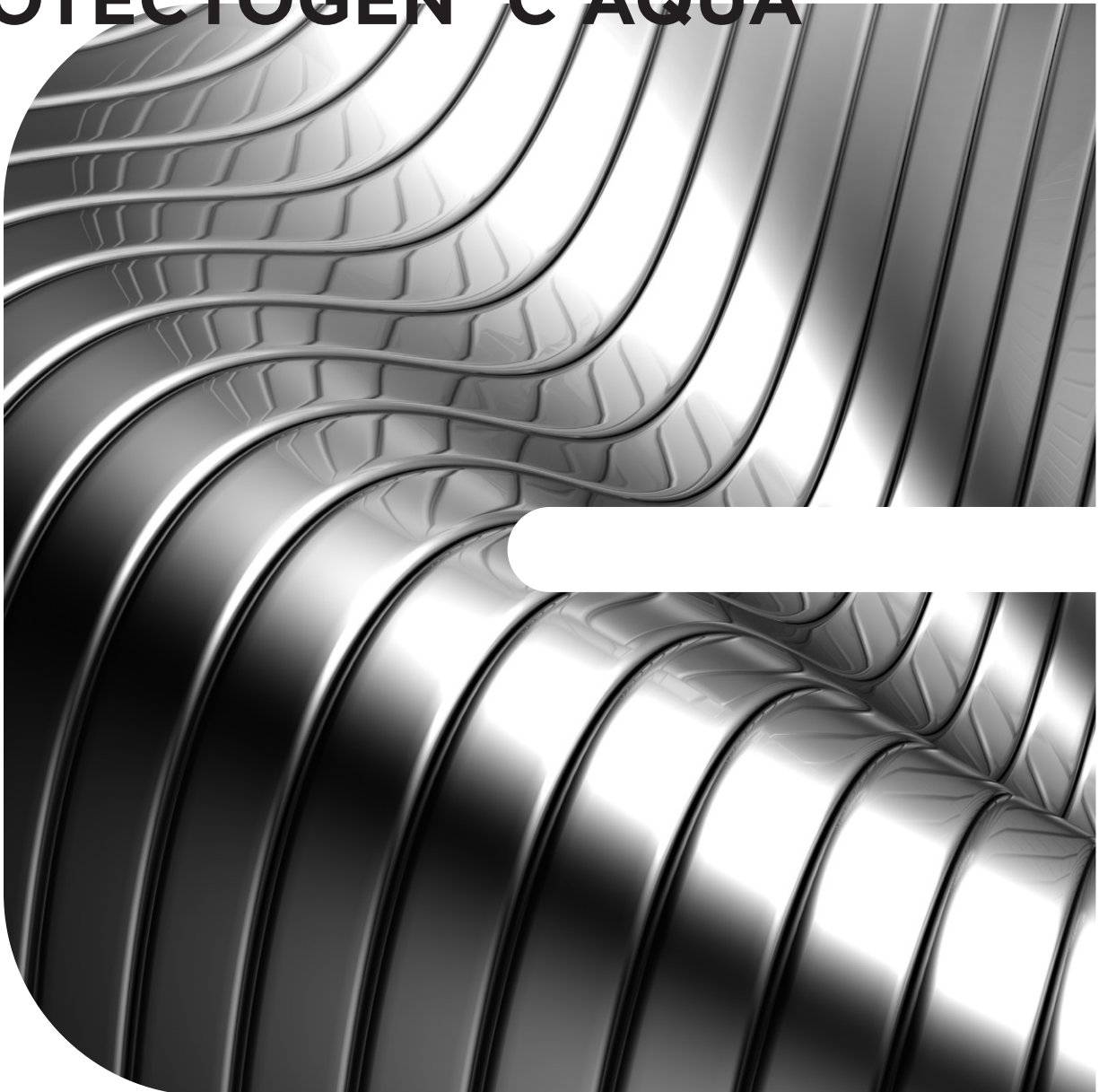


Corrosion Inhibitor
PROTECTOGEN® C AQUA



PROTECTOGEN® C AQUA

CORROSION INHIBITOR

Protectogen C aqua is a glycol free corrosion inhibitor concentrate for cold water systems with closed heating or cooling circuits without frost protection.

Protectogen C aqua contains a highly efficient combination of inhibitors providing a long-lasting corrosion protection in your installations. The concentration of Protectogen C aqua in water should be 1.5 % v/v (chloride content < 100 ppm, water hardness 0° - 20° GH).

Protectogen C aqua is inhibited without the use of nitrite, amine, borate, phosphate and silicate, does neither contain CMR substances (Cancerogenic Mutagenic Reprotoxic) nor any other restricted substances as described in the EG-guideline 2011/65/EG, article 4 §1 (i.e. lead, mercury, cadmium, chromate VI, polybrominated biphenyl or diphenyl ether).

Protectogen C aqua is classified to be toxicologically harmless, readily biodegradable and non-toxic to aquatic organism and meets the requirements of the German water hazard class WGK 1. It complies with our standards for sustainable acting and responsible care.

Protectogen C aqua keeps its operational efficiency over many years. Clariant advises to verify the performance during regular maintenance by Antifrogen Service every 2 years, which is free of charge.

Product characteristics

Appearance (at 20 °C) _____ clear yellowish liquid, water soluble
Density (20 °C, DIN 51757) _____ 1.070 g/cm³
Refractive Index (20 °C, DIN 51423 part 2) _____ 1.385
Recommended usage concentration _____ 1.5 % v/v in water
Recommended permanent usage temperature _____ +5 to +95 °C

CORROSION INHIBITION PERFORMANCE

To determine the performance of corrosion inhibitors in heat transfer fluids the method ASTM D 1384 has established as a standardized test for various metals and alloys. Protectogen C aqua possesses an excellent protection performance even after prolonged test duration of 1000 h. The very minor weight losses of tested metals/alloys demonstrate the suitability for permanent usage.



Stat. Corrosion acc. ASTM D 1384
Test concentration: 1,5 % v/v
Protectogen C aqua in ASTM water
Test duration: 336 hours



Stat. Corrosion acc. ASTM D 1384
Test concentration: 1,5 % v/v
Protectogen C aqua in ASTM water
Test duration: 1000 hours

| Metal | Water ^a | Protectogen C aqua ^b 336 hours | Protectogen C aqua ^c 336 hours | Protectogen C aqua ^c 1000 hours | Limits ^d |
|-------------|--------------------|--|--|---|---------------------|
| copper | -2.1 | -0.7 | -1.0 | -0.7 | 3.6 |
| soft solder | -79.2 | -0.7 | -5.2 | -2.3 | 11.2 |
| brass | -7.5 | -1.0 | -1.6 | -1.0 | 3.6 |
| steel | -162.7 | -0.3 | -0.3 | -0.4 | 3.6 |
| gray iron | -218.7 | -0.1 | -0.2 | -3.2 | 3.5 |
| AlSi6Cu3 | -32.8 | -3.2 | -2.7 | -0.8 | 10.4 |

Given values show the weight losses/increases of the metals in g/m² (acc. ASTM D 1384)

^a water without inhibitor

^b 1.5% v/v Protectogen C aqua in deionized water

^c 1.5% v/v Protectogen C aqua in ASTM water

^d limits of ASTM D 1384 in accordance to ASTM D 3306-05 (Glycol Base Engine Coolant for Automobile)

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