

Product no. 350
Product name **DIMETHOATE TECHNICAL**July 2011
Supersedes March 2010

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SAFETY DATA SHEET

DIMETHOATE TECHNICAL

Revision: Sections containing a revision or new information are marked with a ♣.

♣ SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

- 1.1. **Product identifier** **Dimethoate Technical**
CAS no. 60-51-5
- 1.2. **Relevant identified uses of the substance or mixture and uses advised against** Can be used as active ingredient in insecticides only. The substance has to be formulated before final use.
- 1.3. **Details of the supplier of the safety data sheet** **CHEMINOVA A/S**
P.O. Box 9
DK-7620 Lemvig
Denmark
sds@cheminova.dk
- 1.4. **Emergency telephone number** ... (+45) 97 83 53 53 (24 h; for emergencies only)

♣ SECTION 2: HAZARDS IDENTIFICATION

- 2.1. **Classification of the substance or mixture** See section 16 for full text of hazard statements and R-phrases.
- CLP classification of the product according to Reg. 1272/2008 as amended Acute oral toxicity: Category 4 (H302)
Acute dermal toxicity: Category 4 (H412)
- DSD classification of the product according to Dir. 67/548/EEC as amended Xn;R21/22
- WHO classification Class II: Moderately hazardous
Guidelines to Classification 2009
- Health hazards Dimethoate is a poison (cholinesterase inhibitor). It rapidly enters the body on contact with all skin surfaces and eyes.
- Repeated exposures to cholinesterase inhibitors such as dimethoate may, without warning, cause increased susceptibility to doses of any cholinesterase inhibitor.
- Environmental hazards The substance is toxic to aquatic organisms.
- 2.2. **Label elements**
According to EU Reg. 1272/2008 as amended
- Product identifier Dimethoate Technical
CAS no. 60-51-5

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Hazard pictogram (GHS07)



Signal word Warning

Hazard statements

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

Supplementary hazard statement

EUH401 To avoid risks to human health and the environment, comply with the instructions of use.

Precautionary statements

P264 Wash hands thoroughly after handling.

P280 Wear protective gloves/protective clothing.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P301+P330 IF SWALLOWED: Rinse mouth.

P363 Wash contaminated clothing before reuse.

P501 Dispose of contents/container in accordance with local regulations.

According to Dir. 67/548/EEC as amended

Hazard symbol Xn



Harmful

R-phrase

R21/22 Harmful in contact with skin and if swallowed.

S-phrase

S36/37 Wear suitable protective clothing and gloves.

Other mention To avoid risks to man and the environment, comply with the instructions of use.

2.3. **Other hazards** The substance does not meet the criteria for being PBT or vPvB.

♣ SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. **Substances** See section 16 for full text of hazard statements and R-phrases.

CAS name Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester

CAS no. 60-51-5

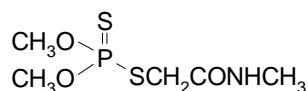
IUPAC name O,O-Dimethyl S-methylcarbamoylmethyl phosphorodithioate

ISO name/EU name Dimethoate

EC no. (EINECS no.) 200-480-3

EU index no. 015-051-00-4

Structural formula



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3.2. **Mixtures** The product is a substance, not a mixture.**♣ SECTION 4: FIRST AID MEASURES**4.1. **Description of first aid measures**

General

In case of exposure do not wait for symptoms to develop. Immediately start the recommended procedures below. Immediately remove the exposed person from the area where the product is present.

Inhalation

If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance.

If breathing has stopped, immediately start artificial respiration and maintain until a physician takes charge of the exposed person.

Skin contact

Immediately remove contaminated clothing and footwear. Flush skin with much water. Wash with water and soap. See physician immediately if any symptom develop.

Eye contact

Immediately rinse eyes with much water or eyewash solution, occasionally opening eyelids, until no evidence of chemical remains. Remove contact lenses after a few minutes and rinse again. Obtain medical advice. See physician immediately if any discomfort develops.

Ingestion

Call a doctor or get medical attention immediately. Make the exposed person rinse mouth and then drink 1 or 2 glasses of water or milk. Induce vomiting only if:

1. A significant amount (more than a mouthful) has been ingested
2. Patient is fully conscious
3. Medical aid is not readily available
4. Time since ingestion is less than one hour.

Let the patient induce vomiting by touching the back of the throat with a finger. If vomiting occurs, let him/her rinse mouth and drink fluids again.

4.2. **Most important symptoms and effects, both acute and delayed**

Symptoms of cholinesterase inhibition: nausea, headache, vomiting, cramps, weakness, blurred vision, pin-point pupils, tightness in chest, laboured breathing, nervousness, sweating, watering of eyes, drooling or frothing of mouth and nose, muscle spasms and coma.

4.3. **Indication of any immediate medical attention and special treatment needed**

Get medical attention immediately if symptoms of cholinesterase inhibition (see above) develop. Explain that the victim has been exposed to **dimethoate**, an organophosphorus insecticide, and describe his/her condition and the extent of exposure.

In an industrial setting the antidote atropine sulphate should be available at the workplace.

It may be helpful to show this safety data sheet to physician.

4.2. Notes to physician

Dimethoate is a cholinesterase inhibitor affecting the central and

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peripheral nervous systems producing respiratory depression.

Cholinesterase inhibition – treatment Decontamination procedures such as whole body washing, gastric lavage and administration of activated charcoal are often required.

Antidote: If symptoms (see 2.3.) are present, administer atropine sulphate, which often is a lifesaving antidote, in large doses, TWO to FOUR mg intravenously or intramuscularly as soon as possible. Repeat at 5 to 10 minute intervals until signs of atropinisation appear and maintain full atropinisation until all organophosphate is metabolised.

Obidoxime chloride (Toxogonin), alternatively pralidoxime chloride (2-PAM), may be administered as an adjunct to, but not a substitute for atropine sulphate. Treatment with oxime should be maintained as long as atropine sulphate is administered.

Especially in the case of dimethoate, treatment with atropine sulphate is essential. Results of treatment with oxime for dimethoate poisoning are notoriously varying and it has not been documented that oxime has any positive effect at all. In no case should oxime be used in stead of atropine sulphate.

At first sign of pulmonary oedema the patient should be given supplementary oxygen and treated symptomatically.

Relapse can occur after initial improvement.
VERY CLOSE Supervision of the patient is indicated for at least 48 hours, DEPENDING ON THE SEVERITY OF POISONING.

SECTION 5: FIREFIGHTING MEASURES

- | | |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.1. Extinguishing media | Dry chemical or carbon dioxide for small fires, water spray or foam for large fires. Avoid heavy hose streams. |
| 5.2. Special hazards arising from the substance or mixture | The essential breakdown products are volatile, malodorous, toxic, irritant and inflammable compounds such as dimethyl sulphide, methyl mercaptan, sulphur dioxide, carbon monoxide, carbon dioxide, nitrogen oxides and phosphorus pentoxide. |
| 5.3. Advice for firefighters | Use water spray to keep fire-exposed containers cool. Approach fire from upwind to avoid hazardous vapours and toxic decomposition products. Fight fire from protected location or maximum possible distance. Dike area to prevent water runoff. Firemen should wear self-contained breathing apparatus and protective clothing. |

♣ SECTION 6: ACCIDENTAL RELEASE MEASURES

- | | |
|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6.1. Personal precautions, protective equipment and emergency procedures | It is recommended to have a predetermined plan for the handling of spills. Empty, sealable vessels for the collection of spills should be available.

In case of large spill (involving 10 tons of the product or more):
1. Use personal protection equipment; see section 8 |
|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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2. Call emergency telephone no.; see section 1
3. Alert authorities.

Observe all safety precautions when cleaning up spills. Use personal protection equipment. Depending on the magnitude of the spill this may mean wearing respirator, face mask or eye protection, chemical resistant clothing, gloves and boots.

Stop the source of the spill immediately if safe to do so. Keep unprotected persons away from the spill area. Avoid and reduce formation of airborne dust as much as possible. Remove sources of ignition.

- 6.2. **Environmental precautions** Contain the spill to prevent any further contamination of surface, soil or water. Wash waters must be prevented from entering surface water drains. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.
- 6.3. **Methods and materials for containment and cleaning up** It is recommended to consider possibilities to prevent damaging effects of spills, such as bunding or capping. See GHS (Annex 4, Section 6).
- Use non-sparking tools and equipment. If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should immediately be swept up or preferably vacuumed up using equipment with high efficiency final filter. Transfer to suitable containers. Rinse area with soda lye and much water. Absorb wash liquid onto absorbent material such as hydrated lime, universal binder, Fuller's earth, bentonite or other absorbent clay and transfer contaminated absorbent to suitable containers. Wash waters must be prevented from entering surface water drains. The used containers should be properly closed and labelled.
- Spills which soak into the ground should be dug up and transferred to suitable containers.
- Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal.
- 6.4. **Reference to other sections** See subsection 8.2. for personal protection.
See section 13 for disposal.

♣ SECTION 7: HANDLING AND STORAGE

- 7.1. **Precautions for safe handling** Like most organic powders, the substance can form explosive mixtures with air. Avoid dust formation and take precautionary measures against static discharge. Use explosion protected equipment. Keep away from sources of ignition and protect from exposure to fire and heat.
- In an industrial environment it is recommended to avoid all personal contact with the product, if possible by using closed systems with remote system control. Otherwise, the material should be handled by mechanical means as much as possible. Adequate ventilation or local exhaust ventilation is required. The exhaust

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gases should be filtered or treated otherwise. For personal protection in this situation, see section 8.

For its use as a pesticide, first look for precautions and personal protection measures on the officially approved label on the packaging or for other official guidance or policy in force. If these are lacking, see section 8.

Warning

MELTING OF DIMETHOATE MAY INDUCE EXPLOSION AND SHOULD NEVER BE USED FOR EMPTYING DRUMS.

Do not heat dimethoate above 35°C. Heat only indirectly and with solvent present.

Local heating with for e.g. electric heating equipment or steam may significantly increase the risk of explosion and should never take place.

Before further processing takes place, it is recommended to solve dimethoate at ambient temperature in the solvent to be used in the formulation. If necessary, solvent preheated to 35°C can be used. Circulation of the solvent may speed up the solving.

Keep all unprotected persons and children away from working area.

Remove contaminated clothing immediately. Wash thoroughly after handling. Before removing gloves, wash them with water and soap. After work, take off all work clothes and footwear. Take a shower, using water and soap. Wear only clean clothes when leaving job. Wash protective clothing and protective equipment with water and soap after each use.

Do not discharge to the environment. See section 13 for disposal.

7.2. Conditions for safe storage, including any incompatibilities

Dimethoate is stable for a long period when stored at temperatures not exceeding 25°C. Storage at temperatures not exceeding 25°C is recommended.

Keep in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. A warning sign reading "POISON" is recommended. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

7.3. Specific end use(s)

The product is an active ingredient for the production of registered pesticides which may only be used for the applications they are registered for.

♣ SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters
Personal exposure limits

		Year
Dimethoate	ACGIH (USA) TLV	2011 Not established; BEI

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OSHA (USA) PEL	2011	Not established
EU, 2000/39/EC as amended	2009	Not established
Germany, MAK	2010	Not established; BAT
HSE (UK) WEL	2007	Not established

However, other personal exposure limits defined by local regulations may exist and must be observed.

Monitoring methods Persons working with this product for a longer period should have frequent blood tests of their cholinesterase levels. If the cholinesterase level falls below a critical point, no further exposure should be allowed until it has been determined by means of blood tests that the cholinesterase level has returned to normal.

The supplier of the safety data sheet can be contacted for monitoring methods.

DNEL/PNEC Chemical Safety Report not yet available.

8.2. **Exposure controls** When used in a closed system, personal protection equipment will not be required. The following is meant for other situations, when the use of a closed system is not possible, or when it is necessary to open the system. Consider the need to render equipment or piping systems non-hazardous before opening.



Respiratory protection

In the event of an accidental discharge of the material which produces a heavy vapour or dust, workers must put on officially approved respiratory protection equipment with a universal filter type including particle filter.



Protective gloves

Wear long chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber. The breakthrough times of these materials for dimethoate are unknown. Generally, however, the use of protective gloves will give only partial protection against dermal exposure. Small tears in the gloves and cross-contamination can easily occur. It is recommended to limit the work to be done manually and to change the gloves regularly. Wash hands with water and soap immediately after work is finished.



Eye protection

Wear safety glasses. It is recommended to have an eye wash fountain immediately available in the workplace when there is a potential for eye contact.



Other skin protection

Wear appropriate chemical resistant clothing to prevent skin contact depending on the extent of exposure. During most normal work situations where exposure to the material cannot be avoided for a limited time span, waterproof pants and apron of chemical resistant material or coveralls of PE will be sufficient. Coveralls of PE must be discarded after use if contaminated. In cases of appreciable or prolonged exposure, coveralls of barrier laminate may be required.

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♣ SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES
9.1. Information on physical and chemical properties

Appearance	White solid (pelleted)
Odour	Mercaptanic
Odour threshold	Not determined
pH	When equal amounts of dimethoate and distilled water are dispersed at 20°C, the pH measured in the water phase is 3.7.
Melting point/freezing point	45 - 47°C (technical product)
Initial boiling point and boiling range	Decomposes
Flash point	106.5°C (Pensky-Martens closed tester; see, however, subsection 10.2. Chemical stability)
Evaporation rate	Not determined
Flammability (solid/gas)	Not highly flammable (did not ignite; test method EEC A10)
Upper/lower flammability or explosive limits	Not determined
Vapour pressure	2.47 x 10 ⁻⁴ Pa at 25°C 1.57 x 10 ⁻³ Pa at 35°C
Vapour density	Not determined
Relative density	1.31
Solubility(ies)	Solubility of dimethoate at 25°C in:
	acetone 1390 g/l
	acetonitrile 1420 g/l
	cyclohexanone 1220 g/l
	1,2-dichloroethane 1210 g/l
	dichloromethane 1500 g/l
	dodecane 0.43 g/l
	ethanol 1530 g/l
	ethyl acetate 1240 g/l
	n-heptane 0.242 g/l
	hexane 0.295 g/l
	isopropanol 1200 g/l
	methanol 1590 g/l
	n-octanol 522 g/l
	toluene 1030 g/l
	xylylene 313 g/l
	water 39.8 g/l
Partition coefficient n-octanol/water	Log K _{ow} = 0.704
Autoignition temperature	314°C
Decomposition temperature	Rapid decomposition above 80°C
Viscosity	Not determined
Explosive properties	Not explosive (test method EEC A14)
Oxidising properties	Not oxidising

9.2. Other information

Surface tension 2% solution in water: 47.8 mN/m at 20°C

SECTION 10: STABILITY AND REACTIVITY

- 10.1. **Reactivity** To our knowledge, the product has no special reactivities.
- 10.2. **Chemical stability** Dimethoate is stable for a long period at temperatures not exceeding 25°C. At higher temperatures decomposition will take place and lower the quality of the product.

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The decomposition is dependent on time as well as temperature due to self-accelerating exothermic and autocatalytic reactions. The reactions involve rearrangements and polymerisation.

At higher temperatures the released heat can raise the temperature further and accelerate the decomposition.

Tests have shown that, if dimethoate is heated to and kept at 40°C for 2 weeks, the content of active ingredient will be lowered by 6% or more and after 20 weeks at 40°C the content of active ingredient is halved.

Warning It is strongly advised not to heat dimethoate above 35°C and only heat indirectly and with solvent present.

Above 80°C dimethoate will decompose rapidly, significantly increasing the risk of explosion.

10.3. **Possibility of hazardous reactions** None known.

10.4. **Conditions to avoid** Heating of the product will produce harmful and irritant vapours.

10.5. **Incompatible materials** Strong alkalis, amines and strong oxidising compounds. The product can corrode metals (but does not meet the criteria for classification).

10.6. **Hazardous decomposition products** See subsection 5.2.

♣ SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity The substance is harmful by ingestion and inhalation. It is considered as less harmful by skin contact. The acute toxicity is measured as:

Route(s) of entry	- ingestion	LD ₅₀ , oral, rat: 386 mg/kg (method FIFRA 81.01)
	- skin	LD ₅₀ , dermal, rat: > 2000 mg/kg (method FIFRA 81.02)
	- inhalation	LC ₅₀ , inhalation, rat: approx. 1.6 mg/l/4 h

Skin corrosion/irritation Slightly irritating to skin (method FIFRA 81.05). Based on available data, the classification criteria are not met. (B.o.a.d.t.c.c.a.n.m.)

Serious eye damage/irritation Moderately irritating to eyes (method FIFRA 81.04). B.o.a.d.t.c.c.a.n.m.

Respiratory or skin sensitisation ... Not sensitizing (method OECD 429). B.o.a.d.t.c.c.a.n.m.

Germ cell mutagenicity Results for *in vitro* tests on dimethoate are equivocal, but dimethoate was not mutagenic in *in vivo* tests (method OECD 478). B.o.a.d.t.c.c.a.n.m.

Carcinogenicity No carcinogenic effects have been observed for dimethoate (4 studies). B.o.a.d.t.c.c.a.n.m.

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Reproductive toxicity	No effects on fertility are found for dimethoate at maternal non-toxic doses (4 studies). No teratogenic (birth defects causing) effects are found (5 studies). B.o.a.d.t.c.c.a.n.m.
STOT – single exposure	No specific effects after single exposure to dimethoate have been observed. B.o.a.d.t.c.c.a.n.m.
STOT – repeated exposure	Target organ: nervous system (cholinesterase inhibition) LOAEL: 25 ppm (2.5 mg/kg bw/day) in a 90 day rat study. At this exposure level, minor cholinesterase inhibition was found, which generally does not result in observable effects or discomfort. LOEL: approx. 40 mg/kg bw/day. It must be considered debatable if the cholinesterase inhibition found at this level constitutes an effect that warrants classification. B.o.a.d.t.c.c.a.n.m.
Aspiration hazard	The product does not present an aspiration pneumonia hazard.
Symptoms and effects, acute and delayed	Symptoms of cholinesterase inhibition: nausea, headache, vomiting, cramps, weakness, blurred vision, pin-point pupils, tightness in chest, laboured breathing, nervousness, sweating, watering of eyes, drooling or frothing of mouth and nose, muscle spasms and coma.

♣ SECTION 12: ECOLOGICAL INFORMATION

- 12.1. **Toxicity** The product is toxic to aquatic invertebrates and insects. It is harmful to fish and birds. It is considered as less harmful to soil microorganisms and aquatic plants. The measured ecotoxicity is:
- | | | |
|-----------------|------------------------------------------------------|---------------------------------------------------------------------------------------|
| - Fish | Rainbow trout (<i>Salmo gairdneri</i>) | 96-h LC ₅₀ : 30.2 mg/l
21-day NOEC: 0.4 mg/l |
| - Invertebrates | Daphnids (<i>Daphnia magna</i>) | 48-h EC ₅₀ : 2.0 mg/l
21-day NOEC: 0.04 mg/l |
| - Birds | Mallard duck (<i>Anas platyrhynchos</i>) | LD ₅₀ : 42 mg/kg |
| | Bobwhite quail (<i>Colinus virginianus</i>) | LD ₅₀ : 10.5 mg/kg |
| - Algae | Green algae (<i>Selenastrum capricornutum</i>) ... | 72-h IC ₅₀ : 90.4 mg/l |
| - Earthworms | <i>Eisenia foetida foetida</i> | 14-day LC ₅₀ : 31 mg/kg dry soil |
| - Bees | Honey bees (<i>Apis mellifera</i>) | LD ₅₀ , acute oral: 0.15 µg/bee
LD ₅₀ , contact: 0.12 µg/bee |
- 12.2. **Persistence and degradability** Dimethoate is biodegradable. It undergoes rapid degradation in the environment and in waste water treatment plants. No adverse effects are found at concentrations up to 100 mg/l in waste water treatment plants. Degradation occurs both aerobically and anaerobically, biologically as well as abiotically.
- Primary degradation half-lives for dimethoate vary with circumstances, but are usually around 2 to 4 days in aerobic soil and water. pH has a major influence. Degradation will increase at higher pH. Degradation products are not considered as harmful to soil dwelling or aquatic organisms and are mineralised relatively rapidly.
- 12.3. **Bioaccumulative potential** See section 9 for octanol-water partition coefficient.
- Dimethoate does not bioaccumulate. It is rapidly degraded and

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excreted. The bioaccumulation factor of dimethoate is measured to be > 1000 for whole fish (rainbow trout, *Salmo gairdneri*).

- 12.4. **Mobility in soil** Dimethoate has a potential mobility in soil, but is relatively unstable. Degradation products have low mobility.
- 12.5. **Results of PBT and vPvB assessment** The substance does not meet the criteria for being PBT or vPvB.
- 12.6. **Other adverse effects** Other relevant hazardous effects in the environment are not known.

♣ SECTION 13: DISPOSAL CONSIDERATIONS

- 13.1. **Waste treatment methods** Remaining quantities of the material and empty but unclean packaging should be regarded as hazardous waste.
- Disposal of waste and packagings must always be in accordance with all applicable local regulations.
- Disposal of product According to the Waste Framework Directive (2008/98/EC), possibilities for reuse or reprocessing should first be considered. If this is not feasible, the material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing.
- Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.
- Dimethoate is rapidly hydrolysed at pH > 8.0.
- Disposal of packaging Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: TRANSPORT INFORMATION

ADR/RID/IMDG/IATA/ICAO classification

- 14.1. **UN number** 3077
- 14.2. **UN proper shipping name** Environmentally hazardous substance, solid, n.o.s. (Dimethoate)
- 14.3. **Transport hazard class(es)** 9
- 14.4. **Packing group** III
- 14.5. **Environmental hazards** Marine pollutant
- 14.6. **Special precautions for user** Do not discharge to the environment.
- 14.7. **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code** The product is not transported in bulk tankers.

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♣ SECTION 15: REGULATORY INFORMATION

- 15.1. **Safety, health and environmental regulations/legislation specific for the substance or mixture** Seveso category in Annex I, part 2, to Dir. 96/82/EC: dangerous for the environment
The substance is covered by EU chemical legislation.
- 15.2. **Chemical safety assessment** A chemical safety assessment has not been performed.

♣ SECTION 16: OTHER INFORMATION

Relevant changes to the SDS	Numerous changes have been made to bring the safety data sheet in line with Reg. 453/2010, but these do not involve essential new information about hazardous properties
List of abbreviations	ACGIH American Conference of Governmental Industrial Hygienists BAT Biologische Arbeitsstoff-Toleranzwert BEI Biological Exposure Index B.o.a.d.t.c.c.a.n.m.: Based on available data, the classification criteria are not met. CAS Chemical Abstracts Service CLP Classification, Labelling and Packaging; refers to EU regulation 1272/2008 as amended Dir. Directive DNEL Derived No Effect Level DSD Dangerous Substance Directive; refers to Dir. 67/548/EEC as amended EC European Community EC ₅₀ 50% Effect Concentration EINECS European Inventory of Existing Commercial Chemical Substances GHS Globally Harmonized classification and labelling System of chemicals, Third revised edition 2009 HSE Health & Safety Executive, UK IBC International Bulk Chemical code IC ₅₀ 50% Inhibition Concentration ISO International Organisation for Standardization IUPAC International Union of Pure and Applied Chemistry LC ₅₀ 50% Lethal Concentration LD ₅₀ 50% Lethal Dose LOAEL Lowest Observed Adverse Effect Level LOEL Lowest Observed Effect Level MAK Maximale Arbeitsplatz-Konzentration MARPOL Set of rules from the International Maritime Organisation (IMO) for prevention of sea pollution NOEC No Observed Effect Concentration N.o.s. Not otherwise specified OECD Organisation for Economic Cooperation and Development OSHA Occupational Safety and Health Administration PBT Persistent, Bioaccumulative, Toxic PE Polyethylene PEL Personal Exposure Limit PNEC Predicted No Effect Concentration Reg. Regulation

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R-phrase Risk phrase
SDS Safety Data Sheet
S-phrase Safety phrase
STOT Specific Target Organ Toxicity
TLV Threshold Limit Value
vPvB very Persistent, very Bioaccumulative
WEL Workplace Exposure Limit
WHO World Health Organisation

References Data are available from published literature and can be found several places.

Method for classification Reg. 1272/2008 Annex VI; Dir. 67/548/EEC Annex I

Used CLP hazard statements
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
EUH401 To avoid risks to human health and the environment, comply with the instructions of use.

Used R-phrase R21/22 Harmful in contact with skin and if swallowed.

Advice on training This material should only be used by persons who are made aware of its hazardous properties and have been instructed in the required safety precautions.

The information provided in this safety data sheet is believed to be accurate and reliable, but uses of the product vary and situations unforeseen by Cheminova A/S may exist. The user has to check the validity of the information under local circumstances.

Prepared by: Cheminova A/S
Safety, Health, Environment & Quality Department / GHB