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

1.1. Product identifier

Glysantin® G48®

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

Relevant identified uses: engine coolant

1.3. Details of the supplier of the safety data sheet

Company: BASF SE
67056 Ludwigshafen
GERMANY

Contact address: BASF plc
PO Box 4, Earl Road, Cheadle Hulme,
Cheadle, Cheshire
SK8 6QG, UNITED KINGDOM

Telephone: +44 161 485-6222
E-mail address: product-safety-north@basf.com

1.4. Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

Acute Tox. 4 (oral)
STOT RE (Kidney) 2
According to Directive 67/548/EEC or 1999/45/EC

Possible Hazards:
Harmful if swallowed.
Harmful: danger of serious damage to health by prolonged exposure if swallowed.

For the classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements

Globally Harmonized System, EU (GHS)

Pictogram:

Signal Word:
Warning

Hazard Statement:
H302 Harmful if swallowed.
H373 May cause damage to organs (Kidney) through prolonged or repeated exposure.

Precautionary Statements (Prevention):
P260 Do not breathe dust/gas/mist/vapours.
P270 Do not eat, drink or smoke when using this product.
P264 Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response):
P311 Call a POISON CENTER or doctor/physician.
P301 + P330 IF SWALLOWED: rinse mouth.

Precautionary Statements (Disposal):
P501 Dispose of contents/container to hazardous or special waste collection point.

According to Regulation (EC) No 1272/2008 [CLP]

Hazard determining component(s) for labelling: ETHANE-1,2-DIOL/ETHYLENEGLYCOL

According to Directive 67/548/EEC or 1999/45/EC


Hazard symbol(s)
Xn Harmful.

R-phrase(s)
R22 Harmful if swallowed.
R48/22 Harmful: danger of serious damage to health by prolonged exposure if swallowed.

S-phrase(s)
S2 Keep out of the reach of children.
S24/25 Avoid contact with skin and eyes.
S46 If swallowed, seek medical advice immediately and show this container or label.

Hazard determining component(s) for labelling: ETHANE-1,2-DIOL/ETHYLENEGLYCOL

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]
No specific dangers known, if the regulations/notes for storage and handling are considered.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical nature

ethanediol; ethylene glycol

inhibitors

This product contains (a) substance(s) included on the candidate list according to article 59 (1,10) of regulation EC No. 1907/2006 (‘REACH’) in a concentration equal or above 0.1% w/w: disodium tetraborate pentahydrate; borax pentahydrate

Hazardous ingredients (GHS) according to Regulation (EC) No. 1272/2008

ethanediol; ethylene glycol
Glysantin® G48®

Content (W/W): > 90 %
CAS Number: 107-21-1
EC-Number: 203-473-3
REACH registration number: 01-2119456816-28
INDEX-Number: 603-027-00-1

Acute Tox. 4 (oral)
STOT RE (Kidney) 2
H302, H373

2-ethylhexanoic acid, sodium salt
Content (W/W): > 2 % - < 3 %
CAS Number: 19766-89-3
EC-Number: 243-283-8

Repr. 2 (unborn child)
H361d

disodium tetraborate pentahydrate; borax pentahydrate
Content (W/W): >= 0.3 % - <= 1 %
CAS Number: 12179-04-3
EC-Number: 215-540-4
REACH registration number: 01-2119490790-32

Eye Dam./Irrit. 1
Repr. 1B (fertility)
H318, H360FD

Specific concentration limit:
Repr. 1B: >= 6.5 %

Hazardous ingredients
according to Directive 1999/45/EC

ethanediol; ethylene glycol
Content (W/W): > 90 %
CAS Number: 107-21-1
EC-Number: 203-473-3
REACH registration number: 01-2119456816-28
INDEX-Number: 603-027-00-1
Hazard symbol(s): Xn
R-phrase(s): 22, 48/22

2-ethylhexanoic acid, sodium salt
Content (W/W): 2 % - < 3 %
CAS Number: 19766-89-3
EC-Number: 243-283-8
Hazard symbol(s): Xn
R-phrase(s): 63

disodium tetraborate pentahydrate; borax pentahydrate
Content (W/W): >= 0.3 % - <= 1 %
CAS Number: 12179-04-3
EC-Number: 215-540-4
REACH registration number: 01-2119490790-32
Hazard symbol(s): T
R-phrase(s): 41, 60, 61
Repr. Cat. 2
For the classifications not written out in full in this section, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, the full text is listed in section 16.

SECTION 4: First-Aid Measures

4.1. Description of first aid measures
Remove contaminated clothing.

If inhaled:
If difficulties occur after vapour/aerosol has been inhaled, remove to fresh air and seek medical attention.

On skin contact:
Wash thoroughly with soap and water.

On contact with eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open.

On ingestion:
Rinse mouth immediately and then drink plenty of water, seek medical attention. Administer 50 ml of pure ethanol in a drinkable concentration.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

Further important symptoms and effects are so far not known.

4.3. Indication of any immediate medical attention and special treatment needed
Treatment: Symptomatic treatment (decontamination, vital functions).

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media
Suitable extinguishing media:
water spray, dry powder, alcohol-resistant foam, carbon dioxide

5.2. Special hazards arising from the substance or mixture
harmful vapours
Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

5.3. Advice for fire-fighters
Special protective equipment:
Wear a self-contained breathing apparatus.
Further information:
The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

SECTION 6: Accidental Release Measures

High risk of slipping due to leakage/spillage of product.

6.1. Personal precautions, protective equipment and emergency procedures
Use personal protective clothing.

6.2. Environmental precautions
Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

6.3. Methods and material for containment and cleaning up
For large amounts: Pump off product.
For residues: Pick up with suitable absorbent material. Dispose of absorbed material in accordance with regulations.

6.4. Reference to other sections
Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling
Ensure thorough ventilation of stores and work areas. Shut containers immediately after taking product because product takes up the humidity of air.

Protection against fire and explosion:
No special precautions necessary.

7.2. Conditions for safe storage, including any incompatibilities
Further information on storage conditions: Containers should be stored tightly sealed in a dry place. Storage in galvanized containers is not recommended.

7.3. Specific end use(s)
For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters
Components with occupational exposure limits

107-21-1: ethanediol; ethylene glycol
   TWA value 52 mg/m³ ; 20 ppm (OEL (EU))
   indicative
   STEL value 104 mg/m³ ; 40 ppm (OEL (EU))
   indicative
   Skin Designation (OEL (EU))
   The substance can be absorbed through the skin.
   TWA value 10 mg/m³ (WEL/EH 40 (UK)), Particulate
   TWA value 52 mg/m³ ; 20 ppm (WEL/EH 40 (UK)), vapour
   STEL value 104 mg/m³ ; 40 ppm (WEL/EH 40 (UK)), vapour
   Skin Designation (WEL/EH 40 (UK)), Particulate
   The substance can be absorbed through the skin.
   Skin Designation (WEL/EH 40 (UK)), vapour
   The substance can be absorbed through the skin.

12179-04-3: disodium tetraborate pentahydrate; borax pentahydrate
   TWA value 1 mg/m³ (WEL/EH 40 (UK))

Refer to the current edition of HSE Guidance Note EH40 Occupational Exposure Limits (United Kingdom).

8.2. Exposure controls

Personal protective equipment

Respiratory protection:
   Suitable respiratory protection for higher concentrations or long-term effect: Combination filter for
gases/vapours of organic compounds and solid and liquid particles (f.e. EN 14387 Type A-P2)

Hand protection:
   Chemical resistant protective gloves (EN 374)
   Suitable materials also with prolonged, direct contact (Recommended: Protective index 6,
corresponding > 480 minutes of permeation time according to EN 374):
   nitrile rubber (NBR) - 0.4 mm coating thickness
   Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:
   Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:
   Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting
   boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case
   of dust).

   General safety and hygiene measures
   Do not inhale gases/vapours/aerosols. Handle in accordance with good industrial hygiene and safety
   practice. Wearing of closed work clothing is recommended. No eating, drinking, smoking or tobacco
   use at the place of work.
SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form: liquid
Colour: blue
Odour: product specific
Odour threshold: No applicable information available.

pH value: 7.1 - 7.3
solidification temperature: < -18 °C (DIN ISO 3016)
Boiling point: >= 165 °C (ASTM D1120)
Flash point: > 126.5 °C (DIN EN 22719; ISO 2719)

Evaporation rate: Value can be approximated from Henry's Law Constant or vapor pressure.

Flammability: not flammable
Lower explosion limit: 4.9 %(V) (20 °C) (air)
Upper explosion limit: 14.6 %(V) (20 °C) (air)
Ignition temperature: > 440 °C (DIN 51794)
Vapour pressure: 0.2 hPa (20 °C)

Density: 1.122 g/cm3 (20 °C) (DIN 51757)

Solubility in water: soluble, The product has not been tested. The statement has been derived from the properties of the individual components.
Solubility (qualitative) solvent(s): polar solvents soluble
Partitioning coefficient n-octanol/water (log Kow): Study scientifically not justified.

Self ignition: not self-igniting
Thermal decomposition: No decomposition if correctly stored and handled.
Viscosity, kinematic: 20 - 30 mm2/s (20 °C) (DIN 51562)

Explosion hazard: not explosive
Fire promoting properties: not fire-propagating

9.2. Other information

Miscibility with water: miscible in all proportions
Hygroscopy: hygroscopic
Other Information: If necessary, information on other physical and chemical parameters is indicated in this section.
SECTION 10: Stability and Reactivity

10.1. Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals: No corrosive effect on metal.

10.2. Chemical stability
The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions
No hazardous reactions when stored and handled according to instructions.

10.4. Conditions to avoid
No conditions to avoid anticipated.

10.5. Incompatible materials
Substances to avoid:
strong oxidizing agents

10.6. Hazardous decomposition products
Hazardous decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity
Assessment of acute toxicity:
Of moderate toxicity after single ingestion. Of low toxicity after short-term skin contact.

Experimental/calculated data:
LD (human) (oral): approx. 1,600 mg/kg

LD50 rabbit (dermal): > 2,000 mg/kg
Literature data.

Irritation
Experimental/calculated data:
Skin corrosion/irritation rabbit: non-irritant
Serious eye damage/irritation rabbit: non-irritant

Respiratory/Skin sensitization

Assessment of sensitization:
Skin sensitizing effects were not observed in animal studies. Human data do not fully exclude a skin sensitizing potential.

Developmental toxicity

Information on: ethanediol; ethylene glycol
Assessment of teratogenicity:
In animal studies the substance caused malformations when given at high doses.

Repetetd dose toxicity and Specific target organ toxicity (repeated exposure)

Information on: ethanediol; ethylene glycol
Assessment of repeated dose toxicity:
The substance may cause damage to the kidney after repeated ingestion. The substance may cause damage to the kidney after repeated skin contact with high doses.

Other relevant toxicity information

The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.

SECTION 12: Ecological Information

12.1. Toxicity

Toxicity to fish:
LC50 (96 h) > 100 mg/l, Leuciscus idus

Aquatic invertebrates:
EC50 (48 h) > 100 mg/l, Daphnia magna

Aquatic plants:
EC50 (72 h) > 100 mg/l, algae

Microorganisms/Effect on activated sludge:
Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

12.2. Persistence and degradability

Elimination information:
> 70 % DOC reduction (28 d) (OECD 301 A (new version)) Readily biodegradable.
12.3. Bioaccumulative potential

Bioaccumulation potential:
Accumulation in organisms is not to be expected.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Volutility: The substance will not evaporate into the atmosphere from the water surface.
Adsorption in soil: Adsorption to solid soil phase is not expected.

12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

12.6. Other adverse effects

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

12.7. Additional information

Other ecotoxicological advice:
Do not release untreated into natural waters.

The product has not been tested. The statements on ecotoxicology have been derived from the properties of the individual components.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Must be disposed of or incinerated in accordance with local regulations.

The waste codes are manufacturer's recommendations based on the designated use of the product. Other use and special waste disposal treatment on customer's location may require different waste-code assignments.

The UK Environmental Protection (Duty of Care) Regulations (EP) and amendments should be noted (United Kingdom).

This product and any uncleaned containers must be disposed of as hazardous waste in accordance with the 2005 Hazardous Waste Regulations and amendments (United Kingdom)

Waste key:
Contaminated packaging:
Uncontaminated packaging can be re-used,
Packs that cannot be cleaned should be disposed of in the same manner as the contents.

### SECTION 14: Transport Information

#### Land transport

**ADR**

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<td>UN proper shipping name:</td>
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<tr>
<td>Transport hazard class(es):</td>
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<td>Packing group:</td>
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<td>Environmental hazards:</td>
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#### RID

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<tr>
<td>Packing group:</td>
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<td>Environmental hazards:</td>
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<td>Special precautions for user</td>
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#### Inland waterway transport

**ADN**

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<td>Transport hazard class(es):</td>
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<td>Special precautions for user</td>
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<td>Environmental hazards:</td>
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<td>Special precautions for user</td>
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#### Sea transport

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<td>Environmental hazards:</td>
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<td>Special precautions for user</td>
<td>None known</td>
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IMDG

UN number: Not classified as a dangerous good under transport regulations
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known

Air transport

IATA/ICAO

UN number: Not classified as a dangerous good under transport regulations
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known

14.1. UN number
See corresponding entries for “UN number” for the respective regulations in the tables above.

14.2. UN proper shipping name
See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.

14.3. Transport hazard class(es)
See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.

14.4. Packing group
See corresponding entries for “Packing group” for the respective regulations in the tables above.

14.5. Environmental hazards
See corresponding entries for “Environmental hazards” for the respective regulations in the tables above.

14.6. Special precautions for user
See corresponding entries for “Special precautions for user” for the respective regulations in the tables above.
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Regulation: Not evaluated
Shipment approved: Not evaluated
Pollution name: Not evaluated
Pollution category: Not evaluated
Ship Type: Not evaluated

SECTION 15: Regulatory Information

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

The data should be considered when making any assessment under the Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, for example, 'COSHH Essentials' (United Kingdom).
This product is classified under the Chemicals (Hazard Information and Packaging) Regulations, (CHIP) (United Kingdom).

15.2. Chemical Safety Assessment

Chemical Safety Assessment not yet performed due to registration timelines

SECTION 16: Other Information

Assessment of the hazard classes according to UN GHS criteria (most recent version)

Acute Tox. 4 (oral)
STOT RE (Kidney) 2

Full text of the classifications, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, if mentioned in section 2 or 3:

Xn Harmful
T Toxic
22 Harmful if swallowed.
48/22 Harmful: danger of serious damage to health by prolonged exposure if swallowed.
63 Possible risk of harm to the unborn child.
41 Risk of serious damage to eyes.
60 May impair fertility.
61 May cause harm to the unborn child.
Acute Tox. Acute toxicity
STOT RE Specific target organ toxicity — repeated exposure
Repr. Reproductive toxicity
Eye Dam./Irrit. Serious eye damage/eye irritation
Repr. Cat. 2  Reprotoxic substances (fertility or development) Category 2: Substances which should be regarded as if they cause developmental toxicity to in humans or substances which should be regarded as if they impair fertility in humans.

H302  Harmful if swallowed.
H373  May cause damage to organs (Kidney) through prolonged or repeated exposure.
H361d  Suspected of damaging the unborn child.
H318  Causes serious eye damage.
H360FD  May damage fertility. May damage the unborn child.

If you have any queries relating to this MSDS, its contents or any other product safety related questions, please write to the following e-mail address: product-safety-north@basf.com

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.