DEUTSCHE PENTOSIN-WERKE GMBH

Material Safety Data Sheet according to EC directive 2001/58/EC

Printing date 01.03.2005 *Reviewed on 18.06.2002*

1 Identification of substance

Product details

Trade name **LONGTIME ANTIFREEZE**

Article number *0313100*

Application of the substance / the preparation *engine coolant*

Manufacturer/Supplier:
Deutsche Pentosin-Werke GmbH
Industriestraße 39-43
D-22880 Wedel
Germany
Phone ++49 4103 9134-0
Fax ++49 4103 9134-71

Informing department: *Department QM-UM-Safety*
Emergency information: *++49 4103 9134-0*

2 Composition/Data on components:

Hazardous ingredients

Longtime Antifreeze:
1,2-ethanediol

Conc.: 95 %
CAS Number: 107-21-1
EC-Number: 203-473-3
INDEX-Number: 603-027-00-1
Hazard symbol(s): Xn
R-phrase(s): 22

Dilutions of Longtime Antifreeze:
1,2-ethanediol

Conc.: >30 %
CAS Number: 107-21-1
EC-Number: 203-473-3
INDEX-Number: 603-027-00-1
Hazard symbol(s): Xn
R-phrase(s): 22

The wording of the hazard symbols and R-phrases is specified in chapter 16 if dangerous ingredients are mentioned.

3 Hazard identification:

Harmful if swallowed.

4 First aid measures

4.1 Eye contact:
- If irritation persists: consult a doctor/medical service - Rinse with water - Do not apply neutralizing agents

4.2 Skin contact:
If irritation persists: consult a doctor/medical service Rinse with water - Soap may be used - Remove clothing before washing

4.3 After inhalation:
If breathing problems develop: consult a doctor/medical service - Remove the victim into fresh air - Unconscious: maintain adequate airway and respiration

4.4 After ingestion:
If you fee I unwell: consult a doctor/medical service Immediately after ingestion: give lots of water to drink Never give water to an unconscious person Victim is fully conscious: induce vomiting

5 Fire-fighting measures

5.1 Suitable extinguishing media:
- *Water spray*
- *Polyvalent foam*
- *Alcohol foam*
- *Polymer foam*
- *BC powder*

5.2 Unsuitable extinguishing media:
- Container may slop over if solid jet is applied

5.3 Special exposure hazards:
Combustible - On burning: release of carbon monoxide and carbon dioxide

5.4 Instructions:
- Cool tanks/drums with water spray/remove them into safety

5.5 Special protective equipment for firefighters:
- Heat/fire exposure: compressed air/oxygen apparatus - Large spills/in enclosed spaces: compressed air apparatus

6 Accidental release measures

6.1 Personal protection/precautions:
See heading 8.1/8.3/10.3

6.2 Environmental precautions:
Contain leaking substance, pump over in suitable containers - Plug the leak, cut off the supply

6.3 Methods of cleaning up:
Liquid spill: take up in(to) non-combustible absorbent material e.g.: sand, earth, vermiculite or powdered limestone Absorbed substance: shovel in closing drums Clean contaminated surfaces with an excess of water Wash clothing and equipment after handling

7 Handling and storage

7.1 Handling:
- *Observe normal hygiene standards*
- *Use earthed equipment*
- *Remove contaminated clothing immediately*
- *Clean contaminated clothing*
- *Meet the legal requirements*

7.2 Storage:
- *Keep container tightly closed*
- *Store in a dry area Ventilation at floor level*
- *Fireproof storeroom*
- *Meet the legal requirements*

- *Keep away from: heat sources, combustible materials, oxidizing agents, acids, bases, water/moist*

Storage temperature	*N.D.*	*°C*
Quantity limit	*N.D.*	*Kg*
Storage life	*N.D.*	*days*

Materials for packaging
- *suitable :* *stainless aluminium, steel, polyethylene, polypropylene, glass,*

- *to avoid:* *zinc*

7.3 Specific uses:
- *See information supplied by the manufacturer*

8 Exposure controls/personal protection

8.1 Exposure limit values:

l,2-ETHANEDIOL:

TLV-TWA	*: -*	*mg/m3*		*ppm*
TLV-STEL	*: -*	*mg/m3*		*ppm*
TLV-Ceiling	*: 100 Aerosol*	*mg/m3*		*ppm*
OES-LTEL	*: 10 part/52 va*	*mg/m3*	*-*	*ppm*
OES-STEL	*: -part/104 va*	*mg/m3*	*-*	*ppm*
MAK	*: 26*	*mg/m3*	*10*	*ppm*
TRK	*:*	*mg/m3*		*ppm*
MAC-TGG 8 h	*: 52 damp*	*mg/m3*		
MAC-TGG 15 min.	*: 104 damp*	*mg/m3*		
MAC-Ceiling	*:*	*mg/m3*		
VME-8 h	*: -*	*mg/m3*	*-*	*ppm*
VLB-15 min.	*: 125 vapeur*	*mg/m3*	*50 vapeur*	*ppm*
GWBB-8 h	*: -*	*mg/m3*	*-*	*ppm*
GWK-15 min.	*:*	*mg/m3*		*ppm*
Momentary value	*: 101 a*	*mg/m3*	*-*	*ppm*
EC	*: 52*	*mg/m3*	*20*	*ppm*
EC-STEL	*: 104*	*mg/m3*	*40*	*ppm*

Sampling methods:

- *Ethylene Glycol* *NIOSH 5523*
- *Ethylene Glycol* *OSHA CSI*

8.2 Exposure controls:
8.2.1 Occupational exposure controls:
- Measure the concentration in the air regularly - Work under local exhaust/ventilation

8.2.2 Environmental exposure controls: *see heading 13*

8.3 Personal protection:
8.3.1 respiratory protection:
- Gas mask with filter type A
- High gas/vapour concentration: compressed air/oxygen apparatus

8.3.2 hand protection:
- Gloves suitable materials:

GIVE EXCELLENT RESISTANCE:
Butyl rubber
Chlorosulfonated polyethylene
Natural rubber
Neoprene
Nitrile rubber
Neoprene/natural rubber
PVC
Viton Nitrile rubber/PVC

GIVE GOOD RESISTANCE:
Chloroprene rubber
Chlorinated polyethylene
Polyurethane

GIVE LESS RESISTANCE:
Neoprene/SBR
PVA

8.3.3 eye protection:
- Safety glasses

8.3.4 skin protection:
- Protective clothing suitable materials:

GIVE EXCELLENT RESISTANCE:
Butyl rubber
Chlorosulfonated polyethylene
Natural rubber
Neoprene
Nitrile rubber
Neoprene/natural rubber
PVC Vi ton Nitrile rubber/PVC

GIVE GOOD RESISTANCE:
Chloroprene rubber
Chlorinated polyethylene
Polyurethane

9 Physical and chemical properties

9.1 General information:

Appearance (at 20°C)	*Liquid*	
Odour	*Almost odourless*	
Colour	*Colourless*	

9.2 Important health, safety and environmental information:

pH value (33%-ige solution)	*8*	
Boiling point/boiling range	*> 165*	*°C*
Flashpoint (Cleveland open cup)	*124*	*°C*
(pensky Martens closed cup)	*102*	*°C*
Explosion limits	*3,2 – 15,3*	*Vol% (20°C)*
Vapour pressure (at 20°C)	*0,08*	*hPa*
Vapour pressure (at 50°C)	*N.D.*	*hPa*
Relative density (at 20°C)	*1,1*	
Water solubility	*complete*	
Soluble in	*ethanol, acetone, acetic acid, glycerol, pyridine*	
Relative vapour density	*2,1*	
Viscosity (at 20°C)	*0,021*	*Pa.s*
Partition coefficient n-octanol/water	*N.D.*	
Evaporation rate		
ratio to butyl acetate	*N.D.*	
ratio to ether	*N.D.*	

9.3 Other information:

Melting point/melting range		
(33%-ige solution)	*-17*	*°C*
Auto-ignition point	*> 432*	*°C*
Saturation concentration	*0,31*	*g/m²*

10 Stability and reactivity

10.1 Conditions to avoid/reactivity:
- *Hygroscopic*

10.2 Materials to avoid:
- *Keep away from: heat sources, combustible materials, oxidizing agents, acids, bases, water/moist*
- *Keep away from: zinc*

10.3 Hazardous decomposition products:
- *On burning: release of carbon monoxide and carbon dioxide*
- *Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion*
- *Violent to explosive reaction with (some) acids*
- *Reacts on exposure to water and heat with (some) metals*
- *Reacts on exposure to temperature rise with (some) bases*

11 Toxicological information

11.1 Acute toxicity:

1,2-ETHANEDIOL:

LD5O oral rat	*> 5000*	*mg/Kg*
LD5O dermal rabbit	*N.D.*	*mg/Kg*
LD5O dermal rabbit	*10483*	*mg/Kg*
LC5O inhalation rat	*N.D.*	*mg/1/4 h*

11.2 Chronic toxicity:

1,2-ETHANEDIOL:

EC carc. cat.	*Not listed*
EC muta. cat.	*Not listed*
EC repr. cat.	*Not listed*
Carcinogenicity (TLV)	*A4*
Carcinogenicity (MAC)	*Not listed*
Carcinogenicity (VME)	*Not listed*
Carcinogenicity (GWBB)	*Not listed*
Carcinogenicity (MAK)	*Not listed*
Mutagen1city (MAK)	*Not listed*
Teratogenicity (MAK)	*Group C*

Not listed

11.3 Routes of exposure:

ingestion, inhalation, eye and skin Warning! Substance is absorbed through the skin

11.4 Acute effects/symptoms:

AFTER INHALATION:

EXPOSURE TO HIGH CONCENTRATIONS:

- *Irritation of the respiratory tract*
- *Dry/sore throat*
- *Irritation of the nasal mucous membranes*

AFTER INGBSTION:

AFTER ABSORPTION OF HIGH QUANTITIES:

- *Feeling of weakness*
- *CNS depression*
- *Nausea*
- *Vomiting*
- *Gastrointestinal complaints*
- *Difficulty in swallowing*
- *Headache*
- *Dizziness*
- *Narcosis*
- *Drunkenness*
- *Disturbed tactile sensibility*
- *Disturbed motor response*
- *Visual disturbances*
- *Disturbances of consciousness*
- *Brain affection*

- *Accelerated heart action*
- *Low arterial pressure*

- *Change in the haemogramme/blood composition*
- *Rapid respiration*
- *Cramps/uncontrolled muscular contractions*

FOLLOWING SYMPTOMS MAY APPEAR LATER:
- *Blue/grey discolouration of the skin*
- *Decreased renal function*
- *Change in urine composition*
- *Change in urine output*

AFTBR BYB CONTACT:
ON CONTINUOUS EXPOSURE/CONTACT:
- *Irritation of the eye tissue*
- *Redness of the eye tissue*
- *Lacrimation*

11.5 Chronic effects:
- *None known*

12 Ecological information

12.1 Ecotoxicity:
1,2-ETHANBDIOL:

- *LC50 (96 h) 40761 mg/l (SALMO GAIRDNERI/ONCORHYNCHUS MYKISS)*
- *EC50 (48 h) 41100 mg/l (DAPHNIA MAGNA)*
- *EC50 (96 h) 6.5/13 g/l (SELENASTRUM CAPRICORNUTUM)*

12 .2 Mobility:
- *Volatile organic compounds (VOC): < 70 %*
- *Soluble in water*

For other physicochemical properties see section 9

12.3 Persistence and degradability:

- *biodegradation BODs*		*N.D.*	*% ThOD*
- *water*		*readily biodegradable*	
- *soil*	*T 1/2*	*N.D.*	*days*

12.4 Bioaccumulative potential:
- *log Pow : N.D.*
- *BCF : N. D..*
- *Not bioaccumulative*

12.5 0ther adverse effects:
- *WGK: 1*

(classification based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 17 May 1999)
- *Effect on the ozone layer*

Not dangerous for the ozone layer (1999/45/EC)
- *Greenhouse effect*

No data available
- *Effect on waste water purification*

No data available

13 Disposal considerations

13.1 provisions relating to waste:
- *Waste material code (91/689/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 07 01 04 (other organic solvents, washing liquids and mother liquors)*
- *Waste material code (Flanders): 015*
- *Hazardous waste (91/689/EEC)*

13.2 Disposal methods:
- *Remove to an authorized incinerator*
- *Substance must not be discharged into the sewer*
- *Do not discharge into surface water*

13.3 Packaging:
- *Waste material code packaging (91/689/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 15 01 10 (packaging containing residues of or contaminated by dangerous substances)*

14 Transport information

14.1 Classification of the substance in compliance with UN Recommendations *UN number*

CLASS	*NOT SUBJECT*
SUB RISKS PACKING	
PROPER SHIPPING NAME	

14.2 ADR (transport by road)

CLASS	*NOT SUBJECT*
PACKING	
DANGBR LABEL TANKS	
DANGBR LABEL PACKAGES	

14.3 RID (transport by rail)

CLASS	*NOT SUBJECT*
PACKING	
DANGER LABEL TANKS	
DANGBR LABBL PACKAGES	

14.4 ADNR (transport by inland waterways)

CLASS	*NOT SUBJECT*
PACKING	
DANGER LABEL TANKS	
DANGER LABEL PACKAGES	

14.5 IMDG (maritime transport)

CLASS	*NOT SUBJECT*
SUB RISKS	
PACKING	
MFAG	
EMS	
MARINE POLLUTANT	

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14.6 ICAO (air transport)

CLASS *NOT SUBJECT*
SUB RISKS
PACKING
PACKING INSTRUCTIONS PASSENGER AIRCRAFT
PACKING INSTRUCTIONS CARGO AIRCRAFT

14.7 Special precautions in connection with transport

Not restricted for any mode of international transport

15 regulatory information

*Labelling in accordance with EC directives 67/548/EEC and 1999/45/EC (**; see heading 16)*

Label	*Harmful Xn*
Contains	*1,2-ethanediol*
R22	*Harmful if swallowed*
S(02)	*(Keep out of reach of children)*
S20	*When using do not eat or drink*
S46	*If swallowed, seek medical advice immediately and show this container or label*

16 Other information

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

N.A. *= NOT APPLICABLE*
N.D. *= NOT DETERMINED*
***** *= INTERNAL CLASSIFICATION*

(**) Labelling:
The labelling of the substance described in this MSDS complies with the provisions of Directive 1999/45/EC of 31 May 1999, published in the Official Journal of the European Communities L 200 of 30/07/1999. This Directive replaces Directive 88/379/EEC of 7 June 1988, published in the Official Journal of the European Communities L 187 of 16/07/1988.
Member States shall apply the laws, regulations and administrative provisions referred to in article 22 of this Directive:
(a) to preparations not within the scope of Directive 91/414/EEC or Directive 98/8/EC as from 30 July 2002; and
(b) to preparations within the scope of Directive 91/414/EEC or Directive 98/8/EC as from 30 July 2004.

Full text of any R-phrases referred to under heading 2:

R22 Harmful if swallowed

Exposure limits:

TLV	*Threshold Limit Value - ACGIH US 2002*
OES	*Occupational Exposure Standards - United Kingdom 1999*
MEL	*Maximum Exposure Limits - United Kingdom 1999*
MAK	*Maximale Arbeitsplatzkonzentrationen - Germany 2001*
TRK	*Technische Richtkonzentrationen - Germany 2001*
MAC	*Maximale aanvaarde concentratie - the Netherlands 2002*
VME	*Valeurs limites de Moyenne d'Exposition - France 1999*
VLE	*Valeurs limites d'Exposition A court terme - France 1999*

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GWBB *Grenswaarde beroepsmatige blootstelling - Belgium 2002*
GWK *Grenswaarde kortstondige blootstelling - Belgium 2002*
EC *Indicative occupational exposure limit values - directive 2000/39/EC*

I	*Inhalable fraction*	***T***	*Total dust*	***E***	*Einatembarer Aerosolanteil*
R	*Respirable fraction*	***A***	*Alveolengängiger Aeroslanteil/Alveolar dust*		
C	*Ceiling limit*				

a	*aerosol*		***r***	*rook/Rauch*	*(furne)*
d	*damp*	*(vapour)*	***st***	*stof/Staub*	*(dust)*
du	*dust*		***ve***	*vezel*	*(fibre)*
fa	*Faser*	*(fibre)*	***va***	*vapour*	
fi	*fibre*		***om***	*oil mist*	
fu	*fume*		***on***	*olienevel/Ölnebel*	*(oil mist)*
p	*poussière*	*(dust)*	***part***	*particles*	

Chronic toxicity:
K *List of the carcinogenic substances and processes - The Netherlands 2002*