Substance key: 000000240522	Revision Date: 02/27/2023
Version : 4 - 0 / USA	Date of printing :03/01/2024

SECTION 1. IDENTIFICATION

Identification of the company:	Clariant Corporation 500 East Morehead Street Charlotte, NC, 28202 Telephone No.: +1 704 331 7000 **Information of the substance/preparation:** Product Stewardship, +1-704-331-7710 e-mail: SDS.NORAM@clariant.com **Emergency tel. number:** +1 800-424-9300 CHEMTREC

Trade name:	**Exolit OP 1314**
Material number:	215253
Primary product use:	Flame retardants
Chemical family:	mixture of flame retardants

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Combustible dust

Germ cell mutagenicity	:	Category 2
Reproductive toxicity	:	Category 2

GHS label elements

Hazard pictograms	:	
Signal word	:	Warning
Hazard statements	:	May form combustible dust concentrations in air. H341 Suspected of causing genetic defects. H361d Suspected of damaging the unborn child.
Precautionary statements	:	**Prevention:** P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. **Response:**

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Hexaboron dizinc undecaoxide	12767-90-7	>= 1 - < 5

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Get medical advice/ attention if you feel unwell.

If inhaled : Move the victim to fresh air.
Give oxygen or artificial respiration if needed.
Get immediate medical advice/ attention.
Never give anything by mouth to an unconscious person.

In case of skin contact : Wash thoroughly with soap and water for 15 minutes. If skin irritation occurs, seek medical attention.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Get medical attention immediately if irritation develops and persists.

If swallowed : Do NOT induce vomiting.
Get immediate medical advice/ attention.

Most important symptoms and effects, both acute and delayed : The possible symptoms known are those derived from the labelling (see section 2).
No additional symptoms are known.

Notes to physician : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Water spray jet Foam
Unsuitable extinguishing media	:	Carbon dioxide (CO2) Dry powder
Specific hazards during firefighting	:	In case of fires, hazardous combustion gases are formed: Carbon monoxide (CO) Carbon dioxide (CO2) Hydrogen cyanide (hydrocyanic acid) Phosphorus oxides (eg Phosphorus pentoxide) Emits toxic fumes under fire conditions. This product presents no unusual fire or explosion hazards while sealed in a shipping container. During usage, if a dust cloud is generated, organic powders have the potential to be explosive with static spark or flame initiation.
Further information	:	Exercise caution when fighting any chemical fire. Use NIOSH approved self-contained breathing apparatus and full protective clothing.
Special protective equipment for firefighters	:	Self-contained breathing apparatus

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Avoid dust formation. Keep away sources of ignition. Use respiratory protection if exposed to vapours/dust/aerosols. Wear suitable protective clothing. Wearing appropriate personal protective equipment, contain spill and collect into a suitable container. Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.
Environmental precautions	:	The product should not be allowed to enter drains, water courses or the soil.
Methods and materials for containment and cleaning up	:	Take up mechanically Avoid dust formation. Take measures to prevent the build up of electrostatic charge. Risk of dust explosion. Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Keep away sources of ignition. Dust can form an explosive mixture in air.
Advice on safe handling	:	Avoid dust formation. Keep away from sources of ignition. Lead off electrostatic charges. Avoid inhalation, ingestion and contact with skin and eyes. Wash thoroughly after handling.
Conditions for safe storage	:	Protect from moisture.
Further information on storage conditions	:	Store in original container. Keep container tightly closed. Store in a cool, dry, well-ventilated area. Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care.
Materials to avoid	:	Take precautionary measures against static discharges.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures	:	A system of local and/or general exhaust is recommended where employee exposures are at or above Occupational Exposure Limits (OEL).

Personal protective equipment

Respiratory protection	:	Use NIOSH/MSHA approved respirators following manufacturer's recommendations where dust or fume may be generated.
Hand protection Remarks	:	Butyl Rubber, PVC Or Neoprene.
Eye protection	:	Safety glasses with side-shields
Skin and body protection	:	Wear protective clothing, including long sleeves and gloves, to prevent skin contact.
Protective measures	:	Observe the usual precautions for handling chemicals. Do not breathe dust.
Hygiene measures	:	Wash hands before breaks and at the end of workday. Use protective skin cream before handling the product. Take off immediately all contaminated clothing and wash it before reuse.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	powder
Colour	:	white
Odour	:	odourless
Odour Threshold	:	Not tested
pH	:	4 (68 °F / 20 °C) Concentration: 10 %
Melting point/range	:	Decomposes before melting.
Boiling point/boiling range	:	Not applicable Decomposes below the boiling point.
Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	The product is not flammable. Method: Flammability (solids)
Self-ignition	:	Method: Expert judgement The substance or mixture is not classified as pyrophoric. > 518 °F / > 270 °C Method: VDI 2263 (Grewer) The substance or mixture is not classified as self heating.
Burning number	:	2 (68 °F / 20 °C) Method: VDI 2263-1 Short flaring up without spreading 2 (212 °F / 100 °C) Method: VDI 2263-1 Short flaring up without spreading
Upper explosion limit / upper flammability limit	:	not determined
Lower explosion limit / Lower flammability limit	:	not determined
Vapour pressure	:	Not applicable
Relative vapour density	:	no data available
Relative density	:	Not applicable
Density	:	1.5 g/cm3 (68 °F / 20 °C)

Bulk density	:	no data available
Solubility(ies)		
Water solubility	:	< 10 g/l (68 °F / 20 °C)
Partition coefficient: n-octanol/water	:	not determined
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	The substance or mixture is not classified self-reactive.
Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive Not explosive Method: EEC L251,A.14. 1984 * thermal
Oxidizing properties	:	Method: Expert judgement The product does not contain organic peroxide-groups which result from either the manufacturing process or from added ingredients. The substance or mixture is not classified as oxidizing. Method: Regulation (EC) No. 440/2008, Annex, A.17 GLP: no
Self-heating substances	:	no data available
Surface tension	:	This property is not applicable for mixtures.
Molecular weight	:	no data available
Dust explosion class	:	St1
Metal corrosion rate	:	Not applicable
Minimum ignition energy	:	no data available
Particle size	:	no data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable

Possibility of hazardous reactions	:	Dust can form an explosive mixture in air. The substance or mixture does not emit flammable gases in contact with water. Not corrosive to metals
Conditions to avoid	:	Temperatures exceeding thermal stability. High concentration of powders. Electrostatic charges. Keep away from heat and sources of ignition.
Incompatible materials	:	not known
Hazardous decomposition products	:	The product does not contain any chemical groups which suggest self-reactive properties, nor is the estimated SADT less than 75 °C, nor is the exothermic decomposition energy higher than 300 J/g. No decomposition if stored and applied as directed.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Skin contact
Inhalation

Acute toxicity

Product:

Acute oral toxicity	:	LD50: > 2,000 mg/kg
Acute inhalation toxicity	:	Remarks: not tested.
Acute dermal toxicity	:	Remarks: not tested.

Components:

Hexaboron dizinc undecaoxide:

Acute oral toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg Method: Other GLP: yes
Acute inhalation toxicity	:	LC50 (Rat, male and female): ca. 1.5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 GLP: yes Assessment: The substance or mixture has no acute inhalation toxicity Remarks: By analogy with a product of similar composition
Acute dermal toxicity	:	LD50 (Rabbit, male and female): > 5,000 mg/kg Method: OECD Test Guideline 402

GLP: yes

Skin corrosion/irritation

Product:

Remarks : no data available

Components:

Hexaboron dizinc undecaoxide:

Species : Rabbit
Exposure time : 4 h
Method : OECD Test Guideline 404
Result : No skin irritation
GLP : yes

Serious eye damage/eye irritation

Product:

Result : slight irritant effect - does not require labelling

Components:

Hexaboron dizinc undecaoxide:

Species : Rabbit
Result : Irritating to eyes.
Exposure time : 24 h
Method : Other
GLP : yes

Respiratory or skin sensitisation

Product:

Remarks : not tested.

Components:

Hexaboron dizinc undecaoxide:

Test Type : Buehler Test
Exposure routes : Dermal
Species : Guinea pig
Method : OECD Test Guideline 406
Result : Not a skin sensitizer.
GLP : yes
Remarks : By analogy with a product of similar composition

Assessment : Causes serious eye irritation.

Germ cell mutagenicity

Product:

Germ cell mutagenicity - : No information available.

Assessment

Components:

Hexaboron dizinc undecaoxide:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Concentration: 1 - 1000 µg/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: no
Remarks: By analogy with a product of similar composition

Test Type: In vitro gene mutation study in mammalian cells
Test system: mouse lymphoma cells
Concentration: 0,1 - 5000 µg/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes
Remarks: By analogy with a product of similar composition

Germ cell mutagenicity - Assessment : In vitro tests showed mutagenic effects

Carcinogenicity

Product:

Carcinogenicity - Assessment : No information available.

Components:

Hexaboron dizinc undecaoxide:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Components:

Hexaboron dizinc undecaoxide:

Effects on fertility : Test Type: Fertility

Species: Rat, male and female
Strain: wistar
Application Route: oral (gavage)
Dose: 50 - 100 - 200 - 375 mg/kg
General Toxicity - Parent: NOAEL: ca. 85 mg/kg body weight
Method: Other
GLP: yes

Effects on foetal development : Test Type: Pre-natal
Species: Rat
Strain: Sprague-Dawley
Application Route: oral (gavage)
Dose: 100 -120 - 150 mg/kg
General Toxicity Maternal: NOAEL: <= 128 mg/kg body weight
Teratogenicity: NOAEL: < 85 mg/kg body weight
Method: OECD Test Guideline 414
GLP: yes

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

STOT - single exposure

Product:

Remarks : not available

Components:

Hexaboron dizinc undecaoxide:

Remarks : no data available

STOT - repeated exposure

Product:

Remarks : not available

Components:

Hexaboron dizinc undecaoxide:

Remarks : Based on available data, the classification criteria are not met.

Repeated dose toxicity

Product:

Remarks : not tested.

Components:

Hexaboron dizinc undecaoxide:

Species : Rat, male and female
NOAEL : ca. 85 mg/kg
Application Route : oral (gavage)

Exposure time	:	92 d
Number of exposures	:	daily
Dose	:	50 - 100 - 200 - 375 mg/kg
Control Group	:	yes
Method	:	OECD Test Guideline 408
GLP	:	yes

Species	:	Rat, male and female
NOAEL	:	ca. 0.007 mg/l
Application Route	:	Inhalation
Exposure time	:	13 w
Number of exposures	:	6 hours/day, 5 days/week
Dose	:	1 - 3 - 10 - 50 - 200 mg/m3
Method	:	OECD Test Guideline 413
GLP	:	yes
Remarks	:	By analogy with a product of similar composition

Repeated dose toxicity - Assessment	:	Causes serious eye irritation.

Aspiration toxicity

Product:

no data available

Components:

Hexaboron dizinc undecaoxide:

No aspiration toxicity classification

Experience with human exposure

Product:

General Information	:	The possible symptoms known are those derived from the labelling (see section 2).

Further information

Product:

Remarks	:	The product has not been tested. The information is derived from the properties of the individual components. The classification was made by the conventional (calculation) method of the CLP Regulation (EC) No 1272/2008.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	:	Remarks: no data available
Toxicity to daphnia and other	:	

aquatic invertebrates Remarks: no data available

Toxicity to algae/aquatic plants : Remarks: not tested.

Toxicity to microorganisms : Remarks: not tested.

Components:

Hexaboron dizinc undecaoxide:

Toxicity to fish : LC50 (Fish): 0,112 - 2,92 mg Zn/l
Exposure time: 96 h
Test Type: static test
Analytical monitoring: no
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

LC50 (Fish): 74 mg B/l
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
Method: Other
GLP: yes
Remarks: By analogy with a product of similar composition

LC50 (Oncorhynchus tshawytscha (chinook salmon)): 725 mg B/l
Exposure time: 96 h
Test Type: static test
Analytical monitoring: no data available
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

Toxicity to daphnia and other aquatic invertebrates : (other aquatic crustacea): 0,14 - 6 mg Zn/l
Exposure time: 24 h
Test Type: static test
Analytical monitoring: yes
Test substance: other TS
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

(other aquatic crustacea): 12 - 27,1 mg Zn/l
Exposure time: 24 h
Test Type: static test
Analytical monitoring: yes
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

(other aquatic crustacea): 25,05 - 80,06 mg B/l

Exposure time: 96 h
Test Type: semi-static test
Analytical monitoring: yes
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

(Daphnia magna (Water flea)): 133 mg B/l
Exposure time: 48 h
Test Type: static test
Analytical monitoring: no
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

Toxicity to algae/aquatic plants : NOEC (Pseudokirchneriella subcapitata (green algae)): 0,0049 - 0,124 mg Zn/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: No information available.
Remarks: By analogy with a product of similar composition

NOEC (algae): 0,1902 mg Zn/l
End point: Growth rate
Exposure time: 48 h
Test Type: semi-static test
Analytical monitoring: yes
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

NOEC (algae): 0,06 mg Zn/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Analytical monitoring: no data available
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

NOEC (algae): 0,0228 - >0,0604 mg Zn/l
End point: Other
Exposure time: 28 d
Test Type: static test
Analytical monitoring: yes
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

NOEC (Pseudokirchneriella subcapitata (green algae)): 17,5 mg B/l

End point: Growth rate
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes
Remarks: By analogy with a product of similar composition

NOEC (algae): 5 - >=100 mg B/l
End point: Growth rate
Exposure time: 48 h
Test Type: static test
Analytical monitoring: no data available
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

M-Factor (Acute aquatic toxicity) : 1

Toxicity to fish (Chronic toxicity) : NOEC (Salmo trutta (brown trout)): 0,056 - 0,25 mg Zn/l
End point: Reproduction rate
Exposure time: 116 d
Test Type: flow-through test
Analytical monitoring: yes
Method: OECD Test Guideline 210
GLP: No information available.
Remarks: By analogy with a product of similar composition

NOEC (Oncorhynchus mykiss (rainbow trout)): 0,039 - 0,974 mg Zn/l
End point: Other
Exposure time: 30 d
Test Type: flow-through test
Analytical monitoring: yes
Method: OECD Test Guideline 215
GLP: No information available.
Remarks: By analogy with a product of similar composition

NOEC (Danio rerio (zebra fish)): 5,6 mg B/l
End point: Other
Exposure time: 34 d
Test Type: semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 210
GLP: yes
Remarks: By analogy with a product of similar composition

NOEC (Pimephales promelas (fathead minnow)): 11,2 mg B/l
End point: Other
Exposure time: 32 d
Test Type: semi-static test
Analytical monitoring: yes
Method: Other

GLP: no
Remarks: By analogy with a product of similar composition

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0,0056 mg Zn/l
End point: mortality
Exposure time: 24 d
Test Type: semi-static test
Analytical monitoring: yes
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

NOEC (other aquatic crustacea): 0,020 - 0,027 mg Zn/l
End point: Other
Exposure time: 90 d
Test Type: field study
Analytical monitoring: yes
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

NOEC (Daphnia magna (Water flea)): 0,073 - 0,251 mg Zn/l
End point: Reproduction rate
Exposure time: 21 d
Test Type: semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 211
GLP: No information available.
Remarks: By analogy with a product of similar composition

NOEC (other aquatic crustacea): 6,6 mg B/l
End point: Reproduction rate
Exposure time: 42 d
Test Type: semi-static test
Analytical monitoring: yes
Method: Other
GLP: no
Remarks: By analogy with a product of similar composition

NOEC (Daphnia magna (Water flea)): 10 mg B/l
End point: Reproduction rate
Exposure time: 21 d
Test Type: semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 211
GLP: yes
Remarks: By analogy with a product of similar composition

Toxicity to microorganisms : EC50 (activated sludge): 5,2 mg Zn/l
End point: Bacteria toxicity (respiration inhibition)
Exposure time: 3 h
Test Type: aquatic
Analytical monitoring: no data available
Method: OECD Test Guideline 209

GLP: No information available.
Remarks: By analogy with a product of similar composition

IC50 (activated sludge): > 10 mg Zn/l
End point: Bacteria toxicity (respiration inhibition)
Exposure time: 3 h
Test Type: aquatic
Analytical monitoring: no
Method: ISO 8192
GLP: No information available.
Remarks: By analogy with a product of similar composition

EC50 (activated sludge): > 175 mg B/l
End point: Bacteria toxicity (respiration inhibition)
Exposure time: 3 h
Test Type: aquatic
Analytical monitoring: no data available
Method: OECD Test Guideline 209
GLP: yes
Remarks: By analogy with a product of similar composition

NOEC (Bacteria): 17 - 327 mg Zn/l
End point: Bacteria toxicity (respiration inhibition)
Exposure time: 42 d
Test Type: Soil
Analytical monitoring: yes
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

NOEC (Bacteria): 1.640 mg Zn/l
Exposure time: 30 min
Test Type: Soil
Analytical monitoring: no
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

EC10 (Bacteria): 3 - 226 mg B/l
Exposure time: 28 d
Test Type: Soil
Analytical monitoring: yes
Method: Other
GLP: yes
Remarks: By analogy with a product of similar composition

NOEC (Bacteria): 419,6 mg B/l
Exposure time: 28 d
Test Type: Soil
Analytical monitoring: no
Method: OECD 216
GLP: yes
Remarks: By analogy with a product of similar composition

Toxicity to soil dwelling organisms : NOEC (Collembola (soil-dwelling springtail)): 32 - 1.000 mg Zn/kg
Exposure time: 28 d
End point: Reproduction
Method: ISO 11267
GLP: No information available.
Remarks: By analogy with a product of similar composition

NOEC (Eisenia fetida (earthworms)): 100 - 1.000 mg Zn/kg
Exposure time: 28 d
End point: Reproduction
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

Test Type: artificial soil
NOEC (other soil dwelling worm): 1.634 mg Zn/kg
Exposure time: 42 d
End point: Reproduction
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

Test Type: artificial soil
NOEC (Eisenia sp.): 19,8 - >78,8 mg B/kg
Exposure time: 63 d
End point: Reproduction
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

Test Type: artificial soil
NOEC (Collembola (soil-dwelling springtail)): 21,9 - 87,5 mg B/kg
Exposure time: 35 d
End point: Reproduction
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

Test Type: artificial soil
NOEC (Eisenia sp.): 52,5 - 136,2 mg B/kg
Exposure time: 56 d
End point: Reproduction
Method: OECD Test Guideline 222
GLP: No information available.
Remarks: By analogy with a product of similar composition

Plant toxicity : NOEC: 32 - 100 mg Zn/kg
Exposure time: 24 d
End point: Growth
Species: other terrestrial plant
Analytical monitoring: no
Method: OECD Guide-line 208

GLP: No information available.
Remarks: By analogy with a product of similar composition

NOEC: 100 - 400 mg Zn/kg
Exposure time: 35 d
End point: Growth
Species: other terrestrial plant
Analytical monitoring: no data available
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

NOEC: 10 - >= 40 Bor mg/kg dry weight (d.w.)
Exposure time: 90 d
End point: Growth
Species: Medicago sativa L.
Analytical monitoring: yes
Method: Other
GLP: no
Remarks: By analogy with a product of similar composition

NOEC: 26,4 - 84 mg B/kg
Exposure time: 7 d
End point: Growth
Species: other terrestrial plant
Analytical monitoring: yes
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

Sediment toxicity : NOEC (Hyalella azteca (Scud)): 32 mg/kg dry weight (d.w.)
Analytical monitoring: yes
Sediment: Natural sediment
Exposure duration: 28 d
Basis for effect: Growth
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

NOEC (Chironomus tentans): 639 mg/kg dry weight (d.w.)
Analytical monitoring: yes
Sediment: Natural sediment
Exposure duration: 20 d
Basis for effect: Growth
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

NOEC: 1135 mg/kg dry weight (d.w.)
Analytical monitoring: yes
Sediment: Natural sediment
Exposure duration: 28 h
Basis for effect: Reproduction
Method: Other

GLP: No information available.
Remarks: By analogy with a product of similar composition

NOEC: 180 mg/kg dry weight (d.w.)
Analytical monitoring: yes
Sediment: artificial soil
Exposure duration: 28 d
Basis for effect: Growth
Method: Other
GLP: yes
Remarks: By analogy with a product of similar composition

Toxicity to terrestrial organisms : Remarks: Not applicable

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Persistence and degradability

Product:

Biodegradability : Remarks: Not applicable

Components:

Hexaboron dizinc undecaoxide:

Biodegradability : Remarks: Not applicable

Physico-chemical removability : Remarks: Inorganic product, cannot be eliminated from the water by biological purification processes.

Stability in water : Remarks: Not applicable

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No information is available on the mixture "as is". If relevant information is available on the substances listed in Chapter 3, it is reported here.

Components:

Hexaboron dizinc undecaoxide:

Bioaccumulation : Species: Other
Bioconcentration factor (BCF): 0.02 - 3.3
Concentration: approx. 50 mg Zn/kg
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

Species: Water organisms
Bioconcentration factor (BCF): 38 - 28,960
Exposure time: 28 d
Concentration: 0,0025 - 3162 mg Zn/l
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

Species: Water organisms
Bioconcentration factor (BCF): 116 - 60,960
Exposure time: 21 d
Concentration: 0,0025 - 3162 mg Zn/l
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

Species: Other
Bioconcentration factor (BCF): 0.02 - 0.04
Exposure time: 48 d
Concentration: approx. 1600 mg B/kg
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

Species: Fish
Bioconcentration factor (BCF): 0.52 - 10.5
Exposure time: 21 d
Concentration: 10 mg B/l
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

Species: Other
Bioconcentration factor (BCF): 5 - 123
Exposure time: 120 d
Concentration: < 0,05 - 4,9 mg B/kg
Method: Other
GLP: No information available.
Remarks: By analogy with a product of similar composition

Mobility in soil

Product:

Distribution among environmental compartments : Remarks: not available

Components:

Hexaboron dizinc undecaoxide:

Distribution among environmental compartments : adsorption
Medium: water - soil
log Koc: < 1

Remarks: Not applicable
Not expected to adsorb on soil.

Other adverse effects

Product:

Environmental fate and pathways	:	Remarks: no data available
Additional ecological information	:	No data is available on the product itself.

Components:

Hexaboron dizinc undecaoxide:

Environmental fate and pathways	:	not available
Results of PBT and vPvB assessment	:	Remarks: Not applicable
Additional ecological information	:	Do not allow to enter ground water, waterways or waste water.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

RCRA - Resource Conservation and Recovery Authorization Act	:	This product, if discarded as sold, is not a Federal RCRA hazardous waste.
Waste Code	:	NONE
Waste from residues	:	Dispose of any waste residues according to prescribed federal, state and local guidelines, e.g. appropriately permitted chemical waste incinerator.
Contaminated packaging	:	Packaging that cannot be cleaned should be disposed of as product waste

SECTION 14. TRANSPORT INFORMATION

DOT	not restricted
IATA	not restricted
IMDG	not restricted

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Combustible dust
Germ cell mutagenicity
Reproductive toxicity

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Hexaboron dizinc undecaoxide	12767-90-7	>= 1 - < 5 %

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.
This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

Hexaboron dizinc undecaoxide	12767-90-7	>= 1 - < 5 %

This product does not contain any priority pollutants related to the U.S. Clean Water Act

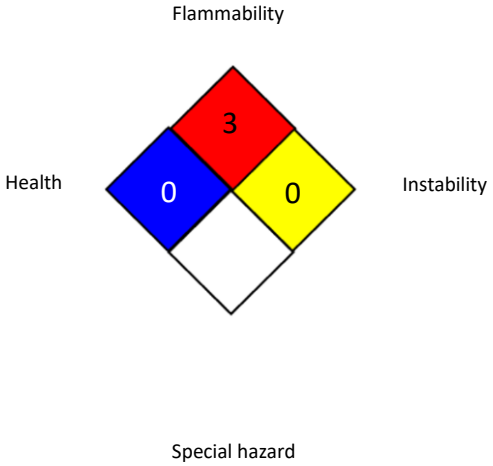
The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory, All components are compliant with the TSCA Inventory Notification (Active) rule.

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United

Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Observe national and local legal requirements
Handle with care. Organic dusts have the potential to be explosive with static spark or flame initiation.
For additional information, contact Product Stewardship.

Revision Date : 02/27/2023

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