



## MANNOL Antifreeze AF12+ (-40 °C) Longlife 4012

A carboxylated (organic – OAT Organic Acid Technology) ready-for-use solution, designed for a year-round use in any modern cooling systems for which the use of ethylene-glycol-based antifreeze is recommended. It ensures a reliable protection of any cooling system.

Product properties:

- It ensures a reliable protection of metals and alloys (brass, copper, alloy-treated steel, cast iron, aluminium) from all forms of corrosion, as well as prevents a high-temperature corrosion of aluminium surfaces of modern engines;
- It has an exceptional thermal stability. It protects from deposit formation;
- It has excellent heat conductivity properties and a resistance to foam formation;
- It is neutral to inserts and hoses, compatible with all types of rubber and plastic components of a cooling system;
- It has an excellent resistance to hard water and very low corrosion inhibitor depletion rates;
- The highly effective carboxylated additive package (OAT) ensures an exceptional stability of service qualities of the antifreeze throughout the entire service life;
- It does not contain silicates, nitrates, phosphates and amines (the NAP free technology);
- It has an extended service life in cooling systems: of passenger cars – up to 250 thousand km; of commercial vehicles – up to 500 thousand km; of stationary engines – up to 6 years.

It is recommended for engines requiring enhanced heat dissipation: highly accelerated engines, engines with a turbocharger and cooling systems of modern commercial vehicles.

Colour: red.

Service life: no less than 5 years.

Comply with the manufacturer's instructions provided in the user's manual!

### Specifications

#### Approval

#### Recommendation

SAE J1034

JASO M325

AFNOR FRANCE NF R15-601 (except for RA)

ASTM USA D3306  
ASTM USA D4656  
ASTM USA D4985  
ASTM USA D6210  
BSI GB BS 6580:2010  
FVW GERMANY Heft R443  
KSM SOUTH KOREA 2142  
MIL BELGIUM BT-PS-606-A  
MIL FRANCE DCSEA 615/C  
MIL ITALY E/L-1415b  
MIL SWEDEN FSD 8704  
NATO S-759  
OENORM AUSTRIA V5123  
UNE SPAIN 26-361-88/1  
ADE  
ASTON MARTIN  
VOLKSWAGEN TL 774 D  
VOLKSWAGEN TL 774 F  
BEHR  
BERGEN ENGINES 2.13.01  
BMW GS 94000  
BRB BR 637  
CASE NEW HOLLAND MAT 3624  
CATERPILLAR MAK A4.05.09.01  
CHEVROLET  
CLAAS  
CUMMINS CES 14439  
CUMMINS CES 14603  
CUMMINS IS series N14  
DAF 74002  
DETROIT DIESEL 93K217  
FENDT  
FORD WSS-M97B44-D  
GREAT WALL  
HITACHI  
ISUZU  
JAGUAR CMR 8229  
JAGUAR STJLR.651.5003  
JENBACHER TA 1000-0201  
JOHN DEERE JDM H5  
KAROSA  
KOBELCO  
KOMATSU 07.892 (2009)  
LAND ROVER STJLR.651.5003  
LEYLAND TRUCKS DW03245403  
LIEBHERR MD1-36-130  
MACK 014 GS 17009  
MAN 324 SNF  
MAN B W A S  
MAN B W DIESEL AG D36 5600  
MAZDA MEZ MN 121 D  
MB 325.3  
MINI GS 94000  
MITSUBISHI MHI  
MTU MTL 5048  
MWM 0199-99-2091/11  
RENAULT 41-01-001/Type D

## PACKAGING

5L	MN4012-5	Plastic	
1000L	MN4012-IBC	Pallet tank	
208L	MN4012-DR	Drum	
60L	MN4012-60	Drum	
20L	MN4012-20	Plastic	
10L	MN4012-10	Plastic	
1L	MN4012-1	Plastic	20 pcs/box