HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

HAI-85M ACID INHIBITOR

Revision Date: 11-Mar-2014 **Revision Number:** 25

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product Identifier

Product Name HAI-85M ACID INHIBITOR

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

Recommended Use Corrosion Inhibitor

Sector of use Refer to the Annex for a listing of uses.

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

Emergency Phone Number: +44 1224 795277 or +1 281 575 5000

www.halliburton.com

For further information, please contact

E-Mail address: fdunexchem@halliburton.com

1.4 Emergency telephone number

+44 1224 795277 or +1 281 575 5000

Emergency telephone - §45 - (EC)1272/2008	
Europe	**112**
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
Spain	Poison Information Service (ES): +34 91 562 04 20
United Kingdom	NHS Direct (UK): +44 0845 46 47

2. Hazards Identification

2.1 Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Acute Oral Toxicity	Category 4 - (H302)
Acute Toxicity - Dermal	Category 4 - (H312)
Skin Corrosion / irritation	Category 1 - (H314)
Serious Eye Damage / Eye Irritation	Category 1 - (H318)
Skin Sensitization	Category 1 - (H317)
Reproductive Toxicity	Category 1B - (H360D)

Specific Target Organ Toxicity - (Single Exposure)	Category 3 - (H336)
Specific Target Organ Toxicity - (Repeated Exposure)	Category 2 - (H373)
Chronic Aquatic Toxicity	Chronic 2 - (H411)
Flammable liquids	Category 3 - (H226)

Classification according to EU Directives 67/548/EEC or 1999/45/EC
For the full text of the R-phrases mentioned in this Section, see Section 16

Classification
C - Corrosive.
Xn - Harmful.

Risk Phrases
R10 Flammable.
R34 Causes burns.
R43 May cause sensitization by skin contact.
R61 May cause harm to the unborn child.
R21/22 Harmful in contact with skin and if swallowed.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2 Label Elements

Hazard Pictograms

Signal Word **Danger**

Hazard Statements
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H360D - May damage the unborn child
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H336 - May cause drowsiness or dizziness
H373 - May cause damage to organs through prolonged or repeated exposure
H226 - Flammable liquid and vapor
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)
P280 - Wear protective gloves/eye protection/face protection
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P310 - Immediately call a POISON CENTER or doctor/physician
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P370 + P378 - In case of fire: Use water spray for extinction

Contains

Substances	**CAS Number**
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9
Isopropanol	67-63-0
Isoquinoline, reaction products with 1-(chloromethyl)naphthalene and quinoline	68909-81-9
Dimethyl formamide	68-12-2
Propargyl alcohol	107-19-7
Copper iodide	7681-65-4

Ethyl octynol	5877-42-9
Glycol	Proprietary
Cuprous chloride	7758-89-6

2.3 Other Hazards

None known

3. Composition/information on Ingredients

Substances	EINECS	CAS Number	PERCENT (w/w)	EEC Classification	EU - CLP Substance Classification	REACH No.
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	500-024-6	9016-45-9	10 - 30%	Xi; R36/38 N; R51-53	Eye Irrit. 2 (H319) Skin Irrit. 2 (H315) Aquatic Chronic 2 (H411)	No data available
Isopropanol	200-661-7	67-63-0	10 - 30%	F; R11 Xi; R36 R67	Eye Irrit. 2 (H319) STOT SE 3 (H336) Flam. Liq. 2 (H225)	01-2119457558-25
Isoquinoline, reaction products with 1-(chloromethyl)naphthalene and quinoline	Not applicable	68909-81-9	10 - 30%	C; R34	Skin Corr. 1B (H314)	No data available
Dimethyl formamide	200-679-5	68-12-2	10 - 30%	Repr.Cat.2; R61 Xn; R20/21 Xi; R36	Acute Tox. 4 (H312) Acute Tox. 4 (H332) Eye Irrit. 2 (H319) Repr. 1B (H360D) STOT RE 2 (H373)	No data available
Propargyl alcohol	203-471-2	107-19-7	5 - 10%	R10 T; R23/24/25 C; R34 N; R51-53	Acute Tox. 3 (H301) Acute Tox. 2 (H310) Acute Tox. 2 (H330) Skin Corr. 1B (H314) Eye Dam. 1 (H318) STOT RE 2 (H373) Aquatic Chronic 2 (H411) Flam. Liq. 3 (H226)	No data available
Copper iodide	231-674-6	7681-65-4	1 - 5%	Xn; R22-48/25 Xi; 38-41 R43 N; R50/53	Acute Tox. 4 (H302) Skin Sen 1 (H317) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) STOT-RE 1 (H372) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available
Ethyl octynol	227-545-9	5877-42-9	1 - 5%	T; R27 Xn; R22 Xi; 36	Acute Tox 4 (H302) Acute Tox 2 (H310) Eye Irrit. 2 (H319) Aquatic Chronic 2 (H411)	No data available
Glycol	Listed	Proprietary	1 - 5%	Xn; R22	Acute Tox. 4 (H302) STOT RE 2 (H373)	No data available
Cuprous chloride	231-842-9	7758-89-6	0 - 1%	Xn; R21/22 Xi; R38-41 N; R50-53	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Skin Irrit. 2A (H315) Eye Dam. 1 (H318) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available

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

ACN No.	18-000000343-82-0000

4. First aid measures

4.1 Description of first aid measures

Inhalation If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Eyes In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse. Destroy or properly dispose of contaminated shoes.

Ingestion Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

4.2 Most Important symptoms and effects, both acute and delayed

May cause eye, skin, and respiratory burns. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed. May cause birth defects.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically

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

May be ignited by heat, sparks or flames. Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Avoid spraying water directly into storage containers due to danger of boilover. Decomposition in fire may produce toxic gases.

5.3 Advice for firefighters

Special Protective Equipment for Fire-Fighters

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

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas.
See Section 8 for additional information

6.2 Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3 Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

6.4 Reference to other sections

See Section 8 and 13 for additional information.

7. Handling and Storage

7.1 Precautions for Safe Handling

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

7.2 Conditions for safe storage, including any incompatibilities

Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use. Product has a shelf life of 24 months.

7.3 Specific End Use(s)

Exposure Scenario Please refer to the attached Annex for a listing of exposure scenarios.

Other Guidelines No information available

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits

Substances	CAS Number	EU	UK OEL	Netherlands	France OEL
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Not applicable	Not applicable	Not applicable	Not applicable
Isopropanol	67-63-0	Not applicable	STEL: 500 ppm STEL: 1250 mg/m³ TWA: 400 ppm TWA: 999 mg/m³	Not applicable	Not applicable
Isoquinoline, reaction products with 1-(chloromethyl)naphthalene and quinoline	68909-81-9	Not applicable	Not applicable	0,1 mg/m³	Not applicable
Dimethyl formamide	68-12-2	Not applicable	STEL: 20 ppm STEL: 61 mg/m³ TWA: 10 ppm TWA: 30 mg/m³	15 mg/m³	10 ppm
Propargyl alcohol	107-19-7	Not applicable	STEL: 3 ppm STEL: 7 mg/m³ TWA: 1 ppm TWA: 2.3 mg/m³	0,25 ppm	1 ppm
Copper iodide	7681-65-4	Not applicable	Not applicable	0,1 mg/m³	Not applicable
Ethyl octynol	5877-42-9	Not applicable	Not applicable	Not applicable	Not applicable
Glycol	Proprietary	Not applicable	STEL: 69 ppm STEL: 303 mg/m³ TWA: 23 ppm TWA: 101 mg/m³	Not applicable	Not applicable
Cuprous chloride	7758-89-6	Not applicable	Not applicable	0,1 mg/m³	Not applicable

Substances	CAS Number	Germany MAK/TRK	Spain	Portugal	Finland
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Not applicable	Not applicable	Not applicable	Not applicable
Isopropanol	67-63-0	TWA: 200 ppm TWA: 500 mg/m³ MAK: 200 ppm MAK: 500 mg/m³	500 ppm VLA-EC; 1250 mg/m³ VLA-EC VLA-ED: 400 ppm VLA-ED: 998 mg/m³	STEL: 400 ppm TWA: 200 ppm	STEL: 250 ppm STEL: 620 mg/m³ TWA: 200 ppm TWA: 500 mg/m³
Isoquinoline, reaction products with 1-(chloromethyl)naphthalene and quinoline	68909-81-9	Not applicable	Not applicable	Not applicable	Not applicable
Dimethyl formamide	68-12-2	TWA: 10 ppm TWA: 30 mg/m³ MAK: 5 ppm MAK: 15 mg/m³	VLA-ED: 10 ppm VLA-ED: 30 mg/m³	TWA: 10 ppm	STEL: 10 ppm STEL: 30 mg/m³ TWA: 5 ppm TWA: 15 mg/m³
Propargyl alcohol	107-19-7	TWA: 2 ppm TWA: 4.7 mg/m³ MAK: 2 ppm MAK: 4.7 mg/m³	VLA-ED: 1 ppm VLA-ED: 2.3 mg/m³	TWA: 1 ppm	STEL: 3 ppm STEL: 7 mg/m³ TWA: 1 ppm TWA: 2.3 mg/m³
Copper iodide	7681-65-4	MAK: 0.1 mg/m³	Not applicable	Not applicable	TWA: 1 mg/m³
Ethyl octynol	5877-42-9	Not applicable	Not applicable	Not applicable	Not applicable
Glycol	Proprietary	TWA: 10 ppm TWA: 44 mg/m³ MAK: 10 ppm MAK: 44 mg/m³	Not applicable	Not applicable	Not applicable
Cuprous chloride	7758-89-6	MAK: 0.1 mg/m³	Not applicable	Not applicable	TWA: 1 mg/m³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Not applicable	Not applicable	Not applicable	Not applicable
Isopropanol	67-63-0	Not applicable	Not applicable	Not applicable	STEL: 150 ppm STEL: 306.25 mg/m³ TWA: 100 ppm TWA: 245 mg/m³
Isoquinoline, reaction products with 1-(chloromethyl)naphthalene and quinoline	68909-81-9	Not applicable	Not applicable	Not applicable	Not applicable
Dimethyl formamide	68-12-2	Not applicable	Not applicable	Not applicable	STEL: 20 ppm STEL: 45 mg/m³ TWA: 10 ppm TWA: 30 mg/m³

Propargyl alcohol	107-19-7	Not applicable	Not applicable	Not applicable	STEL: 3 ppm STEL: 5 mg/m³ TWA: 1 ppm TWA: 2.5 mg/m³
Copper iodide	7681-65-4	Not applicable	Not applicable	Not applicable	Not applicable
Ethyl octynol	5877-42-9	Not applicable	Not applicable	Not applicable	Not applicable
Glycol	Proprietary	Not applicable	Not applicable	Not applicable	Not applicable
Cuprous chloride	7758-89-6	Not applicable	Not applicable	Not applicable	Not applicable

Substances	**CAS Number**	**Italy**	**Poland**	**Hungary**	**Czech Republic**
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Not applicable	Not applicable	Not applicable	Not applicable
Isopropanol	67-63-0	Not applicable	NDSCh: 1200 mg/m³ NDS: 900 mg/m³	TWA: 500 mg/m³ STEL: 2000 mg/m³	TWA: 500 mg/m³
Isoquinoline, reaction products with 1-(chloromethyl)naphthalene and quinoline	68909-81-9	Not applicable	0.2 mg/m³	Not applicable	Not applicable
Dimethyl formamide	68-12-2	Not applicable	NDSCh: 30 mg/m³ NDS: 15 mg/m³	TWA: 30 mg/m³ STEL: 120 mg/m³	TWA: 30 mg/m³
Propargyl alcohol	107-19-7	Not applicable	NDS: 3 mg/m³	Not applicable	Not applicable
Copper iodide	7681-65-4	Not applicable	0.2 mg/m³	STEL: 4 mg/m³	Not applicable
Ethyl octynol	5877-42-9	Not applicable	Not applicable	Not applicable	Not applicable
Glycol	Proprietary	Not applicable	NDS: 10 mg/m³	Not applicable	Not applicable
Cuprous chloride	7758-89-6	Not applicable	0.2 mg/m³	STEL: 4 mg/m³	Not applicable

Substances	**CAS Number**	**Denmark**
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Not applicable
Isopropanol	67-63-0	TWA: 200 ppm TWA: 490 mg/m³
Isoquinoline, reaction products with 1-(chloromethyl)naphthalene and quinoline	68909-81-9	Not applicable
Dimethyl formamide	68-12-2	TWA: 10 ppm TWA: 30 mg/m³
Propargyl alcohol	107-19-7	TWA: 1 ppm TWA: 2.5 mg/m³
Copper iodide	7681-65-4	Not applicable
Ethyl octynol	5877-42-9	Not applicable
Glycol	Proprietary	TWA: 2.5 ppm TWA: 11 mg/m³
Cuprous chloride	7758-89-6	Not applicable

Derived No Effect Level (DNEL)

Worker

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Hazards for the eyes - local effects
Isopropanol	500 mg/m³	Not available	Not available	Not available	888 mg/kg bw/day	Not available	Not available	Not available	Not available

General Population

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Long-term exposure - systemic effects, Oral	Acute / short term exposure - local effects, Oral	Hazards for the eyes - local effects
Isopropanol	89 mg/m³	Not available	Not available	Not available	319 mg/kg bw/day	Not available	Not available	Not available	26 mg/kg bw/day	Not available	Not available

Predicted No Effect Concentration (PNEC)

Substances	Freshwater	Marine water	Intermittent release	Sewage treatment plant	Sediment (freshwater)	Sediment (marine water)	Air	Soil	Secondary poisoning
Isopropanol	140.9 mg/L	140.9 mg/L	140.9 mg/L	2251 mg/L	552 mg/L	552 mg/L	Not available	28 mg/kg soil dw	160 mg/kg food

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	
Respiratory Protection	Organic vapor respirator. In high concentrations, supplied air respirator or a self-contained breathing apparatus.
Hand Protection	Impervious rubber gloves.
Skin Protection	Full protective chemical resistant clothing.
Eye Protection	Chemical goggles; also wear a face shield if splashing hazard exists.
Other Precautions	Eyewash fountains and safety showers must be easily accessible.
Environmental Exposure Controls	No information available

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical State:	Liquid	**Color:**	Dark black red
Odor:	Pungent	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	4
Freezing Point/Range	No data available
Melting Point/Range	No data available
Boiling Point/Range	82 °C
Flash Point	25 °C PMCC
upper flammability limit	12
lower flammability limit	2
Evaporation rate	No data available
Vapor Pressure	56.87 mmHg
Vapor Density	No data available
Specific Gravity	1.02
Water Solubility	dispersible
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	5.1
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

10. Stability and Reactivity

10.1 Reactivity
Not applicable
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.
10.6 Hazardous Decomposition Products
Oxides of nitrogen. Carbon monoxide and carbon dioxide.

11. Toxicological Information

11.1 Information on Toxicological Effects
Acute Toxicity

Inhalation This material is an anesthetic. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Eye Contact May cause eye burns.

Skin Contact Causes severe burns. May be absorbed through the skin and produce effects similar to those caused by inhalation and/or ingestion. May cause an allergic skin reaction.

Ingestion Causes burns of the mouth, throat and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions.

Chronic Effects/Carcinogenicity Prolonged or repeated exposure may cause liver, kidney and spleen damage. Contains dimethylformamide (DMF) which has been shown to cause birth defects and fetal deaths in laboratory animals. Chronic exposure to DMF may result in liver and kidney damage. DMF has been classified as a b2 carcinogen by IARC. May contain ethylene oxide in the headspace of the drum. Ethylene oxide is a cancer and reproductive hazard. This product contains trace amounts of benzyl chloride, which has been evaluated by International Agency for Research on Cancer (IARC) and found to be possibly carcinogenic to humans.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	1310 mg/kg (Rat) 4290-5000 mg/kg (Rat) 4290 mg/kg (Mouse) (similar substance)	2 mL/kg (Rabbit) 2500 mg/kg (Rabbit)	> 0.0213 mL/L (Rat)
Isopropanol	67-63-0	4396 mg/kg (Rat) 5840 mg/kg (Rat) 3600 mg/kg (Mouse)	12800 mg/kg (Rat 12870 mg/kg (Rabbit) 16.4 mL/kg (Rabbit)	72.6 mg/L (Rat) 4h >1000 ppm(24.6 mg/L) (Rat)
Isoquinoline, reaction products with 1-(chloromethyl)naphthalene and quinoline	68909-81-9	No data available	No data available	No data available
Dimethyl formamide	68-12-2	3010 mg/kg (Rat)	3.2 g/kg (Rat) > 3160 mg/kg (Rat)	> 5.85 mg/L (Rat) 4 h (saturated concentration)
Propargyl alcohol	107-19-7	20 mg/kg (Rat) 20-50 mg/kg (Rat) 93-110 mg/kg (Rat) 54-55 mg/kg (Rat) 56.4 mg/kg (Rat) 145 mg/kg (Rat)	16 mg/kg (Rabbit) 88 mg/kg (Rabbit)	600 ppm (Rat) 4 h 520 ppm (Rat) 4 h 1.6 mg/L (Rat) 2 h
Copper iodide	7681-65-4	300 – 2000 mg/kg (Rat)	> 2000 mg/kg (Rat)	No data available
Ethyl octynol	5877-42-9	1200 mg/kg (Rat) 1420 mg/kg (Rat) (Similar substance, 2-methylbut-3-yn-2-ol)	200 µL/kg (Rabbit) 174 mg/kg (Rabbit)	> 21.3 mg/L (Rat) (Similar substance, 3-Butyn-2-ol, 2-methyl-)
Glycol	Proprietary	12565 - 19600 mg/kg (Rat)	11890 - 13300 mg/kg (Rabbit)	> 4.6 mg/L (Rat) 4h
Cuprous chloride	7758-89-6	140 mg/kg (Rat) 336 mg/kg (Rat)	1224 mg/kg (Rat)	No data available

Substances	CAS Number	Skin corrosion/irritation
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Causes moderate skin irritation. (rabbit)
Isopropanol	67-63-0	Non-irritating to the skin (rabbit)
Dimethyl formamide	68-12-2	Non-irritating to the skin (rabbit)
Propargyl alcohol	107-19-7	Corrosive to skin (rabbit)
Copper iodide	7681-65-4	Causes moderate skin irritation. (in vitro)
Ethyl octynol	5877-42-9	Causes mild skin irritation (rabbit) (similar substances)
Glycol		Non-irritating to the skin (rabbit)
Cuprous chloride	7758-89-6	Causes moderate skin irritation. (rabbit)

Substances	CAS Number	Eye damage/irritation
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Causes moderate eye irritation (rabbit)

Isopropanol	67-63-0	Causes severe eye irritation (rabbit)
Dimethyl formamide	68-12-2	Causes moderate eye irritation (rabbit)
Propargyl alcohol	107-19-7	Corrosive to eyes (rabbit)
Copper iodide	7681-65-4	Causes severe eye irritation (rabbit)
Ethyl octynol	5877-42-9	Causes moderate eye irritation (rabbit) (similar substances)
Glycol		Non-irritating to the eye (rabbit)
Cuprous chloride	7758-89-6	Causes severe eye irritation (rabbit)

Substances	**CAS Number**	**Skin Sensitization**
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Did not cause sensitization on laboratory animals (guinea pig) (mouse)
Isopropanol	67-63-0	Did not cause sensitization on laboratory animals (guinea pig)
Dimethyl formamide	68-12-2	Did not cause sensitization on laboratory animals (guinea pig)
Propargyl alcohol	107-19-7	No information available
Copper iodide	7681-65-4	May cause sensitization by skin contact (guinea pig)
Ethyl octynol	5877-42-9	Did not cause sensitization on laboratory animals (guinea pig) (similar substances)
Glycol		Did not cause sensitization on laboratory animals (guinea pig)
Cuprous chloride	7758-89-6	Did not cause sensitization on laboratory animals (guinea pig)

Substances	**CAS Number**	**Respiratory Sensitization**
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	No information available
Isopropanol	67-63-0	No information available
Dimethyl formamide	68-12-2	No information available
Propargyl alcohol	107-19-7	No information available
Copper iodide	7681-65-4	No information available
Ethyl octynol	5877-42-9	No information available
Glycol		No information available
Cuprous chloride	7758-89-6	No information available

Substances	**CAS Number**	**Mutagenic Effects**
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Not mutagenic in AMES Test. In vivo tests did not show mutagenic effects In vivo tests did not show mutagenic effects (similar substances)
Isopropanol	67-63-0	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects
Dimethyl formamide	68-12-2	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects
Propargyl alcohol	107-19-7	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects
Copper iodide	7681-65-4	Did not show mutagenic effects in animal experiments (similar substances)
Ethyl octynol	5877-42-9	Not mutagenic in AMES Test. In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects (similar substances)
Glycol		In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects
Cuprous chloride	7758-89-6	Not mutagenic in AMES Test. Did not show mutagenic effects in animal experiments (similar substances)

Substances	**CAS Number**	**Carcinogenic Effects**
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Did not show carcinogenic effects in animal experiments (similar substances)
Isopropanol	67-63-0	Did not show carcinogenic effects in animal experiments (rat)
Dimethyl formamide	68-12-2	Did not show carcinogenic effects in animal experiments
Propargyl alcohol	107-19-7	Did not show carcinogenic effects in animal experiments
Copper iodide	7681-65-4	Did not show carcinogenic effects in animal experiments (similar substances)
Ethyl octynol	5877-42-9	No information available.
Glycol		Did not show carcinogenic effects in animal experiments (rat)
Cuprous chloride	7758-89-6	Did not show carcinogenic effects in animal experiments (similar substances)

Substances	**CAS Number**	**Reproductive Toxicity**
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	No information available
Isopropanol	67-63-0	No significant toxicity observed in animal studies at concentration requiring classification.
Dimethyl formamide	68-12-2	Experiments have shown reproductive toxicity effects on laboratory animals (fetotoxic and teratogenic effects).
Propargyl alcohol	107-19-7	No significant toxicity observed in animal studies at concentration requiring classification.

Copper iodide	7681-65-4	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Ethyl octynol	5877-42-9	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Glycol		No significant toxicity observed in animal studies at concentration requiring classification.
Cuprous chloride	7758-89-6	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	**CAS Number**	**STOT - single exposure**
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	No information available
Isopropanol	67-63-0	May cause headache, dizziness, and other central nervous system effects.
Dimethyl formamide	68-12-2	No significant toxicity observed in animal studies at concentration requiring classification.
Propargyl alcohol	107-19-7	No significant toxicity observed in animal studies at concentration requiring classification.
Copper iodide	7681-65-4	No significant toxicity observed in animal studies at concentration requiring classification.
Ethyl octynol	5877-42-9	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Glycol		No significant toxicity observed in animal studies at concentration requiring classification.
Cuprous chloride	7758-89-6	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	**CAS Number**	**STOT - repeated exposure**
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	No significant toxicity observed in animal studies at concentration requiring classification.
Isopropanol	67-63-0	No significant toxicity observed in animal studies at concentration requiring classification.
Dimethyl formamide	68-12-2	Causes damage to organs through prolonged or repeated exposure if inhaled (Liver)
Propargyl alcohol	107-19-7	Causes damage to organs through prolonged or repeated exposure if swallowed Causes damage to organs through prolonged or repeated exposure if inhaled (Liver) (Kidney) (Blood)
Copper iodide	7681-65-4	Causes damage to organs through prolonged or repeated exposure if swallowed (Thyroid)
Ethyl octynol	5877-42-9	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Glycol		Causes damage to organs through prolonged or repeated exposure (Kidney)
Cuprous chloride	7758-89-6	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	**CAS Number**	**Aspiration hazard**
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Not applicable
Isopropanol	67-63-0	Not applicable
Dimethyl formamide	68-12-2	Not applicable
Propargyl alcohol	107-19-7	Not applicable
Copper iodide	7681-65-4	Not applicable
Ethyl octynol	5877-42-9	Not applicable
Glycol		Not applicable
Cuprous chloride	7758-89-6	Not applicable

12. Ecological Information

12.1 Toxicity
Ecotoxicity Effects

Substances	**CAS Number**	**Toxicity to Algae**	**Toxicity to Fish**	**Toxicity to Microorganisms**	**Toxicity to Invertebrates**
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	EC50(48h) 20 mg/L (growth inhibition) (Pseudokirchnerella subcapitata) EC50(48h) 50 mg/L (growth rate) (Pseudokirchnerella subcapitata)	LC50(96h): 5.6 mg/L (Brachydanio rerio) LC50(96h): 1.3 mg/L (Lepomis macrochirus) LC50(96h): 5 mg/L (Danio rerio)	No information available	EC50(48h): 1.821 mg/L (Daphnia sp.) (QSAR)

Isopropanol	67-63-0	EC50: > 1000 mg/l(Desmodesmus subspicatus) EC50(7d): 1800 mg/L (mean extinction value) (Scenedesmus quadricauda)	LC50: 9640 mg/l (Pimephales promelas)	TT(16h): 1050 mg/L (Pseudomonas putida)	EC50: 13299 mg/l (Daphnia magna) EC50(24h): > 10000 mg/L (Daphnia magna)
Isoquinoline, reaction products with 1-(chloromethyl)naphthalene and quinoline	68909-81-9	No information available	No information available	No information available	No information available
Dimethyl formamide	68-12-2	EC50(72h): > 1000 mg/L (Desmodesmus subspicatus) (growth rate)	LC50: 6300 mg/L (Lepomis macrochirus) LC50(96h): 7100 mg/L (Lepomis macrochirus) MATC (6mo): ca. 5 < 11 mg/L (Pimephales promelas)	EC50(5min): 12300 – 17500 mg/L (Vibrio fisheri) (growth inhibition)	EC50: 7500 mg/L (Daphnia magna) EC50(48h): 13100 mg/L (Daphnia magna) NOEC(21d): 1500 mg/L (Daphnia magna) (reproduction)
Propargyl alcohol	107-19-7	EC50(72h): > 98.1 mg/L (Desmodesmus subspicatus) (biomass and growth rate)	LC50: 1.49-1.56 mg/L (Pimephales promelas) LC50(96h): 1.53 mg/L (Pimephales promelas)	EC50(30 min) > 1000 mg/L (Activated sludge, domestic)	EC50:32 mg/L (Daphnia magna) EC50(48h): 3.36 mg/L (Daphnia magna)
Copper iodide	7681-65-4	EC50(72h): 0.13 mg/L (Desmodesmus subspicatus) (growth rate) (similar substance, elemental iodine)	LC50(96h): 1.67 mg/L (Oncorhynchus mykiss) (similar substance, elemental iodine)	EC50(3h) 280 mg/L (activated sludge, respiration rate) (similar substance, iodine)	LC50(48h): 0.55 mg/L (Daphnia magna) (similar substance, elemental iodine)
Ethyl octynol	5877-42-9	EC50(72h): 11.9 mg/L (green algae)	No information available	EC20(3h): ~ 63 mg/L (activated sludge, domestic)	EC50(48h): 14.9 mg/L (Daphnia magna)
Glycol	Proprietary	TGK(8d): 2700 mg/L (Scenedesmus quadricauda)	LC50: 75200 mg/L (Pimephales promelas)	EC20(30m): > 1995 mg/L (domestic activated sludge)	EC50: 84000 mg/L (Daphnia magna) EC50: >10000 mg/L (Daphnia magna)
Cuprous chloride	7758-89-6	NOEC(72h) 5.7 ug/L (growth rate) (Phaeodactylum tricornutum)	LC50(96h): 38.4 – 256.2 ug/L (Pimephales promelas) (similar substance – copper sulfate)	NOEC(30d) 0.23 – 0.45 mg/L (activated sludge) (heterotrophs) NOEC(30d) 0.26 – 0.29 mg/L (activated sludge) (nitrifiers) EC50(100d) 25 ug/L (sewage, domestic) (nitrate reduction)	LC50(48h) 30 – 63 ug/L (Daphnia magna)

12.2 Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Readily biodegradable (98-99% @ 28d)
Isopropanol	67-63-0	Readily biodegradable (53% @ 5d)
Isoquinoline, reaction products with 1-(chloromethyl)naphthalene and quinoline	68909-81-9	No information available
Dimethyl formamide	68-12-2	Readily biodegradable (100% @ 28d)
Propargyl alcohol	107-19-7	Readily biodegradable (95% @ 28d)
Copper iodide	7681-65-4	Not applicable
Ethyl octynol	5877-42-9	Not readily biodegradable (0-10% @ 28d)
Glycol	Proprietary	Readily biodegradable (90-100% @ 28d)
Cuprous chloride	7758-89-6	Not applicable

12.3 Bioaccumulative potential

Substances	CAS Number	Log Pow
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	3.7 @ 25°C
Isopropanol	67-63-0	0.05 @ 25°C
Isoquinoline, reaction products with 1-(chloromethyl)naphthalene and quinoline	68909-81-9	No information available
Dimethyl formamide	68-12-2	BCF: 0.3 – 1.2 L/kg (Cyprinus carpio)
Propargyl alcohol	107-19-7	-0.35 @ 25°C BCF: 3

Copper iodide	7681-65-4	No information available
Ethyl octynol	5877-42-9	No information available
Glycol	Proprietary	BCF: 100 (Leuciscus idus melanotus)
Cuprous chloride	7758-89-6	No information available

12.4 Mobility in soil
No information available

12.5 Results of PBT and vPvB assessment

Substances	PBT and vPvB assessment
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	PBT & vPvB
Isopropanol	Not PBT/vPvB
Dimethyl formamide	Not PBT/vPvB
Copper iodide	Not PBT/vPvB
Cuprous chloride	Not PBT/vPvB

12.6 Other adverse effects
Endocrine Disruptor Information

Substances	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	Group III	Cat. 1

13. Disposal Considerations

13.1 Waste treatment methods
Disposal Method Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging Follow all applicable national or local regulations.

14. Transport Information

IMDG/IMO
UN Number: UN2924,
UN Proper Shipping Name: Flammable Liquid, Corrosive, N.O.S.
Transport Hazard Class(es): , 3
Subsidiary Hazard: , (8)
Packing Group: , III
Environmental Hazards: Not applicable
EMS: EmS F-E, S-C

RID
UN Number: UN2924,
UN Proper Shipping Name: Flammable Liquid, Corrosive, N.O.S.
Transport Hazard Class(es): , 3
Subsidiary Hazard: , (8)
Packing Group: , III
Environmental hazard: Not applicable

ADR
UN Number: UN2924,
UN Proper Shipping Name: Flammable Liquid, Corrosive, N.O.S.
Transport Hazard Class(es): , 3
Subsidiary Hazard: , (8)
Packing Group: , III
Environmental hazard: Not applicable

IATA/ICAO
UN Number: UN2924,

UN Proper Shipping Name:	Flammable Liquid, Corrosive, N.O.S.
Transport Hazard Class(es):	, 3
Subsidiary Hazard:	, (8)
Packing Group:	, III
Environmental hazard:	Not applicable

Special Precautions for User None
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable

15. Regulatory Information

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

International Inventories
All of the components in the product are on the following Inventory lists: All of the components in the product are on the following Inventory lists:.

EINECS Inventory	This product, and all its components, complies with EINECS
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian DSL Inventory	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.

List of the carcinogenic, mutagenic and toxic for reproduction substances SZW
Dimethyl formamide

15.2 Chemical Safety Assessment
No information available

16. Other Information

Full text of R-phrases referred to under Sections 2 and 3

R10 Flammable.
R34 Causes burns.
R43 May cause sensitization by skin contact.
R61 May cause harm to the unborn child.
R21/22 Harmful in contact with skin and if swallowed.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Key literature references and sources for data
www.ChemADVISOR.com/

Revision Date: 11-Mar-2014
Revision Note
Not applicable

This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010

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End of Safety Data Sheet