

Glysantin[®] G 48

Glysantin G 48 is an engine coolant concentrate based on ethylene glycol. It contains a hybrid corrosion inhibitor package with salts of organic acids and silicates. Glysantin G 48 is free of nitrites, amines and phosphates.

Glysantin G 48 was developed to protect car, truck and bus engines of both ferrous and aluminium construction against corrosion and frost damage. It contains a blend of inhibitors designed to give a high degree of corrosion protection to engine components such as radiators, cylinder blocks/heads and water pumps.

Glysantin G 48 meets the requirements of both the ASTM D 3306 and BS 6580:1992 - standards. Glysantin G 48 also got the following OEM-approvals :

- BMW BMW N 600 69.0
- German Army TL 6850-0038/1
- KHD H-LV 0161 0188
- MAN MAN 324-NF
- Mercedes-Benz DBL 7700.20, page 325.0
- MTU MTL 5048
- Opel/General Motors B 040 0240
- Saab 6901599
- VW/Audi/Seat/Skoda TL 774-C

Glysantin G 48 should possibly not be mixed with silicate free, OAT engine coolants.

Glysantin G 48 must be diluted with water before use. It is hard water compatible and can be mixed with tap water* before filling into the cooling system to give solutions in the concentration range of 33 to 50 % by volume.

* For preparation of the coolant use clean, not overly hard water. Waste water from mining, sea water, brackish water, brine, industrial waste water are all unsuitable.

The analysis of the water should not exceed the following limits:

| | |
|------------------|-------------------------------|
| Water hardness | 0 to 20 °dGH (0 - 3.6 mmol/l) |
| Chloride content | max. 100 ppm |
| Sulphate content | max. 100 ppm |

Should the analysis of the water exceed the approved limits, then it has to be suitably treated, for example by mixing with pure, distilled or deionised water. Excessive chloride or sulphate levels can be corrected in this way.

Glystantin G 48

Chemical nature

Ethylene glycol with inhibitors

Appearance

Clear liquid

Technical data

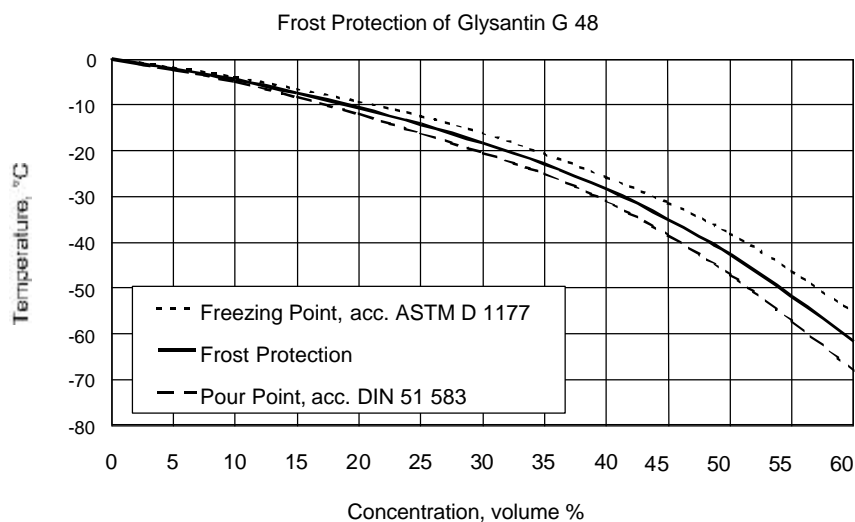
| | | |
|------------------------------|---------------------------------|--------------|
| Density at 20 °C | 1.121 - 1.123 g/cm ³ | DIN 51 757/4 |
| Refractive index at 20 °C | 1.432 - 1.434 | DIN 51 423/2 |
| Boiling point | ≥ 165 °C | ASTM D 1120 |
| Flash point | > 120 °C | DIN ISO 2592 |
| pH value | 7.1 – 7.3 | ASTM D 1287 |
| Reserve alkalinity, M/10 HCl | 13 - 15 ml | ASTM D 1287 |
| Ash content | max. 1.5 % | ASTM D 1119 |
| Water content | max. 3.5 % | DIN 51 777/1 |

Solubility

| | |
|------------------------|--------------------------|
| Miscibility with water | freely miscible |
| Hard water stability | stable, no precipitation |

Technical data of Glystantin G 48 – Water mixtures

| | | |
|-------------------------------|---------------|-------------|
| Freezing point | | ASTM D 1177 |
| 50 % vol. in water | below - 38 °C | |
| 33 % vol. in water | below - 18 °C | |
| Pour point | | DIN 51 583 |
| 50 % vol. in water | below - 45 °C | |
| 33 % vol. in water | below - 23 °C | |
| Viscosity, mm ² /s | | DIN 51 562 |
| At 0 °C, 50 % vol. in water | 7.0 – 10.0 | |
| 33 % vol. in water | 3.0 – 5.0 | |
| At 80 °C, 50 % vol. in water | 0.9 – 1.1 | |
| 33 % vol. in water | 0.5 – 0.8 | |



| | | | |
|--------------------------------|--|------------------|--|
| Foaming characteristics | ASTM D 1881 | max. 50 ml / 3 s | |
| Swelling of rubber | at 80°C/168 h 50 % volume in water | 0 - 3 % | for the SBR and EPDM qualities normally encountered on the market, i. e. the same order of magnitude as that for pure water. |

Corrosion Performance

Glassware Corrosion Test

ASTM D 1384

| Metals and alloys | average weight loss (mg/coupon) | spec. limit (mg/coupon) |
|-------------------|---------------------------------|-------------------------|
| Copper | 0.1 | 10 |
| Solder | 0.3 | 30 |
| Brass | 0.2 | 10 |
| Steel | - 0.2 *) | 10 |
| Cast iron | - 1.0 *) | 10 |
| Aluminium | - 1.1 *) | 30 |

Heat Transfer Corrosion Test

ASTM D 4340-89

| | typical weight loss (mg/cm ² /week) | spec. limit (mg/cm ² /week) |
|-----------|--|--|
| Aluminium | - 0.07 *) | 1.0 |

Simulated Service Test

ASTM D 2570

| Metals and alloys | typical weight loss (mg/coupon) | spec. limit (mg/coupon) |
|-------------------|---------------------------------|-------------------------|
| Copper | 8.8 | 20 |
| Solder | 0.0 | 60 |
| Brass | 10.7 | 20 |
| Steel | 0.1 | 20 |
| Cast iron | - 1.1 *) | 20 |
| Aluminium | - 1.2 *) | 60 |

*) remark: negative values mean increase of weight.

Aluminium Water Pump Test

ASTM D 2809

| Test Period | test result | spec. limit ASTM D 3306 |
|-------------|-------------|----------------------------|
| 100 hours | 9 | 8 |

ASTM cavitation corrosion rating:
10 - perfect 1 - perforated

| | |
|--|--|
| Quality control | The above data represent average values at the time of going to press of this data sheet. They can not be regarded as specified data. Specified product data are issued as a separate product specification. |
| Storage stability | Glysantin G 48 has a shelf life of at least three years when stored in originally closed, air-tight containers at temperatures of maximum 30 °C. Do not use galvanized containers for storage because they may corrode. |
| Safety Data Sheet | A Safety Data Sheet conforming to EC-Directive 91/155/EEC is available for Glysantin G 48. |
| Handling | The usual precautions for handling chemicals together with the information and advice contained in our Safety Data Sheet should be observed for Glysantin G 48. Avoid contact with skin. |
| Compatibility with other coolants | Most coolant blends are based on carefully balanced mixtures of various corrosion inhibitors. Mixing of coolants with different inhibitor packages can lead to loss of corrosion protection. Glysantin G 48 should therefore not be mixed with silicate free, OAT engine coolants. |
| Note | The information submitted in this publication is based on our current knowledge and experience. In view of the many factors that may affect processing and application, these data do not relieve processors of the responsibility of carrying out their own tests and experiments; neither do they imply any legally binding assurance of certain properties or of suitability for a specific purpose. It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed. |

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