# **HARTOL**



### ANTIFREEZE G12 CONCENTRATE

#### DESCRIPTION

ANTIFREEZE G12 CONCENTRATE is premium quality long life coolant for cooling of petrol and diesel engines modern cars. Protect the engine against freezing, overheating, and cavitation corrosion. Produced according to the Organic Additive Technology (OAT). G12+ antifreeze is free of nitrites, amines, phosphates, silicates, borates and free 2-ethylhexanoic acid.

#### **APPLICATION**

Recommended replacement interval: for passenger cars each 250 000 km., for commercial vehicles each 500 000 km., or every 5 years. Before placing it into vehicle system, it should be diluted with distilled or deionized water to the desired concentration. The proportions are indicated in the table:

Dilution (vol.)	Concentrate	Water	Frost protection	
2:1	67%	33 %	-55°C	
1:1	50%	50%	-38°C	
1:2	33%	67%	-25°C	

#### **SPECIFICATIONS**

- BS 6580
- FVV HEFT R 443
- AFNOR R 15/601
- SAE J 1034
- JASO M325
- Önorm V5123
- UNE 26361-88/1
- FSD 8704
- ASTM D3306 / D4656/ D4985
- NATO S759
- Porsche/VW/Audi/Seat
   Fiat 9.5523 /Skoda TL 774 D/F
- MB 325.3 / MB 326.3

- Mercedes-Benz Truck DTFR 29C110 / 29D110
- Ford WSS-M97B44-D
- CUMMINS CES 14603 & 14439
- CUMMINS IS series u N14
- MAN 324 SNF
- BMW GS94000
- DAF 74002
- Deutz DOC CB-14
- GM Chevrolet
- Opel-GM GMW3420

- GM Saab B0401065
- GM Saturn
- GM- Vauxhall GME I 1301
- GM- Vauxhall GMW3420
- John Deere JDM H5
- lveco 18-1830
- Renault-Nissan 41-01-001/ S type D
- Volvo Penta
- Renault Trucks 41-01-001/ Type D
- Volvo Trucks-Volvo coolant VCS





## TYPICAL PROPERTIES

Appearance	Clear liquid, free from matter in suspension	Visual
<ul> <li>Density at 20 °C</li> </ul>	> 1.1 g/cm³	ASTM D
	1.1 g/ 3111	4052
<ul><li>Freezing point (1:1)</li></ul>	-38°C	ASTM D 1177
<ul> <li>Boiling Point</li> </ul>	172°C	ASTM D 1120
• pH (1:1)	7.5-11.0	ASTM D 1287
• Reserve alkalinity (0,1 HCI/10	0 ml) > 5 ml	ASTM D 1121
<ul> <li>Foaming characteristics at 8</li> </ul>	38 °C 45 ml / 2 s	ASTM D 1881

# ANTICORROSION PROPERTIES

ASTM D1384 Glassware Corrosion Test Results:

		Weight Loss mg/ Coupon					
		Copper	Solder	Brass	Steel	Cast	Aluminu
		Сорреі	Soldel	Diass	Steel	Iron	m
ASTM (max)	D3306	10	30	10	10	10	30
Typical		1,1	1,8	0,9	0,8	-0,9	1,2

ASTM D 4340 Aluminum Corrosion under heat rejecting conditions:

	Weight Loss mg/ cm²/week
ASTM D 3306 (max)	1,0
Typical	0,1

#### COMPATIBILITY WITH OTHER COOLANTS

Coolant is fully miscible with other coolants and can be safely mixed with them. However, most coolants contain a balanced compound of corrosion inhibitors. You may affect anticorrosion protection by mixing coolants with different inhibitors. Recommended to use deionized or demineralized water to dilute antifreeze. Storage temperature:  $-30^{\circ}$ C to  $+35^{\circ}$ C. Avoid direct sunlight!