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CVR No. DK 12 76 00 43

SAFETY DATA SHEET

Chlorpyrifos 50 g/kg GR

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** ..... **Chlorpyrifos 50 g/kg GR**

1.2. **Relevant identified uses of the substance or mixture and uses advised against** ..... Can be used as insecticide only.

1.3. **Details of the supplier of the safety data sheet**

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SDS.Ronland@fmc.com

1.4. **Emergency telephone number**

Medical emergencies:

Austria: +43 1 406 43 43
Belgium: +32 70 245 245
Bulgaria: +359 2 9154 409
Cyprus: 1401
Czech Republic: +420 224 919 293
+420 224 915 402
Denmark: +45 82 12 12 12
England and Wales: 111
Estonia: +372 7943500
Finland: +358 9 471 977
France: +33 (0) 1 45 42 59 59
Greece: 30 210 77 93 777
Hungary: +36 80 20 11 99
Ireland (Republic): +353 1 837 9964
Italy: +39 02 6610 1029
Latvia: +371 670 42 473
112
Lithuania: +370 523 62052
+370 687 53378
Luxembourg: +352 8002 5500
Netherlands: +31 30 274 88 88
Norway: +47 22 591300
Poland: +48 22 619 66 54
+48 22 619 08 97
Portugal: 800 250 250 (in Portugal only)
+351 21 330 3284
Romania: +40 21318 3606
Scotland: +8454 24 24 24
Slovakia: +421 2 54 77 4 166
Slovenia: +386 41 650 500
South Africa: +27 83 123 3911 (Bateleur Emergency Response Co.)
Spain: +34 91 562 04 20
Sweden: +46 08-331231
112
Switzerland: 145
Turkey: 114
U.S.A. & Canada: +1 800 / 331 3148
All other countries: +1 651 / 632 6793 (Collect)

For fire, leak, spill or other accident emergencies:

U.S.A.: +1 800 / 424 9300 (CHEMTREC)
All other countries: +1 703 / 741 5970 (CHEMTREC - Collect)

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SECTION 2: HAZARDS IDENTIFICATION

2.1. **Classification of the substance or mixture** — Hazards to the aquatic environment, acute: Category 1 (H400)
chronic: Category 1 (H410)

WHO classification ..... Class III, slightly hazardous

Health hazards ..... The product is not considered as harmful by single exposure. However, the active ingredient chlorpyrifos is a poison (cholinesterase inhibitor). It rapidly enters the body on contact with all skin surfaces and eyes. Exposed persons may need prompt medical treatment if symptoms of cholinesterase inhibition occur.

Environmental hazards ..... The product is very toxic to aquatic organisms.

2.2. **Label elements**

According to EU Reg. 1272/2008 as amended

Product identifier ..... Chlorpyrifos 50 g/kg GR

Hazard pictogram (GHS09) .....

Signal word ..... Warning

Hazard statement
H410 ..... Very toxic to aquatic life with long lasting effects.

Supplementary hazard statements
EUH208 ..... Contains maleic anhydride. May produce an allergic reaction.
EUH401 ..... To avoid risks to human health and the environment, comply with the instructions of use.

Precautionary statements
P273 ..... Avoid release to the environment.
P391 ..... Collect spillage.
P501 ..... Dispose of contents and container as hazardous waste.

2.3. **Other hazards** ..... None of the ingredients in the product meets the criteria for being PBT or vPvB.

♣ SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. **Substances** ..... The product is a mixture, not a substance

3.2. **Mixtures** ..... See section 16 for full text of hazard statements.

Chlorpyrifos ..... Content: 5% w/w

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CAS name ..... Phosphorothioic acid, O,O-diethyl O-(3,5,6-trichloro-2-pyridinyl) ester
CAS no. 2921-88-2
IUPAC name ..... O,O-Diethyl O-3,5,6-trichloro-2-pyridyl phosphorothioate
ISO name/EU name ..... Chlorpyrifos
EC no. (EINECS no.) 220-864-4
EU index no. 015-084-00-4
Molecular weight 350.59
Classification of the ingredient ..... Acute oral toxicity: Category 3 (H301)
Hazards to the aquatic environment, acute: Category 1 (H400)
chronic: Category 1 (H410)
M-factor 10 000

Reportable ingredients	Content (% w/w)	CAS no.	EC no.	Classification
Quartz	max. 3	14808-60-7	238-878-4	Not classified Personal exposure limits exist.
2-(2-Butoxyethoxy)ethanol Reg. no. 01-2119475104-44	2	112-34-5	203-961-6	Eye Irrit. 2 (H319)
Maleic anhydride Reg. no. 01-2119472428-31	0.1 - < 1	108-31-6	203-571-6	Acute Tox. 4 (H302) Skin Corr. 1B (H314) Eye Dam. 1 (H318) Resp. Sens. 1 (H334) Skin Sens. 1A (H317) EUH071 Specific concentration limit for Skin Sens. 1A (H317): ≥ 0.001%

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

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

Skin contact ..... Immediately flush with much water while removing contaminated clothing and footwear. Wash with water and soap. See physician immediately if symptoms 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. See physician if any discomfort develops.

Ingestion ..... Inducing vomiting is not recommended. Make the exposed person

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rinse mouth and then drink 1 or 2 glasses of water or milk. If vomiting does occur, let him/her rinse mouth and drink fluids again. Never give anything by mouth to an unconscious person. Get medical attention immediately.

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

The first symptom to appear may be irritation. 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**

If any sign of cholinesterase inhibition occurs, call a doctor (physician), clinic or hospital immediately. Explain that the victim has been exposed to **chlorpyrifos**, an organophosphorus insecticide. Describe his/her condition and the extent of exposure. Immediately remove the exposed person from the area where the product is present.

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.

Notes to physician .....

Chlorpyrifos is a cholinesterase inhibitor affecting the central and peripheral nervous systems producing respiratory depression.

Cholinesterase inhibition – treatment

Much information on (acetyl)cholinesterase inhibition by organophosphate insecticides and its treatment can be found on the internet.

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

Antidote: If symptoms (see 4.2.) 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.

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

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FOR AT LEAST 48 HOURS, DEPENDING ON THE SEVERITY OF POISONING.

SECTION 5: FIRE-FIGHTING 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, toxic, irritant, malodorous and inflammable compounds such as hydrogen chloride, hydrogen sulphide, ethyl mercaptan, diethyl sulphide, sulphur dioxide, carbon monoxide, carbon dioxide, nitrogen oxides, phosphorus pentoxide and various chlorinated organic compounds.

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, closable vessels for the collection of spills should be available.

In case of large spill (involving 10 tonnes of the product or more):
1. use personal protection equipment; see section 8
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 rubber boots.

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

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).

Surface water drains should be covered if appropriate. Minor spills on

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the floor or other impervious surface should be swept up immediately or preferably vacuumed up using equipment with high efficiency final filter. Transfer to suitable containers. Clean area with soda lye and much water. Absorb wash liquid onto suitable absorbent such as universal binder, hydrated lime, bentonite or other absorbent clay and transfer to suitable containers. The used containers should be properly closed and labelled.

Large 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** .... In an industrial environment it is important to avoid all personal contact with the product, if possible by using closed systems with remote system control. The material should be handled by mechanical means as much as possible. Adequate ventilation or local exhaust ventilation is required. The exhaust 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.

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. Clothes that have been heavily drenched must be discarded as hazardous waste. Do not wash and reuse them.

Do not discharge to the environment. Do not contaminate water when disposing of equipment wash waters. Collect all waste material and remains from cleaning equipment, etc., and dispose of as hazardous waste. See section 13 for disposal.

7.2. **Conditions for safe storage, including any incompatibilities** The product is stable under normal conditions of warehouse storage. Protect against sunshine for prolonged periods.

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Keep in tightly 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 a registered pesticide which may only be used for the applications it is registered for, in accordance with a label approved by the regulatory authorities.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. **Control parameters**

Personal exposure limits

		Year	
Chlorpyrifos	ACGIH (USA) TLV	2015	TWA 0.1 mg/m^3, inhalable fraction and vapour Skin notation; BEI
	OSHA (USA) PEL	2015	Not established
	EU, 2000/39/EC as amended	2017	Not established
	Germany, MAK	2014	Not established; BAT
	HSE (UK) WEL	2011	8-h TWA 0.2 mg/m^3 STEL 0.6 mg/m^3; 15-minute reference period Skin notation
Crystalline silica (quartz)	ACGIH (USA) TLV	2015	TWA 0.025 mg/m^3, respirable fraction of the aerosol
	OSHA (USA) PEL	2015	TWA total dust: $\frac{30 \text{ mg/m}^3}{\% \text{ SiO2} + 2}$ Respirable dust: $\frac{250 \text{ mppcf}}{\% \text{ SiO2} + 5}$ or $\frac{10 \text{ mg/m}^3}{\% \text{ SiO2} + 2}$
	EU, 2000/39/EC as amended	2017	Not established
	Germany, MAK	2014	Not established
	HSE (UK) WEL	2011	8-hr TWA: 0.1 mg/m^3, respirable

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.

Chlorpyrifos

DNEL ..... Not established
The EFSA has established an AOEL of 0.005 mg/kg bw/day

PNEC, aquatic environment ..... 0.046 ng/l

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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.

In cases of incidental high exposure, maximal personal protection may be necessary, such as respirator, face mask, chemical resistant coveralls.

Respiratory protection

In the event of an accidental discharge of the material which produces a heavy vapour or mist, 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 the product 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 shift the gloves frequently and to limit the work done manually.

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 polyethylene (PE) will be sufficient. Coveralls of PE must be discarded after use if contaminated. In cases of excessive or prolonged exposure, coveralls of barrier laminate may be required.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. **Information on basic physical and chemical properties**

Physical state	Granular (free, without compaction)
Colour	Different colour scheme granules tending to grey tone
Odour	Mercaptan like
Melting point/freezing point	Not determined
Boiling point or initial boiling point and boiling range	Not determined
Flammability	Not flammable; not ignitable
Lower and upper explosive limit ..	Not determined

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Flash point	Testing not required, product is a solid
Auto-ignition temperature	Not autoflammable
Decomposition temperature	Not determined
pH	1% dispersion in water: 9.4 at 20°C
Kinematic viscosity	Not determined
Solubility	The product is not soluble in water.
	Chlorpyrifos : miscible with toluene miscible with ethyl acetate 774 g/l in hexane at 20°C 290 g/l in methanol at 20°C 0.94 mg/l in water at 25°C
Partition coefficient n-octanol/water (log value)	**Chlorpyrifos** : log K_{ow} = 4.7
Vapour pressure	**Chlorpyrifos** : 2.7 x 10^{-3} Pa at 25°C 1.8 x 10^{-2} Pa at 35°C
Density and/or relative density	Bulk density: 1.17 - 1.23 g/cm^3
Relative vapour density	Not determined
Particle characteristics	Granules
Explosive properties	No explosive properties
Oxidising properties.....	No oxidising properties

9.2. **Other information** ..... No more relevant information is available.

SECTION 10: STABILITY AND REACTIVITY

10.1. **Reactivity** ..... To our knowledge, the product has no special reactivities.

10.2. **Chemical stability** ..... **Chlorpyrifos** will decompose rapidly when heated to temperatures above 160°C, significantly increasing the risk of explosion. Direct local heating of the product such as electric heating or by steam must be avoided.

The decomposition is to a considerable extent dependent on time as well as temperature due to self-accelerating exothermic and autocatalytic reactions. The reactions involve rearrangements and polymerisation releasing volatile malodorous and inflammable compounds such as diethyl sulphide and ethyl mercaptan.

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

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

10.5. **Incompatible materials** ..... Strong alkalis 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.

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SECTION 11: TOXICOLOGICAL INFORMATION

11.1. **Information on hazard classes as defined in Regulation (EC) No 1272/2008**

* = Based on available data, the classification criteria are not met.

Product

Acute toxicity ..... The product is not considered as harmful. * However, it should always be treated with the usual care of handling chemicals. The acute toxicity has been measured as:

Route(s) of entry
- ingestion: LD_{50}, oral, rat: > 5000 mg/kg (method OECD 423)
- skin: LD_{50}, dermal, rat: > 2000 mg/kg (method OECD 402)
- inhalation: LC_{50}, inhalation, rat: cannot be measured because of technical reasons. A harmful concentration in air cannot be obtained.

Skin corrosion/irritation ..... The product is not irritating to skin (method OECD 404). *

Serious eye damage/irritation ..... The product may be mildly irritating to eyes (method OECD 405). *

Respiratory or skin sensitisation ... The product is not sensitising (method OECD 406).

Germ cell mutagenicity ..... The product contains no ingredients known to be mutagenic. *

Carcinogenicity ..... The product contains no ingredients known to be carcinogenic. *

Reproductive toxicity ..... The product contains no ingredients found to have adverse effects on reproduction. *

STOT – single exposure ..... To our knowledge, no specific effects other than already mentioned have been observed after single exposure. *

STOT – repeated exposure ..... The following was measured on the active ingredient **chlorpyrifos**:
Target organ: nervous system (cholinesterase inhibition)
LOAEL: 1 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. A level for observable effects (LOEL) has not been determined. *

Aspiration hazard ..... The product does not present an aspiration pneumonia hazard.

Chlorpyrifos

Toxicokinetics, metabolism and distribution: Chlorpyrifos is rapidly absorbed and excreted following oral administration. It is widely distributed in the body and extensively metabolised. There is no evidence for accumulation.

Acute toxicity ..... The substance is toxic by ingestion. Toxicity by inhalation is not known. It is considered as less harmful by skin contact. The acute toxicity is measured as:

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Route(s) of entry	- ingestion	LD_{50}, oral, rat (male): 276 mg/kg (method FIFRA 81.01)
		LD_{50}, oral, rat (female): 350 mg/kg
	- skin	LD_{50}, dermal, rat: > 2000 mg/kg (method FIFRA 81.02) *
	- inhalation	LC_{50}, inhalation, rat: not available
Skin corrosion/irritation		Slightly irritating to skin (method FIFRA 81.05). *
Serious eye damage/irritation		Slightly irritating to eyes (method FIFRA 81.04). *
Respiratory or skin sensitisation ...		Not sensitising (method FIFRA 81.06). *

Quartz (crystalline silica)

Acute toxicity	The substance is not considered harmful by single exposure. *
Carcinogenicity	The consensus among a number of international agencies is that a positive association exists between crystalline silica exposure and lung cancer.
STOT – single exposure	Inhalation of dust can cause irritation of airways. Brief exposures to crystalline silica at concentrations 10 to 100 mg/m^3 produced persistent pulmonary inflammatory responses in animal tests.*
STOT – repeated exposure	Repeated exposure causes silicosis, a pulmonary disease.

2-(2-Butoxyethoxy)ethanol

Toxicokinetics, metabolism and distribution		Skin absorption is low but detectable. Absorbed material is eliminated within 24 hours in the urine, primarily as the metabolite 2-(2-butoxy-ethoxy)acetic acid.
Acute toxicity		The substance is not harmful by single exposure. * The acute toxicity is measured as:
Route(s) of entry	- ingestion	LD_{50}, oral, rat (female): 5080 mg/kg
	- skin	LD_{50}, dermal, rabbit: 2764 mg/kg (method similar to OECD 402)
	- inhalation	LC_{50}, inhalation, rat: no symptoms except for some eye irritation after exposure for two hours at saturated vapour pressure (29 ppm or 0.25 mg/l).
Skin corrosion/irritation		The substance may be mildly irritating to skin (found in several studies). *
Serious eye damage/irritation		The substance is irritating to eyes (found in several studies).
Respiratory or skin sensitisation ...		The substance is not sensitising to guinea pigs (method similar to OECD 409). *

Maleic anhydride

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Toxicokinetics, metabolism and distribution		After oral intake, maleic anhydride is readily absorbed and widely distributed in the body. It is extensively metabolised to natural body constituents and partially taken up in the organism.
Acute toxicity		The substance is harmful by ingestion. The acute toxicity is measured as:
Route(s) of entry	- ingestion	LD_{50}, oral, rat: 1090 mg/kg (method OECD 401)
	- skin	LD_{50}, dermal, rabbit: 2620 mg/kg (method OECD 402) *
	- inhalation	LC_{50}, inhalation, rat: no reliable data available
Skin corrosion/irritation		The substance is corrosive (method similar to OECD 404).
Serious eye damage/irritation		The substance is corrosive.
Respiratory or skin sensitisation ...		Allergenic properties have been observed in humans.

11.2. **Information on other hazards** .... No more relevant information is available.

SECTION 12: ECOLOGICAL INFORMATION

12.1. **Toxicity** ..... The product is highly toxic to fish, aquatic invertebrates and insects. It is toxic to aquatic plants, but it is considered as less toxic to birds and not harmful to soil micro- and macroorganisms.

The acute toxicity of the active ingredient **chlorpyrifos** is measured as:

- Fish	Rainbow trout (*Oncorhynchus mykiss*)	96 h-LC_{50}: 0.686 mg/l
- Invertebrates	Daphnids (*Daphnia magna*)	48 h-EC_{50}: 2.61 µg/l
- Algae	Green algae (*Pseudokirchneriella subcapitata*)	96-h EC_{50}: > 21.8 mg/l
- Earthworms	*Eisenia foetida foetida*	LD_{50}: ca. 3300 mg/kg dry substrate

12.2. **Persistence and degradability** .... **Chlorpyrifos** is biodegradable, but does not meet the criteria for being readily biodegradable. It undergoes 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 abiologically.

Primary degradation half-lives of **chlorpyrifos** vary with circumstances, but are usually around 4 - 10 weeks in soil and water. pH has a major influence. Degradation will increase at higher pH.

12.3. **Bioaccumulative potential** ..... See section 9 for octanol-water partition coefficients.

Chlorpyrifos has the potential to bioaccumulate, but is rapidly excreted (with half-life 2 - 3 days). The bioaccumulation factor of chlorpyrifos is measured to be 1375 for whole fish (rainbow trout).

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12.4. **Mobility in soil** ..... **Chlorpyrifos** is not mobile in the environment, but is strongly absorbed to soil

12.5. **Results of PBT and vPvB assessment** ..... None of the ingredients meets the criteria for being PBT or vPvB.

12.6. **Endocrine disrupting properties** None of the ingredients is known to have endocrine disrupting properties.

12.7. **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.

Chlorpyrifos is rapidly hydrolysed at pH > 8.0.

Disposal of packaging ..... It is recommended to consider possible ways of disposal in the following order:
1. Reuse or recycling should first be considered. If offered for recycling, containers must be emptied and triply rinsed (or equivalent). Do not discharge rinsing water to sewer systems.
2. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.
3. Delivery of the packaging to a licensed service for disposal of hazardous waste.
4. Disposal in a landfill or burning in open air should only occur as a last resort. For disposal in a landfill containers should be emptied completely, rinsed and punctured to make them unusable for other purposes. If burned, stay out of smoke.

SECTION 14: TRANSPORT INFORMATION

ADR/RID/IMDG/IATA/ICAO classification

14.1. **UN number** 3077

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14.2.	**UN proper shipping name**	Environmentally hazardous substance, solid, n.o.s. (chlorpyrifos)
14.3.	**Transport hazard class(es)**	9
14.4.	**Packing group**	III
14.5.	**Environmental hazards**	Marine pollutant
14.6.	**Special precautions for user**	Avoid any unnecessary contact with the product. Misuse can result in damage to health. Do not discharge to the environment.
14.7.	**Maritime transport in bulk according to IMO instruments**	The product is not transported in bulk by ship.

SECTION 15: REGULATORY INFORMATION

15.1.	**Safety, health and environmental regulations/legislation specific for the substance or mixture**	Seveso category (Dir. 2012/18/EU): dangerous for the environment. All ingredients are covered by EU chemical legislation.
15.2.	**Chemical safety assessment**	A chemical safety assessment is not required to be included for this product.

SECTION 16: OTHER INFORMATION

Relevant changes in the safety data sheet ..... Minor corrections only

List of abbreviations .....

ACGIH	American Conference of Governmental Industrial Hygienists
AOEL	Acceptable Operator Exposure Level
BAT	Biologische Arbeitsstoff-Toleranzwert
BEI	Biological Exposure Index
CAS	Chemical Abstracts Service
Dir.	Directive
DNEL	Derived No Effect Level
EC	European Community
EC_{50}	50% Effect Concentration
EFSA	European Food Safety Authority
EINECS	European INventory of Existing Commercial Chemical Substances
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
GHS	Globally Harmonized classification and labelling System of chemicals, Seventh revised edition 2017
GR	Granule
HSE	Health & Safety Executive, UK
IMO	International Maritime Organisation
ISO	International Organisation for Standardisation
IUPAC	International Union of Pure and Applied Chemistry

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LC_{50}	50% Lethal Concentration
LD_{50}	50% Lethal Dose
LOAEL	Lowest Observed Adverse Effect Level
LOEL	Lowest Observed Effect Level
MAK	Maximale Arbeitspaltz-Konzentration
mppcf	Million particles per cubic foot
n.o.s.	Not otherwise specified
OECD	Organisation for Economic Development and Cooperation
OSHA	Occupational Safety and Health Administration
PBT	Persistent, Bioaccumulative, Toxic
PEL	Personal Exposure Limit
PNEC	Predicted No Effect Concentration
Reg.	Registration, or Regulation
STEL	Short-Term Exposure Limit
STOT	Specific Target Organ Toxicity
TLV	Threshold Limit Value
TWA	Time Weighted Average
vPvB	very Persistent, very Bioaccumulative
WEL	Workplace Exposure Limit
WHO	World Health Organisation

References ..... Data measured on a similar product are unpublished company data. Data on ingredients are available from published literature and can be found several places.

Method for classification ..... Test data

Used hazard statements .....

H301	Toxic if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
EUH071	Corrosive to the respiratory tract.
EUH208	Contains maleic anhydride. May produce an allergic Reaction.
EUH401	To avoid risks to human health and the environment, comply with the instructions of use.

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

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product vary and situations unforeseen by FMC Corporation may exist. The user has to check the validity of the information under local circumstances.

Prepared by: FMC Agricultural Solutions A/S / GHB / JGA / COe