



SAFETY DATA SHEET

HEXYTHIAZOX 10% WP


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

- For fire, leak, spill or other accident emergencies:*

U.S.A.: +1 800 / 424 9300 (CHEMTREC)
All other countries: +1 703 / 527 3887 (CHEMTREC - Collect)

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♣ SECTION 2: HAZARDS IDENTIFICATION

- 2.1. Classification of the substance or mixture** Hazards to the aquatic environment, chronic: Category 1 (H410)
- WHO classification Class U (unlikely to present acute hazard in normal use).
- Health hazards The product is not likely to pose any health risk during normal use. However, it should always be treated with the usual care of handling chemicals.
- Environmental hazards The product is toxic to aquatic organisms.
- 2.2. Label elements**
According to EU Reg. 1272/2008 as amended
- Product identifier Hexythiazox 10% WP
- Hazard pictogram (GHS09)
- 
- Signal word None
- Hazard statement
 H410 Very toxic to aquatic life with long lasting effects.
- Supplementary hazard statement
 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/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.
- Active ingredient
- Hexythiazox** Content: 10% by weight
- CAS name 3-Thiazolidinecarboxamide, 5-(4-chlorophenyl)-N-cyclohexyl-4-methyl-2-oxo-, (4R,5R)-rel-
- CAS no. 78587-05-0

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IUPAC name (4S,5S)-5-(4-Chlorophenyl)-N-cyclohexyl-4-methyl-2-oxothiazolidine-3-carboxamide
 ISO name/EU name Hexythiazox
 EC no. (ELINCS no.) 215-343-3
 EU index no. 613-125-00-6
 Molecular weight 352.9
 Classification of the ingredient Hazards to the aquatic environment, acute: Category 1 (H400)
 chronic: Category 1 (H410)

<u>Reportable ingredients</u>	Content (% w/w)	CAS no.	EC no. (EINECS no.)	Classification
Kaolin	73	1332-58-7	310-194-1	Not classified
2,5-Furandione, polymer with 2,4,4-trimethylpentene, sodium salt	1.5	37199-81-8	None	Eye Irrit. 2 (H319)

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

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.

Skin contact Immediately remove contaminated clothing and footwear. Flush skin with water. Wash with water and soap. See physician if any symptom develops.

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 irritation persists.

Ingestion Inducing vomiting is not recommended. Rinse mouth and drink water or milk. If vomiting does occur, rinse mouth and drink fluids again. Call a doctor or get medical attention immediately.

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

May be mildly irritating to eyes and airways.

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

Immediate medical attention is required in case of ingestion
 It may be helpful to show this safety data sheet to physician.

Note to physician A specific antidote against this substance is not known. Gastric lavage and/or administration of activated charcoal can be considered. After decontamination, treatment is supportive and symptomatic.

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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 and inflammable compounds such as nitrogen oxides, hydrogen chloride, sulphur dioxide, carbon monoxide, carbon dioxide 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.
- 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 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. Clean area with strong industrial detergent and much water. Absorb wash liquid onto inert absorbent such as universal binder, Fuller's earth, bentonite or other absorbent

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clay and collect in 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 recommended 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.

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. 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 humidity, excessive heat and sunshine.
- 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. 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

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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 To our knowledge not established for the active ingredient in this product.

Kaolin		Year	
		2015	2015
	ACGIH (USA) TLV	2015	2 mg/m ³ , respirable fraction of the aerosol
	OSHA (USA) PEL	2015	15 mg/m ³ , total dust 5 mg/m ³ , respirable fraction
	EU, 2000/39/EC as amended	2017	Not established
	Germany, MAK	2014	Not established
	HSE (UK) WEL	2011	2 mg/m ³ , respirable dust

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

Hexythiamox

DNEL	Not established
PNEC, aquatic environment	EFSA has established an AOEL of 0.009 mg/kg bw/day 0.61 µg/l

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.

The precautions mentioned below are primarily meant for handling of the undiluted product and for preparing the spray solution, but can be recommended for spraying as well.

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



Respiratory protection

The product does not automatically present an airborne exposure concern during normal handling, but 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 chemical resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber or viton. The breakthrough times of these materials for the product are unknown, but it is expected that they will give adequate protection.

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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 physical and chemical properties

Appearance	Light brown solid (powder)
Odour	Characteristic
Odour threshold	Not determined
pH	1% suspension in water: 6 – 7
Melting point	Not determined
Initial boiling point and boiling range	Not determined
Flash point	Not determined
Evaporation rate	Not determined
Flammability (solid/gas)	Not highly flammable
Upper/lower flammability or explosive limits	Not determined
Vapour pressure	Hexythiazox : < 1.33 x 10 ⁻⁶ Pa at 25°C
Vapour density	Not determined
Relative density	Not determined
Solubility(ies)	Density: 0.85 - 0.86 g/cm ³ Solubility of hexythiazox at 20°C in: ethyl acetate 148 g/l n-heptane 4.6 g/l water 0.1 mg/l
Partition coefficient n-octanol/water	Hexythiazox : log K _{ow} = 2.67 at 25°C
Autoignition temperature	Not self-igniting
Decomposition temperature	Not determined
Viscosity	Not determined
Explosive properties	Not explosive
Oxidising properties	Not oxidising

9.2. Other information

Miscibility	The product is dispersible in water.
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SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity	To our knowledge, the product has no special reactivities.
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- 10.2. **Chemical stability** The product is stable during normal handling and storage at ambient temperatures.
- 10.3. **Possibility of hazardous reactions** None known.
- 10.4. **Conditions to avoid** Heating of the product may evolve harmful and irritant vapours.
- 10.5. **Incompatible materials** None known.
- 10.6. **Hazardous decomposition products** See subsection 5.2.

♣ SECTION 11: TOXICOLOGICAL INFORMATION

- 11.1. **Information on toxicological effects** * = Based on available data, the classification criteria are not met.

Product

- Acute toxicity The product is not harmful by inhalation, in contact with skin or if swallowed. * The acute toxicity of the product is estimated as:
- Route(s) of entry - ingestion LD₅₀, oral, rat: > 5000 mg/kg
 - skin LD₅₀, dermal, rat: > 5000 mg/kg
 - inhalation LC₅₀, inhalation, rat: > 5.0 mg/l/4 h
- Skin corrosion/irritation Not expected to be irritating to skin. *
- Serious eye damage/irritation May be mildly irritating to eyes. *
- Respiratory or skin sensitisation ... Not expected to be a skin sensitizer. *
- 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 have been observed after single exposure. *
- STOT – repeated exposure The following has been measured on the active ingredient hexythiazox:
 Target organ: liver and adrenal cortex
 NOAEL: 2.87 mg/kg bw/day in a 1-year dog study based on fatty degeneration of adrenal cortex at higher dosage. *
- Aspiration hazard The product contains no ingredients known to present an aspiration pneumonia hazard. *

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Symptoms and effects, acute and delayed Not known. Poisoning is unlikely, unless large quantities are ingested. Mild irritation of eyes may occur.

Hexythiazox

Acute toxicity The substance is not harmful by inhalation, in contact with skin or if swallowed. * The acute toxicity is measured as:

Route(s) of entry	- ingestion	LD ₅₀ , oral, rat: > 5000 mg/kg
	- skin	LD ₅₀ , dermal, rat: > 5000 mg/kg
	- inhalation	LC ₅₀ , inhalation, rat: > 2.0 mg/l/4 h

Skin corrosion/irritation Not irritating to skin. *

Serious eye damage/irritation Not irritating to eyes. *

Respiratory or skin sensitisation ... Not a skin sensitizer. *

2,5-Furandione, polymer with 2,4,4-trimethylpentene, sodium salt

Acute toxicity The substance is not considered to be harmful by ingestion, inhalation or in contact with skin. *

Route(s) of entry	- ingestion	LD ₅₀ , oral, rat: not available
	- skin	LD ₅₀ , dermal, rat: not available
	- inhalation	LC ₅₀ , inhalation, rat: not available

Skin corrosion/irritation May be mildly irritating to skin. *

Serious eye damage/irritation Irritating to eyes.

Respiratory or skin sensitisation ... May be mildly irritating to airways. *

SECTION 12: ECOLOGICAL INFORMATION

12.1. **Toxicity** The active ingredient is highly toxic to fish and aquatic invertebrates. It is considered as less toxic to aquatic plants and non-toxic to soil macroorganisms, birds, mammals and insects. It may have short-term effects on soil microorganisms, but no significant long-term effects have been observed.

The measured ecotoxicity of the active ingredient **hexythiazox** is:

- Fish	Bluegill sunfish (<i>Lepomis macrochirus</i>)	96-h LC ₅₀ : 3.2 mg/l
	Rainbow trout (<i>Oncorhynchus mykiss</i>)	28-day NOEC: 0.04 mg/l
- Invertebrates	Daphnids (<i>Daphnia magna</i>)	48-h EC ₅₀ : 0.36 mg/l
		21-day NOEC: 0.0061 mg/l
- Algae	Green algae (<i>Scenedesmus subspicatus</i>)	72-h ErC ₅₀ : > 0.4 mg/l
- Birds	Mallard duck	LD ₅₀ : > 2000 mg/kg

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- Earthworms *Eisenia foetida* 14-day LC₅₀: > 50 mg/kg dry soil
- Insects Bees LD₅₀, oral: > 112 µg/bee
 LD₅₀, contact: > 200 µg/bee

12.2. **Persistence and degradability** **Hexythiazox** is not readily biodegradable. Its primary half-life in soil can vary from one to several months depending on circumstances.

The product contains small amounts of other ingredients which are not readily biodegradable and may not be degradable in a waste water treatment plant.

12.3. **Bioaccumulative potential** See section 9 for n-octanol/water partition coefficient.

Hexythiazox has a moderate potential to bioaccumulate. The bioconcentration factor was measured to be approx. 975. It was excreted almost completely within 14 days.

12.4. **Mobility in soil** In the environment **hexythiazox** is not mobile.

12.5. **Results of PBT and vPvB assessment** None of the ingredients meets 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.

Disposal of packaging It is recommended to consider possible ways of disposal in the following order:
 1. Reuse or recycling should first be considered. Reuse is prohibited except by the authorisation holder. 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.

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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
- 14.2. **UN proper shipping name** Environmentally hazardous substance, solid, n.o.s. (hexythiazox)
- 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. **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code** 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.
- 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 |
| CAS | Chemical Abstracts Service |
| Dir. | Directive |
| DNEL | Derived No Effect Level |
| EC | European Community |
| EC ₅₀ | 50% Effect Concentration |

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E _r C ₅₀	50% Effect Concentration based on growth
EFSA	European Food Safety Authority
EINECS	European INventory of Existing Commercial Chemical Substances
GHS	Globally Harmonized classification and labelling System of chemicals, Fifth revised edition 2013
HSE	Health & Safety Executive, UK
IBC	International Bulk Chemical code
ISO	International Organisation for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC ₅₀	50% Lethal Concentration
LD ₅₀	50% Lethal Dose
MAK	Maximale Arbeitsplatz-Konzentration
MARPOL	Set of rules from the International Maritime Organisation (IMO) for prevention of sea pollution
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
n.o.s.	Not otherwise specified
OSHA	Occupational Safety and Health Administration
PBT	Persistent, Bioaccumulative, Toxic
PEL	Personal Exposure Limit
PNEC	Predicted No Effect Concentration
Reg.	Regulation
STOT	Specific Target Organ Toxicity
TLV	Threshold Limit Value
vPvB	very Persistent, very Bioaccumulative
WEL	Workplace Exposure Limit
WHO	World Health Organisation
WP	Wettable Powder

References	Data on ingredients are available from published literature and can be found several places.
Method for classification	Calculation rules
Used hazard statements	H319 Causes serious eye irritation. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. 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 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 Corporation / Cheminova A/S / GHB