

SAFETY DATA SHEET BE-3S BACTERICIDE

according to Regulation (EC) No. 453/2010

Revision Date: 09-Apr-2018
Preparation Date 09-Apr-2018

Revision Number: 3
Internal ID Code HB000119

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product Identifier

Product Name BE-3S BACTERICIDE
Internal ID Code HB000119

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Biocide
Sector of uses SU2 - Mining, (including offshore industries)
Product category(ies) PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents, other unspecific
Process categories PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises

1.3. Details of the supplier of the safety data sheet

Halliburton Energy Services
Halliburton House, Howemoss Place
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
United Kingdom
+44 1224 776888

www.halliburton.com

For further information, please contact

E-mail Address: fdunexchem@halliburton.com

1.4. Emergency telephone number

+44 8 08 189 0979 / 1-760-476-3961

Global Incident Response Access Code: 334305

Contract Number: 14012

Emergency telephone - Article 45 - (EC)1272/2008	
Turkey	Ulusal Zehir Danisma Merkezi (UZEM) :114 Acil Saglik Hizmetleri : 112
Europe	112
Bulgaria	Bulgarian poison centre: +359 2 915-44-09 or +359 2 915-43-46
Croatia	Centar za kontrolu otrovanja (CKO): (+385 1) 23-48-342 (Poison Control Center (PCC) - Institute for Medical Research and Occupational Health)
Cyprus	00357 22 88 7171
Denmark	Poison Control Hotline (DK): +45 82 12 12 12
France	ORFILA (FR): + 01 45 42 59 59
Germany	Poison Center Berlin (DE): +49 030 30686 790
Italy	Poison Center, Milan (IT): +39 02 6610 1029
Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
Norway	Poisons Information (NO):+ 47 22 591300
Poland	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
Portugal	CIAV - Centro de Informação Antivenenos (Portuguese Poison Centre): + 351 213 303 271
Romania	+40 21 318 36 06
Spain	Poison Information Service (ES): +34 91 562 04 20

SAFETY DATA SHEET
BE-3S BACTERICIDE
according to Regulation (EC) No. 453/2010

Revision Date: 09-Apr-2018
Preparation Date 09-Apr-2018

Revision Number: 3
Internal ID Code HB000119

United Kingdom | NHS Direct (UK): +44 0845 46 47

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute Oral Toxicity	Category 3 - (H301)
Acute inhalation toxicity - dust/mist	Category 2 - (H330)
Skin Corrosion/Irritation	Category 2 - (H315)
Serious Eye Damage/Irritation	Category 1 - (H318)
Skin Sensitization	Category 1 - (H317)
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - (H335)
Acute Aquatic Toxicity	Category 1 - (H400)
Chronic Aquatic Toxicity	Category 3 - (H412)

2.2. Label Elements

Hazard Pictograms



Signal Word:

Danger

Hazard Statements:

H301 - Toxic if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H330 - Fatal if inhaled
H335 - May cause respiratory irritation
H400 - Very toxic to aquatic life
H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements:

P280 - Wear protective gloves/eye protection/face protection
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

Contains

Substances

2,2 Dibromo-3-nitrilopropionamide
2-Monobromo-3-nitrilopropionamide

CAS Number

10222-01-2
1113-55-9

2.3. Other Hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

SAFETY DATA SHEET
BE-3S BACTERICIDE
according to Regulation (EC) No. 453/2010

Revision Date: 09-Apr-2018
Preparation Date 09-Apr-2018

Revision Number: 3
Internal ID Code HB000119

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance

Substances	EINECS	CAS Number	PERCENT (w/w)	EU - CLP Substance Classification	REACH Reg. No
2,2-Dibromo-3-nitrilopropionamide	233-539-7	10222-01-2	60 - 100%	Acute Tox. 3 (H301) Acute Tox. 2 (H330) Skin Corr. 1 (H314) Eye Corr. 1 (H318) Skin Sens. 1 (H317) STOT SE 3 (H335) Aquatic Acute 1 (H400)	No data available
2-Monobromo-3-nitrilopropionamide		1113-55-9	1 - 5%	Acute Tox. 3 (H301) Acute Tox. 2 (H330) Skin Irrit. 2 (H315) Eye Corr. 1 (H318) Skin Sens. 1 (H317) STOT SE 3 (H335) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available

For the full text of the H-phrases mentioned in this Section, see Section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation

If inhaled, move victim to fresh air and seek medical attention.

Eyes

Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

Skin

In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Get medical attention if irritation persists. Remove contaminated clothing and laundry before reuse.

Ingestion

If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person. Rinse mouth with water many times. Get immediate medical attention.

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

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause allergic skin reaction. May cause respiratory irritation. Toxic if swallowed. Fatal if inhaled.

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

Notes to Physician

Treat symptomatically

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

5.2. Special hazards arising from the substance or mixture

Special exposure hazards in a fire

SAFETY DATA SHEET
BE-3S BACTERICIDE
according to Regulation (EC) No. 453/2010

Revision Date: 09-Apr-2018
Preparation Date 09-Apr-2018

Revision Number: 3
Internal ID Code HB000119

Decomposition in fire may produce harmful gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

5.3. Advice for firefighters

Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid creating and breathing dust. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Evacuate all persons from the area.
See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas. Consult local authorities.

6.3. Methods and material for containment and cleaning up

Scoop up and remove.

6.4. Reference to other sections

See Section 8 and 13 for additional information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Wear appropriate respirator when opening containers. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Keep container closed when not in use. Store in a cool, dry location. Store in a well ventilated area. Store away from oxidizers. Store away from reducing agents. Store away from direct sunlight. Product has a shelf life of 6 months.

7.3. Specific end use(s)

Exposure scenario

No information available

Other Guidelines

No information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Substances	CAS Number	EU	UK	Netherlands	France
2,2-Dibromo-3-nitropropionamide	10222-01-2	Not applicable	Not applicable	Not applicable	Not applicable
2-Monobromo-3-nitropropionamide	1113-55-9	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Germany	Spain	Portugal	Finland
2,2-Dibromo-3-nitropropionamide	10222-01-2	Not applicable	Not applicable	Not applicable	Not applicable
2-Monobromo-3-nitropropionamide	1113-55-9	Not applicable	Not applicable	Not applicable	Not applicable

SAFETY DATA SHEET
BE-3S BACTERICIDE
 according to Regulation (EC) No. 453/2010

Revision Date: 09-Apr-2018
 Preparation Date 09-Apr-2018

Revision Number: 3
 Internal ID Code HB000119

amide			
-------	--	--	--

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
2,2-Dibromo-3-nitropropionamide	10222-01-2	Not applicable	Not applicable	Not applicable	Not applicable
2-Monobromo-3-nitropropionamide	1113-55-9	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
2,2-Dibromo-3-nitropropionamide	10222-01-2	Not applicable	Not applicable	Not applicable	Not applicable
2-Monobromo-3-nitropropionamide	1113-55-9	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus
2,2-Dibromo-3-nitropropionamide	10222-01-2	Not applicable	Not applicable	Not applicable	Not applicable
2-Monobromo-3-nitropropionamide	1113-55-9	Not applicable	Not applicable	Not applicable	Not applicable

Derived No Effect Level (DNEL) No information available
Worker

General Population

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering Controls

Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Personal protective equipment

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection

If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.

Hand Protection

Organic vapor respirator with a dust/mist filter. (A2P2/P3)
 Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. (>= 0.35 mm thickness)
 This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types.

Skin Protection

Rubber apron. Long-sleeve shirt, long pants, and shoes plus socks.

Eye Protection

Dust proof goggles.

Other Precautions

Eyewash fountains and safety showers must be easily accessible. Rubber boots

SAFETY DATA SHEET
BE-3S BACTERICIDE
according to Regulation (EC) No. 453/2010

Revision Date: 09-Apr-2018
Preparation Date 09-Apr-2018

Revision Number: 3
Internal ID Code HB000119

Environmental Exposure Controls Do not allow material to contaminate ground water system

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State: Powder	Color: White to yellow
Odor: Slight Pungent	Odor Threshold: No information available

<u>Property</u>	<u>Values</u>
Remarks/ - Method	
pH:	4.7-4.9
Freezing Point / Range	No data available
Melting Point / Range	No data available
Boiling Point / Range	No data available
Flash Point	> 100 °C / > 212 °F Closed cup
Flammability (solid, gas)	No data available
Upper flammability limit	No data available
Lower flammability limit	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	0.934 (air = 1)
Specific Gravity	2.2
Water Solubility	Partly soluble
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%) No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

Will Not Occur

10.4. Conditions to avoid

Keep away from heat, sparks and flame.

10.5. Incompatible materials

Strong oxidizers. Reducing agents.

10.6. Hazardous decomposition products

Oxides of nitrogen. Bromine. Hydrogen bromide. Methyl and ethyl bromide. Cyanogen bromide. Carbon monoxide and carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute Toxicity

Inhalation

Fatal if inhaled. Causes severe respiratory irritation.

Eye Contact

Causes severe eye irritation which may damage tissue.

SAFETY DATA SHEET
BE-3S BACTERICIDE
 according to Regulation (EC) No. 453/2010

Revision Date: 09-Apr-2018
 Preparation Date 09-Apr-2018

Revision Number: 3
 Internal ID Code HB000119

Skin Contact
Ingestion

Causes severe burns. May cause an allergic skin reaction.
 Toxic if swallowed. Causes burns of the mouth, throat and stomach.

Chronic Effects/Carcinogenicity

No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	235 mg/kg 206.5 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	0.32 mg/L (rat, mist, 4hr)
2-Monobromo-3-nitrilopropionamide	1113-55-9	206.5 mg/kg (Rat) (similar substance)	>2000 mg/kg (Rabbit) (similar substance)	0.32 mg/L (Rat) 4h (similar substance)

Substances	CAS Number	Skin corrosion/irritation
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	Skin, rabbit: Causes moderate skin irritation.
2-Monobromo-3-nitrilopropionamide	1113-55-9	Skin, rabbit: Causes moderate skin irritation. (similar substances)

Substances	CAS Number	Serious eye damage/irritation
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	Eye, rabbit: Causes moderate eye irritation
2-Monobromo-3-nitrilopropionamide	1113-55-9	Eye, rabbit: Causes severe eye irritation (similar substances)

Substances	CAS Number	Skin Sensitization
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	Skin sensitizer in guinea pig.
2-Monobromo-3-nitrilopropionamide	1113-55-9	Skin sensitizer in guinea pig. (similar substances)

Substances	CAS Number	Respiratory Sensitization
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	No information available
2-Monobromo-3-nitrilopropionamide	1113-55-9	No information available

Substances	CAS Number	Mutagenic Effects
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	Not regarded as mutagenic.
2-Monobromo-3-nitrilopropionamide	1113-55-9	Not regarded as mutagenic. (similar substances)

Substances	CAS Number	Carcinogenic Effects
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	No information available
2-Monobromo-3-nitrilopropionamide	1113-55-9	No information available

Substances	CAS Number	Reproductive toxicity
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	No data of sufficient quality are available.

SAFETY DATA SHEET
BE-3S BACTERICIDE
 according to Regulation (EC) No. 453/2010

Revision Date: 09-Apr-2018
 Preparation Date 09-Apr-2018

Revision Number: 3
 Internal ID Code HB000119

de		
2-Monobromo-3-nitrilopropionamide	1113-55-9	No data of sufficient quality are available.

Substances	CAS Number	STOT - single exposure
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	May cause respiratory irritation.
2-Monobromo-3-nitrilopropionamide	1113-55-9	May cause respiratory irritation. (similar substances)

Substances	CAS Number	STOT - repeated exposure
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	No significant toxicity observed in animal studies at concentration requiring classification.
2-Monobromo-3-nitrilopropionamide	1113-55-9	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	CAS Number	Aspiration hazard
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	Not applicable
2-Monobromo-3-nitrilopropionamide	1113-55-9	Not applicable

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity effects

Very toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	EC50 (96 h) 0.3 mg/L (Selenastrum capricornutum)	LC50 (96 h) 1 mg/L (Rainbow trout) MATC (NA)=0.47 mg/L (Rainbow trout)	No information available	LC50 (48 h) 0.9 mg/L (Daphnia magna) EC50 (48 h) 0.72 mg/L (Mysidopsis Bahia)
2-Monobromo-3-nitrilopropionamide	1113-55-9	EC50 (96h) 0.3 mg/L (Selenastrum capricornutum)	LC50 1 mg/L (Rainbow trout)(similar substance) MATC 0.47 - 0.98 mg/L (Rainbow trout)(similar substance)	No information available	EC50 0.9 mg/L (Daphnia magna)(similar substance) EC50 0.72 mg/L (Mysidopsis bahia)(similar substance) EC50 < 0.07 mg/L (Crassostrea virginica)(similar substance) NOEL < 0.02 mg/L (Daphnia magna)(similar substance)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	No information available
2-Monobromo-3-nitrilopropionamide	1113-55-9	No information available

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow

SAFETY DATA SHEET
BE-3S BACTERICIDE
according to Regulation (EC) No. 453/2010

Revision Date: 09-Apr-2018
Preparation Date 09-Apr-2018

Revision Number: 3
Internal ID Code HB000119

2,2-Dibromo-3-nitrilopropionamide	10222-01-2	BCF=13
2-Monobromo-3-nitrilopropionamide	1113-55-9	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	No information available
2-Monobromo-3-nitrilopropionamide	1113-55-9	No information available

12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

Substances	PBT and vPvB assessment
2,2-Dibromo-3-nitrilopropionamide	Not PBT/vPvB
2-Monobromo-3-nitrilopropionamide	Not PBT/vPvB

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods

Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging

Follow all applicable national or local regulations.

SECTION 14: Transport information

IMDG/IMO

UN Number UN2928
UN proper shipping name: Toxic Solid, Corrosive, Organic, N.O.S. (2, 2-Dibromo-3-Nitrilopropionamide)
Transport Hazard Class(es): 6.1 (8)
Packing Group: II
Environmental Hazards: Marine Pollutant

ADN

UN Number UN2811
UN proper shipping name: Toxic Solid, Organic, N.O.S. (2, 2-Dibromo-3-Nitrilopropionamide)
Transport Hazard Class(es): 6.1
Packing Group II
Environmental Hazards: Marine Pollutant Marine Pollutant

ADR/RID

UN Number UN2811
UN proper shipping name: Toxic Solid, Organic, N.O.S. (2, 2-Dibromo-3-Nitrilopropionamide)
Transport Hazard Class(es): 6.1
Packing Group II
Environmental Hazards: Marine Pollutant Marine Pollutant

IATA/ICAO

UN Number UN2928
UN proper shipping name: Toxic Solid, Corrosive, Organic, N.O.S. (2, 2-Dibromo-3-Nitrilopropionamide)

SAFETY DATA SHEET
BE-3S BACTERICIDE
according to Regulation (EC) No. 453/2010

Revision Date: 09-Apr-2018
Preparation Date 09-Apr-2018

Revision Number: 3
Internal ID Code HB000119

Transport Hazard Class(es): 6.1 (8)
Packing Group: II
Environmental Hazards: Marine Pollutant

- 14.1. UN Number** UN2811
- 14.2. UN proper shipping name:** Toxic Solid, Organic, N.O.S. (2, 2-Dibromo-3-Nitrilopropionamide)
- 14.3. Transport Hazard Class(es):** 6.1
- 14.4. Packing Group** II
- 14.5. Environmental Hazards:** Marine Pollutant Marine Pollutant
- 14.6. Special Precautions for User** None
- 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

EINECS (European Inventory of Existing Chemical Substances) This product does not comply with EINECS

US TSCA Inventory All components listed on inventory or are exempt.

Canadian Domestic Substances List (DSL) Product contains one or more components not listed on the inventory.

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

Germany, Water Endangering Classes (WGK) WGK 2: Hazard to waters.

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.
Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

Substances	CAS Number	Seveso III	TA LUFT
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	Not applicable	5.2.4 Class II

15.2. Chemical safety assessment

No information available

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3

H301 - Toxic if swallowed

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H318 - Causes serious eye damage

SAFETY DATA SHEET
BE-3S BACTERICIDE
according to Regulation (EC) No. 453/2010

Revision Date: 09-Apr-2018
Preparation Date 09-Apr-2018

Revision Number: 3
Internal ID Code HB000119

H330 - Fatal if inhaled
H335 - May cause respiratory irritation
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
H412 - Harmful to aquatic life with long lasting effects

Key or legend to abbreviations and acronyms used in the safety data sheet

bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
ErC50 – Effective Concentration growth rate 50%
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL0 – Lethal Loading 0%
LL50 – Lethal Loading 50%
MARPOL – International Convention for the Prevention of Pollution from Ships
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NOEC – No Observed Effect Concentration
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
PC – Chemical Product category
PEL – Permissible Exposure Limit
ppm – parts per million
PROC – Process category
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
STEL – Short Term Exposure Limit
SU – Sector of Use category

Key literature references and sources for data

www.ChemADVISOR.com/

Revision Date: 09-Apr-2018

Revision Note

SDS sections updated:

2

This safety data sheet complies with the requirements of Regulation (EC) No. 2015/830

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet