

**Anti-freeze and anti-corrosive for radiators,  
free from nitrite**

Version	Revision Date:	SDS Number:	Date of last issue: 21.07.2016
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**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1 Product identifier**

Trade name : Anti-freeze and anti-corrosive for radiators, free from nitrite

Product code : 83 51 2 355 290, 83 51 2 355 291, 83 51 2 355 293, 83 51 2 445 463

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

Use of the Sub-  
stance/Mixture : Radiator anti-freeze

**1.3 Details of the supplier of the safety data sheet**

Company : BMW AG  
80788 München

Telephone : +49 (0)89 / 382-0

Telefax : +49 (0)89 / 382-25858

E-mail address of person  
responsible for the SDS : hazmat@bmw.com

**1.4 Emergency telephone number**

+49 (0)89 / 382-78333

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**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

**Classification (REGULATION (EC) No 1272/2008)**

Acute toxicity, Category 4	H302: Harmful if swallowed.
Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through prolonged or repeated exposure.

**2.2 Label elements**

**Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms : 

Signal word : Warning

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Hazard statements : H302 Harmful if swallowed.  
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements : **Prevention:**  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
**Response:**  
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.  
P314 Get medical advice/ attention if you feel unwell.

Hazardous components which must be listed on the label:  
Ethylene glycol

**2.3 Other hazards**

None known.

**SECTION 3: Composition/information on ingredients**

**3.2 Mixtures**

**Hazardous components**

Chemical name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
Ethylene glycol	107-21-1 203-473-3 01-2119456816-28	Acute Tox. 4; H302 STOT RE 2; H373	>= 90 - <= 100
Sodium 2-ethylhexanoate	19766-89-3 243-283-8	Repr. 2; H361d	>= 1 - < 3
Disodium tetraborate pentahydrate	12179-04-3	Eye Irrit. 2; H319 Repr. 1B; H360FD	>= 1 - < 3

For explanation of abbreviations see section 16.

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
When symptoms persist or in all cases of doubt seek medical advice.

Protection of first-aiders : First Aid responders should pay attention to self-protection,

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and use the recommended personal protective equipment when the potential for exposure exists.

- |                         |   |   |
|-------------------------|---|---|
| If inhaled              | : | If inhaled, remove to fresh air.<br>Get medical attention.  |
| In case of skin contact | : | In case of contact, immediately flush skin with soap and plenty of water.<br>Remove contaminated clothing and shoes.<br>Get medical attention.<br>Wash clothing before reuse.<br>Thoroughly clean shoes before reuse. |
| In case of eye contact  | : | Flush eyes with water as a precaution.<br>Get medical attention if irritation develops and persists.  |
| If swallowed            | : | If swallowed, DO NOT induce vomiting.<br>Get medical attention.<br>Rinse mouth thoroughly with water.<br>Never give anything by mouth to an unconscious person.   |

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

- |       |   |   |
|-------|---|---|
| Risks | : | Harmful if swallowed.<br>May cause damage to organs through prolonged or repeated exposure. |
|-------|---|---|

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

- |           |   |   |
|-----------|---|---|
| Treatment | : | Treat symptomatically and supportively. |
|-----------|---|---|
- 

**SECTION 5: Firefighting measures**

**5.1 Extinguishing media**

- |                                |   |  |
|--------------------------------|---|--|
| Suitable extinguishing media   | : | Water spray<br>Alcohol-resistant foam<br>Carbon dioxide (CO <sub>2</sub> )<br>Dry chemical |
| Unsuitable extinguishing media | : | None known.  |

**5.2 Special hazards arising from the substance or mixture**

- |                                       |   |  |
|---------------------------------------|---|--|
| Specific hazards during fire-fighting | : | Exposure to combustion products may be a hazard to health. |
| Hazardous combustion products         | : | Carbon oxides<br>Metal oxides<br>Boron oxides              |

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**5.3 Advice for firefighters**

- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.
- 

**SECTION 6: Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures**

- Personal precautions : Use personal protective equipment.  
Follow safe handling advice and personal protective equipment recommendations.

**6.2 Environmental precautions**

- Environmental precautions : Discharge into the environment must be avoided.  
Prevent further leakage or spillage if safe to do so.  
Prevent spreading over a wide area (e.g. by containment or oil barriers).  
Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.

**6.3 Methods and material for containment and cleaning up**

- Methods for cleaning up : Soak up with inert absorbent material.  
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.  
Clean up remaining materials from spill with suitable absorbent.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

**6.4 Reference to other sections**

See sections: 7, 8, 11, 12 and 13.

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**SECTION 7: Handling and storage**

**7.1 Precautions for safe handling**

- Technical measures : See Engineering measures under EXPOSURE

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CONTROLS/PERSONAL PROTECTION section.

- Local/Total ventilation : Use only with adequate ventilation.
- Advice on safe handling : Avoid inhalation of vapour or mist.  
Do not swallow.  
Avoid contact with eyes.  
Avoid prolonged or repeated contact with skin.  
Handle in accordance with good industrial hygiene and safety practice.  
Take care to prevent spills, waste and minimize release to the environment.
- Hygiene measures : Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

**7.2 Conditions for safe storage, including any incompatibilities**

- Requirements for storage areas and containers : Keep in properly labelled containers. Store in accordance with the particular national regulations.
- Advice on common storage : Incompatible with oxidizing agents.
- Keep away from food, drink and animal feedingstuffs.
- To be observed: TRGS 510
- Recommended storage temperature : > -18 °C
- Other data : No decomposition if stored and applied as directed.

**7.3 Specific end use(s)**

- Specific use(s) : No data available

**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

**Occupational Exposure Limits**

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethylene glycol	107-21-1	TWA	20 ppm 52 mg/m <sup>3</sup>	2000/39/EC
Further information	Identifies the possibility of significant uptake through the skin, Indicative			
		STEL	40 ppm 104 mg/m <sup>3</sup>	2000/39/EC
Further information	Identifies the possibility of significant uptake through the skin, Indicative			
		TWA (Vapour)	20 ppm	GB EH40

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			52 mg/m3	
Further information	Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
		TWA (particles)	10 mg/m3	GB EH40
Further information	Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
		STEL (Vapour)	40 ppm 104 mg/m3	GB EH40
Further information	Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
Disodium tetraborate pentahydrate	12179-04-3	TWA	1 mg/m3	GB EH40
Further information	Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used			

**Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:**

Substance name	End Use	Exposure routes	Potential health effects	Value
Ethylene glycol	Workers	Inhalation	Long-term local effects	35 mg/m3
	Workers	Skin contact	Long-term systemic effects	106 mg/kg bw/day
	Consumers	Inhalation	Long-term local effects	7 mg/m3
	Consumers	Skin contact	Long-term systemic effects	53 mg/kg bw/day
Sodium 2-ethylhexanoate	Workers	Inhalation	Long-term systemic effects	14 mg/m3
	Workers	Skin contact	Long-term systemic effects	2 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	3.5 mg/m3
	Consumers	Skin contact	Long-term systemic effects	1 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	1 mg/kg bw/day

**Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:**

Substance name	Environmental Compartment	Value
Ethylene glycol	Fresh water	10 mg/l
	Marine water	1 mg/l
	Intermittent use/release	10 mg/l
	Sewage treatment plant	199.5 mg/l
	Fresh water sediment	37 mg/kg
	Marine sediment	3.7 mg/kg
	Soil	1.53 mg/kg
Sodium 2-ethylhexanoate	Fresh water	0.36 mg/l
	Marine water	0.036 mg/l
	Intermittent use/release	0.493 mg/l
	Sewage treatment plant	71.7 mg/l
	Fresh water sediment	0.301 mg/kg

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	Marine sediment	0.0301 mg/kg
	Soil	0.0579 mg/kg

**8.2 Exposure controls**

**Engineering measures**

Ensure adequate ventilation, especially in confined areas.  
Minimize workplace exposure concentrations.

**Personal protective equipment**

Eye protection : Wear the following personal protective equipment:  
Safety glasses

Hand protection  
Material : Nitrile rubber  
Break through time : > 480 min  
Glove thickness : 0.4 mm  
Directive : DIN EN 374  
Protective index : Class 6

Remarks : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.  
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.  
Respirator with filter type A

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

Appearance : liquid  
Colour : No data available  
Odour : characteristic  
Odour Threshold : No data available  
pH : No data available  
Melting point/freezing point : No data available

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Solidification / Setting point	< -18 °C Method: ISO 3016
Initial boiling point and boiling range	: > 165 °C Method: ASTM D 1120-72
Flash point	: > 126.5 °C Method: ISO 2719
Evaporation rate	: No data available
Flammability (solid, gas)	: Not applicable
Upper explosion limit	: 14.6 %(V)
Lower explosion limit	: 4.9 %(V)
Vapour pressure	: 0.2 hPa (20 °C)
Relative vapour density	: No data available
Density	: 1.122 g/cm <sup>3</sup> (20 °C)
Solubility(ies)	
Water solubility	: completely miscible
Solubility in other solvents	: soluble Solvent: polar solvents
Partition coefficient: n-octanol/water	: Not applicable
Auto-ignition temperature	: > 440 °C Method: DIN 51794
Decomposition temperature	: No data available
Viscosity	
Viscosity, kinematic	: 20 - 30 mm <sup>2</sup> /s (40 °C) Method: DIN 51562
Explosive properties	: Not explosive
Oxidizing properties	: The substance or mixture is not classified as oxidizing.

**9.2 Other information**

No data available

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**SECTION 10: Stability and reactivity**

**10.1 Reactivity**

Not classified as a reactivity hazard.

**10.2 Chemical stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

Hazardous reactions : No decomposition if stored and applied as directed.

**10.4 Conditions to avoid**

Conditions to avoid : None known.

**10.5 Incompatible materials**

Materials to avoid : Strong oxidizing agents

**10.6 Hazardous decomposition products**

No hazardous decomposition products are known.

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**SECTION 11: Toxicological information**

**11.1 Information on toxicological effects**

Information on likely routes of exposure : Inhalation  
Skin contact  
Ingestion  
Eye contact

**Acute toxicity**

Harmful if swallowed.

**Product:**

Acute oral toxicity : Acute toxicity estimate: 555.56 mg/kg  
Method: Calculation method

**Components:**

**Ethylene glycol:**

Acute oral toxicity : Acute toxicity estimate: 500 mg/kg  
Method: Expert judgement  
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Acute inhalation toxicity : LC50 (Rat): > 2.5 mg/l  
Exposure time: 6 h  
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Mouse): > 3,500 mg/kg

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**Sodium 2-ethylhexanoate:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg  
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC0 (Rat): 0.11 mg/l  
Exposure time: 8 h  
Test atmosphere: vapour  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity  
Remarks: Based on data from similar materials

**Disodium tetraborate pentahydrate:**

Acute oral toxicity : LD50 (Rat): 3,305 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 2.04 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

**Skin corrosion/irritation**

Not classified based on available information.

**Components:**

**Ethylene glycol:**

Species: Rabbit  
Result: No skin irritation

**Sodium 2-ethylhexanoate:**

Species: Rabbit  
Method: OECD Test Guideline 404  
Result: No skin irritation  
Remarks: Based on data from similar materials

**Disodium tetraborate pentahydrate:**

Species: Rabbit  
Result: No skin irritation

**Serious eye damage/eye irritation**

Not classified based on available information.

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**Components:**

**Ethylene glycol:**

Species: Rabbit  
Result: No eye irritation

**Sodium 2-ethylhexanoate:**

Species: Rabbit  
Method: OECD Test Guideline 405  
Result: No eye irritation  
Remarks: Based on data from similar materials

**Disodium tetraborate pentahydrate:**

Species: Rabbit  
Result: Irritation to eyes, reversing within 7 days

**Respiratory or skin sensitisation**

**Skin sensitisation**

Not classified based on available information.

**Respiratory sensitisation**

Not classified based on available information.

**Components:**

**Ethylene glycol:**

Test Type: Maximisation Test  
Exposure routes: Skin contact  
Species: Guinea pig  
Result: negative

**Sodium 2-ethylhexanoate:**

Test Type: Maximisation Test  
Exposure routes: Skin contact  
Species: Guinea pig  
Result: Does not cause skin sensitisation.  
Remarks: Based on data from similar materials

**Disodium tetraborate pentahydrate:**

Test Type: Buehler Test  
Exposure routes: Skin contact  
Species: Guinea pig  
Method: OECD Test Guideline 406  
Result: negative

**Germ cell mutagenicity**

Not classified based on available information.

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**Components:**

**Ethylene glycol:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

**Sodium 2-ethylhexanoate:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: Based on data from similar materials

**Disodium tetraborate pentahydrate:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative  
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo  
cytogenetic assay)  
Species: Mouse  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials

**Carcinogenicity**

Not classified based on available information.

**Components:**

**Ethylene glycol:**

Species: Mouse  
Application Route: Ingestion  
Exposure time: 2 Years  
Result: negative

**Disodium tetraborate pentahydrate:**

Species: Mouse  
Application Route: Ingestion  
Exposure time: 103 weeks  
Result: negative  
Remarks: Based on data from similar materials

**Reproductive toxicity**

Not classified based on available information.

**Components:**

**Sodium 2-ethylhexanoate:**

Effects on foetal develop- : Test Type: Embryo-foetal development

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ment

Species: Rat  
Application Route: Ingestion  
Result: positive  
Remarks: Based on data from similar materials

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

**Disodium tetraborate pentahydrate:**

Effects on fertility : Test Type: Three-generation study  
Species: Rat  
Application Route: Ingestion  
Result: positive  
Remarks: Based on data from similar materials

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rabbit  
Application Route: Ingestion  
Method: OECD Test Guideline 414  
Result: positive  
Remarks: Based on data from similar materials

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, based on animal experiments., Clear evidence of adverse effects on development, based on animal experiments.

**STOT - single exposure**

Not classified based on available information.

**STOT - repeated exposure**

May cause damage to organs through prolonged or repeated exposure.

**Components:**

**Ethylene glycol:**

Exposure routes: Ingestion  
Target Organs: Kidney  
Assessment: Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw.

**Repeated dose toxicity**

**Components:**

**Ethylene glycol:**

Species: Rat  
NOAEL: 150 mg/kg  
Application Route: Ingestion  
Exposure time: 2 yr

Species: Dog  
NOAEL: 2,200 - 4,400 mg/kg

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Application Route: Skin contact  
Exposure time: 4 Weeks  
Method: OECD Test Guideline 410

**Sodium 2-ethylhexanoate:**

Species: Rat  
NOAEL: 300 mg/kg  
Application Route: Ingestion  
Exposure time: 90 d  
Remarks: Based on data from similar materials

**Aspiration toxicity**

Not classified based on available information.

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**SECTION 12: Ecological information**

**12.1 Toxicity**

**Components:**

**Ethylene glycol:**

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 72,860 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 6,500 - 13,000 mg/l Exposure time: 96 h
Toxicity to fish (Chronic toxicity)	:	NOEC: 15,380 mg/l Exposure time: 7 d Species: Pimephales promelas (fathead minnow)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 8,590 mg/l Exposure time: 7 d Species: Ceriodaphnia dubia (water flea)

**Sodium 2-ethylhexanoate:**

Toxicity to fish	:	LC50 (Oryzias latipes (Japanese medaka)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 910 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 500 mg/l

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Exposure time: 72 h  
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 130 mg/l

Exposure time: 72 h  
Method: OECD Test Guideline 201

Toxicity to bacteria : EC10 (Pseudomonas putida): 71.7 mg/l  
Exposure time: 17 h  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 25 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 211  
Remarks: Based on data from similar materials

**Disodium tetraborate pentahydrate:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 79.7 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Ceriodaphnia dubia (water flea)): 91 mg/l  
Exposure time: 48 h  
Remarks: Based on data from similar materials

Toxicity to algae : EC10 (Pseudokirchneriella subcapitata (green algae)): 34 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

ErC50 (Pseudokirchneriella subcapitata (green algae)): 52.4 mg/l

Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

Toxicity to fish (Chronic toxicity) : NOEC: 11.2 mg/l  
Exposure time: 32 d  
Species: Pimephales promelas (fathead minnow)  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 10.8 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 211  
Remarks: Based on data from similar materials

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**12.2 Persistence and degradability**

**Components:**

**Ethylene glycol:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 90 - 100 %  
Exposure time: 10 d  
Method: OECD Test Guideline 301A

**Sodium 2-ethylhexanoate:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 99 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301E  
Remarks: Based on data from similar materials

**Disodium tetraborate pentahydrate:**

Biodegradability : Remarks: Not applicable

**12.3 Bioaccumulative potential**

**Components:**

**Ethylene glycol:**

Bioaccumulation : Species: Leuciscus idus (Golden orfe)  
Bioconcentration factor (BCF): 10

Partition coefficient: n-octanol/water : log Pow: -1.93

**Sodium 2-ethylhexanoate:**

Partition coefficient: n-octanol/water : log Pow: 1.3

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

Not relevant

**12.6 Other adverse effects**

No data available

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**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**

Product : Dispose of in accordance with local regulations.  
According to the European Waste Catalogue, Waste Codes

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are not product specific, but application specific.  
Waste codes should be assigned by the user, preferably in  
discussion with the waste disposal authorities.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.  
If not otherwise specified: Dispose of as unused product.

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**SECTION 14: Transport information**

**14.1 UN number**

Not regulated as a dangerous good

**14.2 UN proper shipping name**

Not regulated as a dangerous good

**14.3 Transport hazard class(es)**

Not regulated as a dangerous good

**14.4 Packing group**

Not regulated as a dangerous good

**14.5 Environmental hazards**

Not regulated as a dangerous good

**14.6 Special precautions for user**

Not applicable

**14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

Remarks : Not applicable for product as supplied.

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**SECTION 15: Regulatory information**

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

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Disodium tetraborate pentahydrate

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.  
Not applicable

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Other regulations : 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.

**15.2 Chemical safety assessment**

A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

**Full text of H-Statements**

H302	: Harmful if swallowed.
H319	: Causes serious eye irritation.
H360FD	: May damage fertility. May damage the unborn child.
H361d	: Suspected of damaging the unborn child.
H373	: May cause damage to organs through prolonged or repeated exposure if swallowed.

**Full text of other abbreviations**

Acute Tox.	: Acute toxicity
Eye Irrit.	: Eye irritation
Repr.	: Reproductive toxicity
STOT RE	: Specific target organ toxicity - repeated exposure
2000/39/EC	: Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
GB EH40	: UK. EH40 WEL - Workplace Exposure Limits
2000/39/EC / TWA	: Limit Value - eight hours
2000/39/EC / STEL	: Short term exposure limit
GB EH40 / TWA	: Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL	: Short-term exposure limit (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; 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; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; 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

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Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

**Further information**

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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