

Corrosion Inhibitor  
**PROTECTOGEN<sup>®</sup> 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 (Carcinogenic 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/cm<sup>3</sup>  
 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 <sup>a</sup>	Protectogen C aqua <sup>b</sup> 336 hours	Protectogen C aqua <sup>c</sup> 336 hours	Protectogen C aqua <sup>c</sup> 1000 hours	Limits <sup>d</sup>
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/m<sup>2</sup> (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)

This information corresponds to the present state of our knowledge and is intended as a general description of our products and their possible applications. Clariant makes no warranties, express or implied, as to the information's accuracy, adequacy, sufficiency or freedom from defect and assumes no liability in connection with any use of this information. Any user of this product is responsible for determining the suitability of Clariant's products for its particular application. \*Nothing included in this information waives any of Clariant's General Terms and Conditions of Sale, which control unless it agrees otherwise in writing. Any existing intellectual/industrial property rights must be observed. Due to possible changes in our products and applicable national and international regulations and laws, the status of our products could change. Material Safety Data Sheets providing safety precautions, that should be observed when handling or storing Clariant products, are available upon request and are provided in compliance with applicable law. You should obtain and review the applicable Material Safety Data Sheet information before handling any of these products. For additional information, please contact Clariant.

**\*For sales to customers located within the United States and Canada the following applies in addition:**  
 NO EXPRESS OR IMPLIED WARRANTY IS MADE OF THE MERCHANTABILITY, SUITABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE OF ANY PRODUCT OR SERVICE.

® Trademark of Clariant registered in many countries

© 2014 Clariant International Ltd



[www.clariant.com](http://www.clariant.com)

**Clariant International Ltd**  
 BU Industrial & Consumer Specialties  
 Rothausstrasse 61, CH-4132 Muttenz

**Commercial**  
 Phone: +41 61 469 7834

**Application Development**  
 Phone: +49 8679 74 665