

# Safety Data Sheet

according to Regulation (EC) No 1907/2006

## Antifreeze Longlife

Print date: 30.04.2013

Part-no. 09163330

Page 1 of 10

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

Product group: Antifreezes

Catalogue-no.: 19 40 655

## Kühlerfrostschutz Longlife

### Antifreeze Longlife

### Produit antigel radiateur Longlife

#### Further trade names

None.

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

##### Use of the substance/mixture

Used in the automobile industry

#### 1.3. Details of the supplier of the safety data sheet

Company name: Adam Opel AG

Place: D 65423 Rüsselsheim

Telefax: +49-6142/ 749-503

e-mail: OPEL-helpdesk@ifz-berlin.de

Responsible Department: IFZ Ingenieurbüro und Consulting GmbH

Telefon: +49 30 2904897-10

Telefax: +49 - 30 / 2904897-20

#### 1.4. Emergency telephone

##### number:

Internationale Hotline: +49 6131 19240

United Kingdom +44 870 600 626 / 0870 600 6266

#### Further Information

No more data.

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

Indications of danger: Xn - Harmful

R phrases:

Harmful if swallowed.

#### 2.2. Label elements

Danger symbols: Xn - Harmful



Xn - Harmful

#### Hazardous components which must be listed on the label

Ethanediol

#### R phrases

22 Harmful if swallowed.

# Safety Data Sheet

according to Regulation (EC) No 1907/2006

## Antifreeze Longlife

Print date: 30.04.2013

Part-no. 09163330

Page 2 of 10

### S phrases

- 02 Keep out of the reach of children.  
23 Do not breathe vapour.  
46 If swallowed, seek medical advice immediately and show this container or label.  
60 This material and its container must be disposed of as hazardous waste.  
36/37 Wear suitable protective clothing and gloves.

### Additional advice on labelling

The product is classified and labelled in accordance with the EC directives or respective national laws.

### 2.3. Other hazards

No data available.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### Chemical characterization

Antifreeze, contains Ethanediol, corrosion inhibitor, organic substances and water.

#### Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification	
Index No	GHS classification	
REACH No		
203-473-3	Ethanediol	90 -< 95 %
107-21-1	Xn - Harmful R22	
603-027-00-1	Acute Tox. 4; H302	
205-743-6	2-Ethylhexanoic acid	2 -< 3 %
149-57-5	Repr. Cat. 3 R63	
607-230-00-6	Repr. 2; H361d ***	

Full text of R and H phrases: see Section 16.

### Further Information

Contains bitters.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information

Show this safety data sheet to the doctor in attendance. Move out of dangerous area. Never give anything by mouth to an unconscious person. Take off all contaminated clothing immediately. Remove and wash contaminated clothing before re-use.

#### After inhalation

Move to fresh air. Lay the affected person down, and keep her or him warm and calm. In case of irregular breathing or respiratory arrest: Oxygen or artificial respiration, if needed. If coughing, difficult breathing or other symptoms of poisoning occur, even after several hours, call a physician immediately.

#### After contact with skin

Wash contaminated skin areas thoroughly with soap and water.  
Preventive skin protection: skin protection cream.

#### After contact with eyes

Rinse with plenty of water immediately, also under the eyelids, for at least 15 minutes. Remove contact

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Antifreeze Longlife

Print date: 30.04.2013

Part-no. 09163330

Page 3 of 10

lenses, if applicable. If eye irritation persists, consult a specialist.

#### After ingestion

Call a physician immediately. If victim is conscious: Drink 1 or 2 glasses of water. If a person vomits when lying on their back, place them in the recovery position.

Do not induce vomiting. Aspiration of the liquid while swallowing incorrectly or vomiting can lead to serious pneumonia caused by chemicals.

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

Irritation to respiratory organs. Unconsciousness. Central nervous system disorders. Coordination and equilibrium disorders can occur. May cause: blurred vision. Vapours may cause drowsiness and dizziness. Disorientation. Abdominal pain and muscle pain. Difficulty in breathing. Mild eye irritation. Material sprayed or splashed into the eyes can cause symptoms or injuries such as redness, tearing and corneal damage. Mild skin irritation.

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

Ethylene glycol is metabolized to oxalic acid. Symptoms of poisoning can be delayed by administering ethanol (in the form of a 5% solution in a physiological salt solution, to maintain a blood level of 1 - 2 mg/ml). This treatment is only effective when it is begun within 6 hours after exposure. Call a physician or Poison Control Centre immediately.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media

Carbon dioxide (CO<sub>2</sub>), water spray mist, chemical fire extinguisher, alcohol-resistant foam.

#### Extinguishing media which must not be used for safety reasons

High volume water jet.

### 5.2. Special hazards arising from the substance or mixture

When heated or in the case of a fire, the formation of poisonous gases is possible. (carbon oxides, aldehydes, ketones)

The inhalation of hazardous decomposition products may cause serious health damage.

### 5.3. Advice for firefighters

Standard procedure for chemical fires. Use extinguishing measures that are appropriate to the environment. Water mist may be used to cool closed containers.

Special protective equipment for firefighters:

In the event of fire, wear self-contained breathing apparatus.

#### Additional information

Contaminated extinguishing water and soil must be disposed of in accordance with official regulations.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Remove all sources of ignition. Do not breathe in vapours and mist. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Higher exposure:

Self-contained breathing apparatus.

### 6.2. Environmental precautions

Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system. Contact the responsible authority immediately if the product ends up in the soil, a body of water, or the sewer system.

### 6.3. Methods and material for containment and cleaning up

Larger amounts: Contain the product immediately by taking suitable action.

Spilled or leaking material is to be soaked up with non-flammable absorbent materials (sand, soil, diatomaceous earth) and put in containers. Disposal in accordance with the official regulations.

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Antifreeze Longlife

Print date: 30.04.2013

Part-no. 09163330

Page 4 of 10

#### 6.4. Reference to other sections

Refer to safety instructions (see sections 7 and 8).  
 Suitable protective equipment: See section 8.  
 Dispose of as described in section 13.  
 See also section 11, 12.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

##### Advice on safe handling

Provide adequate ventilation and/or exhaust ventilation. Do not breathe in vapours or spray mist. Follow the maximum workplace concentration values. The product should only be used in areas from which all uncovered lights and other sources of ignition have been excluded. Take precautionary measures against static discharges. Avoid contact with skin and eyes. Personal protection equipment: See section 8.

##### Advice on protection against fire and explosion

Do not empty container with pressure, it is not a pressurised container. (Risk of bursting) Keep product and empty container away from heat and sources of ignition. Empty containers can contain residues of product. Empty containers can contain flammable and explosive vapours. Even after use, do not forcibly open and do not incinerate the container. Do not burn, or use a cutting torch on the empty drum. Keep away from sparks and flames. Risk of explosion ! Dispose of promptly. See section 13.

##### Further information on handling

Handle, store and transport in compliance with local regulations and in labelled containers that are suitable for this product. Reliable action must be taken to prevent ingress into the soil. Avoid emptying into the drains. Do not contaminate water.

#### 7.2. Conditions for safe storage, including any incompatibilities

##### Requirements for storage rooms and vessels

Store in original container. Keep tightly closed in a dry, cool and well-ventilated place. Protect from heat and direct sunlight. Keep away from sources of ignition - No smoking.

Keep at temperatures above -25 °C.

##### Advice on storage compatibility

Avoid contact with strong oxidising agents.  
 Keep away from food, drink and animal food stuffs.

##### Further information on storage conditions

No decomposition if stored and applied as directed.

#### 7.3. Specific end use(s)

No data available.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Exposure limits (EH40)

CAS No	Substance	ppm	mg/m <sup>3</sup>	fibres/ml	Category	Origin
107-21-1	Ethane-1,2-diol, vapour	20	52		TWA (8 h)	WEL
		40	104		STEL (15 min)	WEL

#### 8.2. Exposure controls

##### Occupational exposure controls

Provide sufficient air exchange and/or exhaust in work rooms. When the concentration in the air is over

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Antifreeze Longlife

Print date: 30.04.2013

Part-no. 09163330

Page 5 of 10

the maximum occupational exposure limit, an approved respiratory protection apparatus must be worn. Electrical systems and equipment must comply with the regulations.

#### Protective and hygiene measures

Handle in accordance with good industrial hygiene and safety practice. General industrial hygiene practice. When using, do not eat, drink, or smoke. Avoid contact with skin, eyes and clothing. Wash hands before breaks and at the end of the workday. Wash contaminated clothing before re-use. Keep away from food, drink, and animal food stuffs.

Women of child-bearing age should avoid contact with the product.

#### Respiratory protection

No personal respiratory protective equipment normally required. In case of insufficient ventilation, wear suitable respiratory equipment. Use respiratory equipment when gases, vapours/aerosols form.

Breathing apparatus with filter. Respirator with A filter (EN 14387).

If necessary: Self-contained breathing apparatus.

#### Hand protection

Protective gloves, chemical-resistant. The manufacturer recommends the following glove materials: chloroprene rubber, natural rubber, neoprene, nitrile rubber or polyvinyl chloride (PVC), rubber gloves. Penetration time of the glove material: Contact manufacturer.

Safety gloves should be selected for the actual conditions of use and in accordance with the instructions for use provided by the manufacturer. Please note that the daily use of a chemical glove in practice may be considerably shorter than the permeation time calculated in EN 374 as a result of many different factors (for example temperature). Use tested protective gloves.

Preventive skin protection: Protection cream can help to protect the skin surface. It should be applied before use.

#### Eye protection

Safety glasses with side-shields.

#### Skin protection

Light protective clothing

#### Environmental exposure controls

Should not be released into the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state:	liquid
Colour:	red-orange
Odour:	No data available.

pH-Value (at 20 °C):

**Test method**  
8.1 10 g/l water

#### Changes in the physical state

Melting point: No data available.

Boiling point: No data available.

Flash point: > 100 °C

#### Flammability

Solid: No data available.

Gas: No data available.

#### Explosive properties

The product is not explosive. In use, may form high flammable/explosive vapour air mixture.

Lower explosion limits: No data available.

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Antifreeze Longlife

Print date: 30.04.2013

Part-no. 09163330

Page 6 of 10

Upper explosion limits: No data available.

Ignition temperature: No data available.

**Auto-ignition temperature**

Solid: No data available.

Gas: No data available.

**Oxidizing properties**

No data available.

Vapour pressure: No data available.

Density (at 20 °C): approx. 1.1 g/cm<sup>3</sup>

Water solubility: completely soluble

Solubility in other solvents: No data available.

Partition coefficient: No data available.

Viscosity / dynamic: No data available.

Viscosity / kinematic: No data available.

Vapour density: No data available. (air = 1)

Evaporation rate: No data available.

Solvent separation test: No data available.

**9.2. Other information**

Surface tension: No data available.

**SECTION 10: Stability and reactivity****10.1. Reactivity**

No data available.

**10.2. Chemical stability**

Stable under proper storage and handling.

**10.3. Possibility of hazardous reactions**

No decomposition if stored and applied as directed.

**10.4. Conditions to avoid**

Keep away from heat and sources of ignition.

**10.5. Incompatible materials**

Reacts with: strong acids and oxidising agents

**10.6. Hazardous decomposition products**

Heating can release vapours which can be ignited.

**SECTION 11: Toxicological information****11.1. Information on toxicological effects****Toxicokinetics, metabolism and distribution**

No data available.

**Acute toxicity**

No data is available on the product itself. The information is based on tests done on similar products and/or product components.

Ethenediol:

This substance is suspected to induce renal toxicity.

Harmful if swallowed. LD<sub>50</sub> (oral, human): approx. 100 cm<sup>3</sup>.LD<sub>50</sub>/oral/rat: 4700 mg/kg

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Antifreeze Longlife

Print date: 30.04.2013

Part-no. 09163330

Page 7 of 10

2-Ethylhexanoic acid:  
LD50/oral/rat: 3000 mg/kg  
LD50/dermal/rabbit: > 2000 mg/kg

#### Specific effects in experiment on an animal

Ethenediol:  
Ingestion: An excessive exposure of laboratory animals results in toxic effects on the kidney and the liver. (> 10 - 100 mg/kg bw.)

2-Ethylhexanoic acid:  
Tissue changes (liver) after repeated application. Liver injury may occur. May cause birth defects. (Teratogenity) May impair fertility. (rats)

#### Irritation and corrosivity

Ethenediol:  
Mild skin irritation.  
Mild eye irritation. Material sprayed or splashed into the eyes can cause symptoms or injuries such as redness, tearing and corneal damage.  
Irritation to respiratory organs.

2-Ethylhexanoic acid:  
Skin irritation.

#### Sensitising effects

No data available.

#### Severe effects after repeated or prolonged exposure

Ethenediol:  
More severe effects (liver and kidney damage) if excessive exposure. Repeated excessive exposure can adversely affect an existing kidney disease. Inhalation of high vapour concentrations can cause CNS-depression and narcosis. May cause: tremors or spasm, unconsciousness.

#### Carcinogenic/mutagenic/toxic effects for reproduction

Reproduction toxicity: Possible risk of harm to the unborn child.

## SECTION 12: Ecological information

### 12.1. Toxicity

The information is based on tests done on similar products and/or product components.

Acute toxicity to fish: LC50 > 100 mg/l  
Toxicity to bacteria: EC50 > 100 mg/l

Ethenediol:  
Acute toxicity to fish: LC50/Rainbow trout (*Oncorhynchus mykiss*)/96h: > 18500 mg/l

Daphnia toxicity:  
EC50 / Daphnia magna / 24h: 74000 mg/l

Toxicity to bacteria:  
EC50 / Pseudomonas putida / 16 h: > 10000 mg/l

### 12.2. Persistence and degradability

Highly biodegradable.

### 12.3. Bioaccumulative potential

No data available.

### 12.4. Mobility in soil

No data available.

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Antifreeze Longlife

Print date: 30.04.2013

Part-no. 09163330

Page 8 of 10

#### **12.5. Results of PBT and vPvB assessment**

No data available.

#### **12.6. Other adverse effects**

AOX information: Contains no organically bonded halogens.

#### **Further information**

Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system.

### SECTION 13: Disposal considerations

#### **13.1. Waste treatment methods**

##### **Advice on disposal**

Do not flush into surface water or sanitary sewer system. Disposal in accordance with the official regulations. Where possible recycling is preferred to disposal or incineration. Contact waste disposal services.

##### **Waste disposal number of waste from residues/unused products**

070604 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics; other organic solvents, washing liquids and mother liquors  
Classified as hazardous waste.

##### **Waste disposal number of used product**

160114 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); antifreeze fluids containing dangerous substances  
Classified as hazardous waste.

##### **Waste disposal number of contaminated packaging**

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by dangerous substances  
Classified as hazardous waste.

##### **Contaminated packaging**

Disposal in accordance with the official regulations. Emptied containers can contain residues of product.  
See also section 7.

### SECTION 14: Transport information

#### **Land transport (ADR/RID)**

**14.1. UN number:** Not applicable**14.2. UN proper shipping name:** Not applicable**14.3. Transport hazard class(es):** Not applicable**14.4. Packing group:** Not applicable

##### **Other applicable information (land transport)**

Not classified as dangerous regarding transport regulations.

#### **Inland waterways transport (ADN)**

**14.1. UN number:** Not applicable**14.2. UN proper shipping name:** Not applicable**14.3. Transport hazard class(es):** Not applicable**14.4. Packing group:** Not applicable

##### **Other applicable information (inland waterways transport)**

Not classified as dangerous regarding transport regulations.



## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Antifreeze Longlife

Print date: 30.04.2013

Part-no. 09163330

Page 9 of 10

#### Marine transport (IMDG)

**14.1. UN number:** Not applicable

**14.2. UN proper shipping name:** Not applicable

**14.3. Transport hazard class(es):** Not applicable

**14.4. Packing group:** -

#### Other applicable information (marine transport)

Not classified as dangerous regarding transport regulations.

#### Air transport (ICAO)

**UN/ID number:** Not applicable

**14.2. UN proper shipping name:** Not applicable

**14.3. Transport hazard class(es):** Not applicable

**14.4. Packing group:** -

#### Other applicable information (air transport)

Not classified as dangerous regarding transport regulations.

#### 14.5. Environmental hazards

Dangerous for the environment: no

#### 14.6. Special precautions for user

See section 6, 7, 8.

#### 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available.

### SECTION 15: Regulatory information

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

##### EU regulatory information

1999/13/EC (VOC): VOC value (%): 0

##### Additional information

No Substances of Very High Concern (SVHC) according REACH Article 57.

##### National regulatory information

#### 15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

### SECTION 16: Other information

#### Changes

Section: 8, 14

#### Abbreviations and acronyms

n.a. = not applicable

n.d. = not determined

SVHC = substance of very high concern

VOC = Volatile organic compounds

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

22 Harmful if swallowed.

63 Possible risk of harm to the unborn child.

#### Further Information

The information is based on present levels of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights.



## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Antifreeze Longlife

Print date: 30.04.2013

Part-no. 09163330

Page 10 of 10

The product is to be used exclusively for the applications named in the technical leaflet or in the processing instructions.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.

---

*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*

# MIXING TABLE

## Long Life antifreeze

Cooling system capacity in litres	Mixing table for a freezing point (to ASTM D1177) as low as						
	-10°C	-15°C	-20°C	-25°C	-30°C	-35°C	-40°C
	The proportion of Long Life antifreeze in litres is as follows:						
5	1.1	1.4	1.7	2.0	2.2	2.4	2.6
6	1.3	1.7	2.0	2.3	2.6	2.9	3.1
7	1.5	2.0	2.4	2.7	3.1	3.4	3.7
8	1.7	2.2	2.7	3.1	3.5	3.9	4.2
9	1.9	2.5	3.0	3.5	3.9	4.3	4.7
10	2.1	2.8	3.4	3.9	4.4	4.8	5.2
11	2.3	3.1	3.7	4.3	4.8	5.3	5.8
12	2.5	3.3	4.1	4.7	5.3	5.8	6.3
13	2.7	3.6	4.4	5.1	5.7	6.3	6.8
14	3.0	3.9	4.7	5.5	6.1	6.7	7.3
15	3.2	4.2	5.1	5.9	6.6	7.2	7.8
16	3.4	4.5	5.4	6.2	7.0	7.7	8.4
17	3.6	4.7	5.7	6.6	7.4	8.2	8.9
18	3.8	5.0	6.1	7.0	7.9	8.7	9.4
19	4.0	5.3	6.4	7.4	8.3	9.2	9.9
20	4.2	5.6	6.8	7.8	8.8	9.6	10.5
Contents in percent by volume	21.1 Vol.%	27.9 Vol.%	33.8 Vol.%	39 Vol.%	43.8 Vol.%	48.2 Vol.%	52.3 Vol.%
<p><b>Important note:</b> For dilutions with less than 33% v/v of Long Life antifreeze (in other words a freezing point above -20°C), it is no possible to guarantee corrosion protection.</p> <p>For cooling systems with a capacity of over 20 litres, the Long Life antifreeze content can be calculated by adding the values from the appropriate lines.</p> <p><b>Example:</b> Required freezing point temperature -25°C, cooling system capacity 28 litres:</p> <p>Line 1 "20 litres" means 7.8 litres of Long Life antifreeze,</p> <p>Line 2 "8 litres" means 3.1 litres of Long Life antifreeze,</p> <p>28 litres : 7.8 + 3.1 = 10.9 litres Long Life antifreeze for a freezing point as low as -25°C</p>							