HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

TEMPERUS™

Revision Date: 16-Oct-2015 **Revision Number:** 17

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

1.1. Product Identifier

Product Name TEMPERUS™
Internal ID Code HM004606

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

Recommended Use Additive

1.3. Details of the supplier of the safety data sheet

Halliburton Manufacturing Services, Ltd.
Halliburton House, Howemoss Crescent
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
United Kingdom

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

Emergency telephone - §45 - (EC)1272/2008	
Europe	**112**
Croatia	Centar za kontrolu otrovanja (CKO): (+385 1) 23-48-342 (Poison Control Center (PCC) - Institute for Medical Research and Occupational Health)
Cyprus	+210 7793777
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
Romania	+40 21 318 36 06
Spain	Poison Information Service (ES): +34 91 562 04 20
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 Inhalation Toxicity - Vapors	Category 4 - (H332)
Skin Corrosion / irritation	Category 2 - (H315)
Serious Eye Damage / Eye Irritation	Category 2 - (H319)

2.2. Label Elements

Hazard Pictograms

Signal Word **Warning**

Hazard Statements
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H332 - Harmful if inhaled

Precautionary Statements - EU (§28, 1272/2008)
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301+ P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention

Contains

Substances	**CAS Number**
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0
Propylene carbonate	108-32-7
Diethylene glycol monobutyl ether	112-34-5
Ethylene glycol monobutyl ether	111-76-2

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).

SECTION 3: Composition/information on Ingredients

3.2. Mixtures Mixture

Substances	EINECS	CAS Number	PERCENT (w/w)	EU - CLP Substance Classification	REACH No.
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	Not applicable	68526-59-0	30 - 60%	Skin Irrit. 2 (H315) Eye Irrit. 2A (H319)	No data available
Propylene carbonate	203-572-1	108-32-7	1 - 5%	Eye Irrit. 2A (H319)	No data available
Diethylene glycol monobutyl ether	203-961-6	112-34-5	10 - 30%	Eye Irrit. 2A (H319)	01-2119475104-44
Ethylene glycol monobutyl ether	203-905-0	111-76-2	10 - 30%	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)	01-2119475108-36

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 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.

Ingestion Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

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

Harmful if inhaled. Causes eye irritation. Causes skin irritation.

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

Decomposition in fire may produce harmful 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.

SECTION 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. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.
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.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling

Use appropriate protective equipment. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Avoid breathing mist. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse.

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. Store in a cool well ventilated area. Keep container closed when not in use. Keep from heat, sparks, and open flames. Store between 40.5 F (4.7 C) and 120.5 F (49 C). Product has a shelf life of 36 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
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	Not applicable	Not applicable	Not applicable	Not applicable
Propylene carbonate	108-32-7	Not applicable	Not applicable	Not applicable	Not applicable
Diethylene glycol monobutyl ether	112-34-5	TWA: 10 ppm TWA: 67.5 mg/m³ STEL: 15 ppm STEL: 101.2 mg/m³	TWA: 10 ppm TWA: 67.5 mg/m³ STEL: 15 ppm STEL: 101.2 mg/m³	TWA: 50 mg/m³ STEL: 100 mg/m³	TWA: 10 ppm TWA: 67.5 mg/m³ STEL: 15 ppm STEL: 101.2 mg/m³
Ethylene glycol monobutyl ether	111-76-2	Not applicable	TWA: 25 ppm TWA: 123 mg/m³ STEL: 50 ppm STEL: 246 mg/m³	TWA: 100 mg/m³ STEL: 246 mg/m³	2 ppm

Substances	CAS Number	Germany	Spain	Portugal	Finland
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	Not applicable	Not applicable	Not applicable	Not applicable
Propylene carbonate	108-32-7	Not applicable	Not applicable	Not applicable	Not applicable
Diethylene glycol monobutyl ether	112-34-5	TWA: 10 ppm TWA: 67 mg/m³	TWA: 10 ppm TWA: 67.5 mg/m³ 15 ppm STEL [VLA-EC]; 101.2 mg/m³ STEL [VLA-EC]	TWA: 10 ppm TWA: 67.5 mg/m³ STEL: 15 ppm STEL: 101.2 mg/m³	TWA: 10 ppm TWA: 68 mg/m³
Ethylene glycol monobutyl ether	111-76-2	TWA: 10 ppm TWA: 49 mg/m³	TWA: 20 ppm TWA: 98 mg/m³ 50 ppm STEL [VLA-EC]; 245 mg/m³ STEL [VLA-EC]	TWA: 20 ppm TWA: 98 mg/m³ STEL: 50 ppm STEL: 246 mg/m³	TWA: 20 ppm TWA: 98 mg/m³ STEL: 50 ppm STEL: 250 mg/m³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	Not applicable	Not applicable	Not applicable	Not applicable
Propylene carbonate	108-32-7	Not applicable	Not applicable	Not applicable	Not applicable
Diethylene glycol monobutyl ether	112-34-5	TWA: 10 ppm TWA: 67.5 mg/m³ STEL" 15 ppm STEL" 101.2 mg/m³	10 ppm TWA; 67.5 mg/m³ TWA 15 ppm STEL; 101.2 mg/m³ STEL	TWA: 10 ppm TWA: 67 mg/m³ STEL: 15 ppm STEL: 101 mg/m³	TWA: 10 ppm TWA: 68 mg/m³ STEL: 20 ppm STEL: 102 mg/m³
Ethylene glycol monobutyl ether	111-76-2	TWA: 20 ppm TWA: 98 mg/m³ STEL" 40 ppm STEL" 200 mg/m³	20 ppm TWA; 98 mg/m³ TWA 50 ppm STEL; 246 mg/m³ STEL	TWA: 10 ppm TWA: 49 mg/m³ STEL: 20 ppm STEL: 98 mg/m³	TWA: 10 ppm TWA: 50 mg/m³ STEL: 20 ppm STEL: 75 mg/m³

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	Not applicable	Not applicable	Not applicable	Not applicable
Propylene carbonate	108-32-7	Not applicable	Not applicable	Not applicable	Not applicable
Diethylene glycol monobutyl ether	112-34-5	TWA: 10 ppm TWA: 67.5 mg/m³ STEL: 15 ppm STEL: 101.2 mg/m³	TWA: 67 mg/m³ STEL: 100 mg/m³	TWA: 67.5 mg/m³ STEL: 101.2 mg/m³	TWA: 100 mg/m³
Ethylene glycol monobutyl ether	111-76-2	TWA: 20 ppm TWA: 98 mg/m³ STEL: 50 ppm STEL: 246 mg/m³	TWA: 98 mg/m³ STEL: 200 mg/m³	TWA: 98 mg/m³ STEL: 246 mg/m³	TWA: 100 mg/m³

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	Not applicable	Not applicable	Not applicable	Not applicable
Propylene carbonate	108-32-7	Not applicable	Not applicable	Not applicable	Not applicable
Diethylene glycol monobutyl ether	112-34-5	TWA: 10 ppm TWA: 68 mg/m³	TWA: 150 mg/m³ STEL: 250 mg/m³	TWA: 10 ppm TWA: 67.5 mg/m³ STEL: 15 ppm STEL: 101.2 mg/m³	TWA: 10 ppm TWA: 67.5 mg/m³ STEL: 15 ppm STEL: 101.2 mg/m³
Ethylene glycol monobutyl ether	111-76-2	TWA: 20 ppm TWA: 98 mg/m³	TWA: 30 ppm TWA: 150 mg/m³ STEL: 50 ppm STEL: 250 mg/m³ STEL: 246 mg/m³	TWA: 20 ppm TWA: 98 mg/m³ STEL: 50 ppm STEL: 246 mg/m³	TWA: 20 ppm TWA: 98 mg/m³ STEL: 50 ppm STEL: 246 mg/m³

Derived No Effect Level (DNEL) No information available.

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
Diethylene glycol monobutyl ether	67.5 mg/m³	Not available	67.5 mg/m³	101.2 mg/m³	20 mg/kg bw/day	Not available	Not available	Not available	Not available
Ethylene glycol monobutyl ether	98 mg/m³	663 mg/m³	Not available	246 mg/m³	75 mg/kg bw/day	89 mg/kg bw/day	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
Diethylene glycol monobutyl ether	34 mg/m³	Not available	34 mg/m³	50.6 mg/m³	10 mg/kg bw/day	Not available	Not available	Not available	1.25 mg/kg bw/day	Not available	Not available
Ethylene glycol monobutyl ether	49 mg/m³	426 mg/m³	Not available	123 mg/m³	38 mg/kg bw/day	44.5 mg/kg bw/day	Not available	Not available	3.2 mg/kg bw/day	13.4 mg/kg bw/day	Not available

Predicted No Effect Concentration (PNEC) No information available.

Substances	Freshwater	Marine water	Intermittent release	Sewage treatment plant	Sediment (freshwater)	Sediment (marine water)	Air	Soil	Secondary poisoning
Diethylene glycol monobutyl ether	1.0 mg/L	0.1 mg/L	3.9 mg/L	200 mg/L	4.0 mg/kg	0.4 mg/kg	Not available	0.4 mg/kg	56 mg/kg food
Ethylene glycol monobutyl ether	8.8 mg/L	0.88 kg/L	9.1 mg/L	463 mg/L	34.6 mg/kg	3.46 mg/kg	Not available	3.13 mg/kg soil dw	0.02 g/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

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 Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Organic vapor respirator.

Hand Protection 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. (>= 0.4 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.

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 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:	Liquid	**Color:**	Amber
Odor:	Mild hydrocarbon	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	8.5
Freezing Point/Range	No data available
Melting Point/Range	No data available
Boiling Point/Range	No data available
Flash Point	73.9 °C / 165 °F PMCC
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	No data available
Specific Gravity	0.978
Water Solubility	Dispersible
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

Avoid contact with oxidizers.

10.5. Incompatible Materials

Strong oxidizers. Strong acids.

10.6. Hazardous Decomposition Products

Oxides of nitrogen. Carbon monoxide and carbon dioxide.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

Inhalation Harmful if inhaled. May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Eye Contact Causes eye irritation.

Skin Contact Causes severe skin irritation.

Ingestion May cause abdominal pain, vomiting, nausea, and diarrhea. May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression.

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
Amides, from C18-unsatd. fatty acids dimers and	68526-59-0	> 5000 mg/kg (Rat) (similar substance)	> 2000 mg/kg (Rabbit) (similar substance)	No data available

diethanolamine				
Propylene carbonate	108-32-7	29000 mg/kg (Rat) >5000 mg/kg (Rat)	20000 mg/kg (Rabbit) >2000 mg/kg (Rabbit)	No data available
Diethylene glycol monobutyl ether	112-34-5	3384 mg/kg (Rat) 6560 mg/kg (Rat) 5660 mg/kg (Rat) 2406 mg/kg (Mouse) 2000 mg/kg (Guinea pig)	2700 mg/kg (Rabbit) 2764 mg/kg (Rabbit)	No data available
Ethylene glycol monobutyl ether	111-76-2	470 mg/kg (Rat) 1414 mg/kg (Guinea pig) 1746 mg/kg (Rat) 320 mg/kg (Rabbit) 530 mg/kg (Rat) 560 mg/kg (Rat) 3000 mg/kg (Rat) 2400 mg/kg (Rat)	220 mg/kg (Rabbit) 2270 mg/kg (Rat) 200 mg/kg (Guinea pig) >2000 mg/kg (Rabbit) 841 mg/kg (Rabbit) 435 mg/kg (Rabbit) >2000 mg/kg (Guinea pig) >2000 mg/kg (Rat) 100 mg/kg (Rabbit) 207 mg/kg (Guinea pig) 400-500 mg/kg (Rabbit)	450 mg/L (Rat) 4h 2.174 mg/L (Rat) 4h 2.21 mg/L (Rat) 4h 450-486 mg/L (Rat) 4h 925 mg/L (Rat) 4h >633 mg/L (Guinea pig) 1h

Substances	**CAS Number**	**Skin corrosion/irritation**
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	Causes moderate skin irritation. (Rabbit) (similar substances)
Propylene carbonate	108-32-7	Not irritating to skin in rabbits.
Diethylene glycol monobutyl ether	112-34-5	Mild skin irritation (Rabbit)
Ethylene glycol monobutyl ether	111-76-2	Causes moderate skin irritation. (Rabbit)

Substances	**CAS Number**	**Eye damage/irritation**
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	Causes moderate eye irritation. (Rabbit) (similar substances)
Propylene carbonate	108-32-7	Causes moderate eye irritation. (Rabbit)
Diethylene glycol monobutyl ether	112-34-5	Causes moderate eye irritation. (Rabbit)
Ethylene glycol monobutyl ether	111-76-2	Causes moderate eye irritation. (Rabbit)

Substances	**CAS Number**	**Skin Sensitization**
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	Did not cause sensitization on laboratory animals (guinea pig) (similar substances)
Propylene carbonate	108-32-7	Patch test on human volunteers did not demonstrate sensitization properties
Diethylene glycol monobutyl ether	112-34-5	Did not cause sensitization on laboratory animals (guinea pig)
Ethylene glycol monobutyl ether	111-76-2	Did not cause sensitization on laboratory animals (guinea pig)

Substances	**CAS Number**	**Respiratory Sensitization**
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	No information available
Propylene carbonate	108-32-7	No information available
Diethylene glycol monobutyl ether	112-34-5	No information available
Ethylene glycol monobutyl ether	111-76-2	No information available

Substances	**CAS Number**	**Mutagenic Effects**
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances)
Propylene carbonate	108-32-7	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.
Diethylene glycol monobutyl ether	112-34-5	In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects
Ethylene glycol monobutyl ether	111-76-2	In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects

Substances	CAS Number	Carcinogenic Effects
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	Did not show carcinogenic effects in animal experiments (similar substances)
Propylene carbonate	108-32-7	Did not show carcinogenic effects in animal experiments
Diethylene glycol monobutyl ether	112-34-5	No information available.
Ethylene glycol monobutyl ether	111-76-2	Not regarded as carcinogenic.

Substances	CAS Number	Reproductive toxicity
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	Did not show teratogenic effects in animal experiments. (similar substances)
Propylene carbonate	108-32-7	Did not show teratogenic effects in animal experiments.
Diethylene glycol monobutyl ether	112-34-5	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Ethylene glycol monobutyl ether	111-76-2	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	No significant toxicity observed in animal studies at concentration requiring classification.
Propylene carbonate	108-32-7	No significant toxicity observed in animal studies at concentration requiring classification.
Diethylene glycol monobutyl ether	112-34-5	No significant toxicity observed in animal studies at concentration requiring classification.
Ethylene glycol monobutyl ether	111-76-2	No data of sufficient quality are available.

Substances	CAS Number	STOT - repeated exposure
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	No significant toxicity observed in animal studies at concentration requiring classification.
Propylene carbonate	108-32-7	No significant toxicity observed in animal studies at concentration requiring classification.
Diethylene glycol monobutyl ether	112-34-5	No significant toxicity observed in animal studies at concentration requiring classification.
Ethylene glycol monobutyl ether	111-76-2	No data of sufficient quality are available.

Substances	CAS Number	Aspiration hazard
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	Not applicable
Propylene carbonate	108-32-7	Not applicable
Diethylene glycol monobutyl ether	112-34-5	Not applicable
Ethylene glycol monobutyl ether	111-76-2	No adverse health effects are expected from swallowing.

SECTION 12: Ecological Information

12.1. Toxicity

Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	No information available	LC50 (96h) 2.6 mg/L (Pimephales promelas)	No information available	No information available
Propylene carbonate	108-32-7	EC50 (72h) > 500 mg/L (Desmodesmus subspicatus)	LC50 (96h) 5300 mg/L (Leuciscus idus) LC50 (96h) > 1000 mg/L	No information available	EC50 (48h) > 500 mg/L (Daphnia magna)

			(Cyprinus carpio)		
Diethylene glycol monobutyl ether	112-34-5	EC50 > 100 mg/L (Desmodesmus subspicatus)	LC50 1300 mg/L (Lepomis macrochirus)	EC10 >1995 mg/L (Activated sludge, industrial)	EC50 > 100 mg/L (Daphnia magna)
Ethylene glycol monobutyl ether	111-76-2	EC50 839.56 mg/L (Skeletonema costatum) EbC50 (72h) 911 mg/L EC50 > 500 mg/L (Scenedesmus subspicatus) NOEC (72h) 88 mg/L (biomass)(Pseudokirchnerella subcapitata)	LC50 > 1000 mg/L (Scophthalmus maximus, juvenile) LC50 (96h) 1474 mg/L (Oncorhynchus mykiss) NOEC (21d) > 100mg/L (Danio rerio)	TT/EC3 (48h) 463 mg/L (Uronema parduzci) TT/EC3 (72h) 73 mg/L (Entosiphon sulcatum) TT/EC3 (16h) 700 mg/L (Pseudomonas putida)	No information available

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	No information available
Propylene carbonate	108-32-7	(87.1% @ 29d)
Diethylene glycol monobutyl ether	112-34-5	Readily biodegradable (85% @ 28d)
Ethylene glycol monobutyl ether	111-76-2	Readily biodegradable (75-88% @ 28d)

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	No information available
Propylene carbonate	108-32-7	0.0778
Diethylene glycol monobutyl ether	112-34-5	1.0
Ethylene glycol monobutyl ether	111-76-2	0.81

12.4. Mobility in soil

Substances	CAS Number	Mobility
Amides, from C18-unsatd. fatty acids dimers and diethanolamine	68526-59-0	No information available
Propylene carbonate	108-32-7	No information available
Diethylene glycol monobutyl ether	112-34-5	No information available
Ethylene glycol monobutyl ether	111-76-2	No information available

12.5. Results of PBT and vPvB assessment

No information available.

Substances	PBT and vPvB assessment
Propylene carbonate	Not PBT/vPvB
Diethylene glycol monobutyl ether	Not PBT/vPvB
Ethylene glycol monobutyl ether	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 Method 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: Not restricted

UN Proper Shipping Name: Not restricted

Transport Hazard Class(es): Not applicable

Packing Group: Not applicable

Environmental Hazards: Not applicable

RID

UN Number: Not restricted
UN Proper Shipping Name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

ADR

UN Number: Not restricted
UN Proper Shipping Name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

IATA/ICAO

UN Number: Not restricted
UN Proper Shipping Name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

14.1. UN Number: Not restricted

14.2. UN Proper Shipping Name: Not restricted

14.3. Transport Hazard Class(es): Not applicable

14.4. Packing Group: Not applicable

14.5. Environmental Hazards: Not applicable

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

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 1: Low hazard to waters.

Substances	CAS Number	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization
Diethylene glycol monobutyl ether	112-34-5	Use restricted. See item 55. Conditions of restrictions 27 June 2010	Not applicable

15.2. Chemical Safety Assessment
No information available

SECTION 16: Other Information

Full text of H-Statements referred to under sections 2 and 3
H302 - Harmful if swallowed
H312 - Harmful in contact with skin

H315 - Causes skin irritation
H319 - Causes serious eye irritation
H332 - Harmful if inhaled

Key or legend to abbreviations and acronyms
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/
OSHA
ECHA C&L

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SDS sections updated: 1

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

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End of Safety Data Sheet