



OPUS LUBRICANTS PRODUCT DATA

ANTIFREEZE 5XHD

Description

Opus Antifreeze 5XHD is an ethylene glycol based engine coolant concentrate formulated for optimum performance in heavy duty diesel engine applications but equally suitable for light duty use. It employs established inhibitor technology and is nitrite, amine and phosphate (NAP) free. BTC Classification Type 3E

The inhibitors in **5XHD** include organic acids in combination with borate and silicate to provide excellent corrosion protection in all applications.

5XHD uses a superior silicate stabilisation technology to eliminate the potential for formation of silicate gel often observed with inferior products whilst other additives ensure good compatibility with hard water and prevent the formation of scale that can result from use of hard water.

Physical Properties

| Parameter | Method | 5XHD | ASTM D3306 | |
|--|-------------|--------------|---------------|---------|
| Appearance | Visual | Clear Liquid | Not Specified | |
| Density @ 20°C mg/cm ³ | ASTM D 4052 | 1.123 | 1.110 - 1.145 | |
| Equilibrium Reflux Boiling Point °C | ASTM D 1120 | 170 | 163 min | |
| Freezing Point °C (50% Dilution by vol.) | ASTM D 1177 | -40 | -37 max | |
| Freezing Point °C (33% Dilution by vol.) | ASTM D 1177 | -20 | | |
| pH (50% vol.) | ASTM D 1287 | 8.0 | 7.5 – 11.0 | |
| Reserve Alkalinity 0.1N HCl | ASTM D 1121 | 15 | Report | |
| Water Content | ASTM D 1123 | 3 | 5 max | |
| Foaming properties | Vol. (ml) | ASTM D 1881 | 30 | 150 max |
| | Break (s) | | 2 | 5 max |



Corrosion Protection

| | Weight Loss mg / Coupon | | | | | |
|-------------------|--------------------------------|--------|-------|-------|-----------|-----------|
| | Copper | Solder | Brass | Steel | Cast Iron | Aluminium |
| ASTM D 3306 (max) | 10 | 30 | 10 | 10 | 10 | 30 |
| 5XHD | 0.9 | 2.0 | 1.0 | 0.9 | 0.2 | -2.8 |

ASTM D 4340 Corrosion of Aluminium under heat rejecting conditions

| | Weight Loss mg / cm² / week |
|-------------------|---|
| ASTM D 3306 (max) | 1.0 |
| 5XHD | 0.2 |

ASTM D 2570 Simulated Service Corrosion Test

| | Weight Loss mg / Coupon | | | | | |
|-------------------|--------------------------------|--------|-------|-------|-----------|-----------|
| | Copper | Solder | Brass | Steel | Cast Iron | Aluminium |
| ASTM D 2570 (max) | 20 | 60 | 20 | 20 | 20 | 60 |
| 5XHD | 2.0 | 5.1 | 3.0 | 2.2 | 0.5 | -2 |

ASTM D 2809 Cavitation Corrosion Characteristics of Aluminium Pumps

| | Visual Rating |
|-------------------|----------------------|
| ASTM D 3306 (max) | 8 |
| 5XHD | 9 |



Freeze Protection

| | Concentration by Volume % | | | | |
|-------------------------------|---------------------------|-------|-------|-------|-------|
| | 25 | 33 | 40 | 50 | 60 |
| Specific Gravity 20 / 4 °C | 1.030 | 1.045 | 1.060 | 1.074 | 1.087 |
| Freeze Protection * °C | -12 | -22 | -27 | -40 | -56 |

Consumer Safety

5XHD contains the aversive agent denatonium benzoate to prevent accidental ingestion of coolant prepared from it. The concentration of the aversive is 70ppm which is in compliance with all current legislation intentionally that requires an aversive agent be used in ethylene glycol based antifreeze.

Performance Standards

5XHD exceeds the requirements of most European and International Standards including: ASTM D3306, ASTM D 4985, SAE J 1034, BS 6580 (1992), AFNOR NF R15601, JIS K2234 and the performance requirements of ASTM D 6210.

Revision Date: May 2018

Ferguson & Menzies Ltd
312 Broomloan Road
GLASGOW
G51 2JW

Tel: 0141 445 3555
Fax: 0141 425 1079
E-Mail: info@fergusonmenzies.co.uk
Web: www.fergusonmenzies.co.uk