



## MANNOL Antifreeze AF12+ Longlife 4112

A carboxylated (organic – OAT Organic Acid Technology) concentrated antifreeze intended for a year-round use in any modern cooling system 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 provides sufficient anti-corrosion properties from the concentration as low as 20%;
- 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!

| Pour point, °C | Mix ratio, % |    |
|----------------|--------------|----|
|                |              |    |
| -20            | 35           | 65 |
|                |              |    |
| -29            | 45           | 55 |
|                |              |    |

## 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

DACIA 41-01-001 / 41-01-001-T

DAF 74002

DETROIT DIESEL DFS 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 Typ SNF  
 MAN B W A S  
 MAN B W DIESEL AG D36 5600  
 MAZDA MEZ MN 121 D  
 MB 325.3  
 MITSUBISHI MHI  
 MTU MTL 5048  
 MWM 0199-99-2091/11

## PACKAGING

|       |            |             |            |
|-------|------------|-------------|------------|
| 5L    | MN4112-5   | Plastic     |            |
| 1000L | MN4112-IBC | Pallet tank |            |
| 208L  | MN4112-DR  | Drum        |            |
| 60L   | MN4112-60  | Drum        |            |
| 20L   | MN4112-20  | Plastic     |            |
| 10L   | MN4112-10  | Plastic     |            |
| 1L    | MN4112-1   | Plastic     | 20 pcs/box |