicity classification</p>		
<p><b>SECTION 12: Ecological information</b></p>		
<p><b>12.1. Toxicity</b></p> <p>Toxicity to fish</p> <ul style="list-style-type: none"> <li>• Oxamyl LC50 / 96 h / <i>Oncorhynchus mykiss</i> (rainbow trout): 3,16 mg/l</li> <li>• Cyclohexanone LC50 / 96 h / <i>Pimephales promelas</i> (fathead minnow): 527 mg/l</li> </ul> <p>Toxicity to aquatic plants</p> <p>ErC50 / 48 h / <i>Pseudokirchneriella subcapitata</i> (green algae): 6,5 mg/l Method: OECD Test Guideline 201 (Data on the product itself) Information source: Internal study report</p> <p>Toxicity to aquatic invertebrates</p> <ul style="list-style-type: none"> <li>• Oxamyl EC50 / 48 h / <i>Daphnia magna</i> (Water flea): 0,319 mg/l</li> </ul>		
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#### Toxicity to soil dwelling organisms

LC50 / 14 d / *Eisenia fetida* (earthworms): 112 mg/kg  
Method: OECD Test Guideline 207  
(Data on the product itself) Information source: Internal study report

#### Toxicity to other organisms

LD50 / *Colinus virginianus* (Bobwhite quail): 9,5 mg/kg  
Method: US EPA Test Guideline OPPTS 850.2100  
(Data on the product itself) Information source: Internal study report

LC50 / 8 d / *Anas platyrhynchos* (Mallard duck): 766 mg/kg  
Method: US EPA Test Guideline OPP 71-2  
(Data on the product itself) Information source: Internal study report

LD50 / 48 h / *Apis mellifera* (bees): 0,38 µg/l  
Method: OEPP/EPPO Test Guideline 170  
Oral (Data on the product itself) Information source: Internal study report

LD50 / 48 h / *Apis mellifera* (bees): 0,47 µg/l  
Method: OEPP/EPPO Test Guideline 170  
Contact (Data on the product itself) Information source: Internal study report

#### Chronic toxicity to fish

- Oxamyl  
Early Life-Stage / NOEC / 61 d / *Oncorhynchus mykiss* (rainbow trout): 0,77 mg/l

#### Chronic toxicity to aquatic Invertebrates

- Oxamyl  
flow-through test / NOEC / 21 d / *Daphnia magna* (Water flea): 0,0268 mg/l

### 12.2. Persistence and degradability

#### Biodegradability

According to the results of tests of biodegradability this product is not readily biodegradable.

### 12.3. Bioaccumulative potential


#### Bioaccumulation


Does not bioaccumulate.


### 12.4. Mobility in soil

#### Mobility in soil

Potentially mobile, but the leaching potential is mitigated by rapid degradation.

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<p><b>12.5. Results of PBT and vPvB assessment</b></p> <p>PBT and vPvB assessment This substance is not considered to be persistent, bioaccumulating and toxic (PBT). / This substance is not considered to be very persistent and very bioaccumulating (vPvB).</p> <p><b>12.6. Other adverse effects</b></p> <p><b>Additional ecological information</b></p> <p>No other ecological effects to be specially mentioned</p>																																		
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<p><b>13.1. Waste treatment methods</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Product</td> <td>: In accordance with local and national regulations. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. The product should not be allowed to enter drains, water courses or the soil.</td> </tr> <tr> <td>Contaminated packaging</td> <td>: Do not re-use empty containers. If recycling is not practicable, dispose of in compliance with local regulations.</td> </tr> <tr> <td>European Waste Catalogue number</td> <td>: 020108: agrochemical waste containing dangerous substances</td> </tr> </table>			Product	: In accordance with local and national regulations. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. The product should not be allowed to enter drains, water courses or the soil.	Contaminated packaging	: Do not re-use empty containers. If recycling is not practicable, dispose of in compliance with local regulations.	European Waste Catalogue number	: 020108: agrochemical waste containing dangerous substances																										
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14.3. Transport hazard class(es):	6.1		
14.4. Packing group:	II		
14.5. Environmental hazards :	Marine pollutant		
14.6. Special precautions for user:	no data available		
<b>14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>			
Not applicable			
<b>SECTION 15: Regulatory information</b>			
<b>15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture</b>			
Other regulations	: The product is classified as dangerous in accordance with Regulation (EC) No. 1272/2008. Take note of Dir 94/33/EC on the protection of young people at work. Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work. Take note of Directive 96/82/EC on the control of major-accident hazards involving dangerous substances. Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values.		
<b>15.2. Chemical Safety Assessment</b>			
A Chemical Safety Assessment is not required for this substance. The substance is registered as a plant protection product under Regulation (EC) No. 1107/2009.			
<b>SECTION 16: Other information</b>			
<b>Full text of H-Statements referred to under section 3.</b>			
H226	Flammable liquid and vapour.		
H300	Fatal if swallowed.		
H302	Harmful if swallowed.		
H312	Harmful in contact with skin.		
H315	Causes skin irritation.		
H318	Causes serious eye damage.		
H330	Fatal if inhaled.		
H332	Harmful if inhaled.		
H411	Toxic to aquatic life with long lasting effects.		
Other information	professional use		
<b>Abbreviations and acronyms</b>			
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road		
ATE	Acute toxicity estimate		
CAS-No.	Chemical Abstracts Service number		
CLP	Classification, Labelling and Packaging		
EbC50	Concentration at which 50% reduction of biomass is observed		
EC50	Median effective concentration		
EN	European Norm		
EPA	Environmental Protection Agency		
ErC50	Concentration at which a 50% inhibition of growth rate is observed		
EyC50	Concentration at which 50 % inhibition of yield is observed		
IATA_C	International Air Transport Association (Cargo)		
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IBC ICAO ISO IMDG LC50 LD50 LOEC LOEL MARPOL n.o.s. NOAEC NOAEL NOEC NOEL OECD OPPTS PBT STEL TWA vPvB	International Bulk Chemical Code International Civil Aviation Organization International Standard Organization International Maritime Dangerous Goods Median Lethal Concentration Median Lethal Dose Lowest Observed Effect Concentration Lowest observed effect level International Convention for the Prevention of Marine Pollution from Ships Not Otherwise Specified No Observed Adverse Effect Concentration No observed adverse effect level No Observed Effect Concentration No Observed Effect Level Organisation for Economic Co-operation and Development Office of Prevention, Pesticides and Toxic Substances Persistent, Bioaccumulative and Toxic Short term exposure limit Time Weighted Average (TWA): very Persistent and very Bioaccumulative	
<b>Restrictions on use</b>  Technical product for formulation purpose only		
<b>Further information</b>  Take notice of the directions of use on the label. Before use read DuPont's safety information., Take notice of the directions of use on the label.  Significant change from previous version is denoted with a double bar.		
<p>The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The above information relates only to the specific material(s) designated herein and may not be valid for such material(s) used in combination with any other materials or in any process or if the material is altered or processed, unless specified in the text.</p>		
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