
Freecor® JNC

1 Description

Freecor® JNC is a MEG-based all-round coolant that exceeds the industry standards **JIS K 2234:2018**, **ASTM D3306** and **BS 6580**, and is suitable for use in Japanese and Korean vehicles

In today's combustion engines, the engine and cooling system needs to be protected against corrosion and frost damage. Therefore, the engine coolant needs to provide freezing and boiling protection, be compatible with

commonly used metals and elastomers while providing efficient heat transfer.

Exempt from potentially harmful additives such as nitrites, borates and amines, **Freecor® JNC** also contributes to a safer environment. The coolant is also free of silicates, which excludes any possible issues caused by instable silicate gel or silicate drop-out.

2 Benefits

Freecor® JNC offers the following benefits to the user:

- | | |
|---|--|
| ▪ highly performing corrosion protection | well-balanced hybrid inhibitor package |
| ▪ efficient frost & boiling protection | |
| ▪ seal compatible | |
| ▪ hard water stable | unique sequestering package |

3 Application

Freecor® JNC provides year-round frost and corrosion protection. It is recommended to use at least 33 vol. % of the antifreeze in the final coolant solution. This provides freezing protection to -18°C. Concentrations higher than 70 vol. % are not recommended as the maximum frost protection is reached.

4 Proof of Performance & Standards

This in-house developed technology has established excellent performance, with outstanding corrosion protection for in excess of 80,000 km in automotive applications. **Freecor® JNC** fully complies with following standards:

- **JIS K 2234:2018**
- **ASTM D3306**
- **British Standard BS 6580:2010**

Freecor[®] JNC

5 Availability

Freecor[®] JNC is available undyed. Please contact your local area sales manager on availability of packages, dilutions and colours or customized variants.

6 Storage requirements & Product handling

The product should be stored above -20°C and preferably at ambient temperatures. Periods of exposure to temperatures above 35°C should be minimized.

Freecor[®] JNC can be stored up to 2 years if stored unopened plastic containers without any effect on the product quality or performance. It is strongly recommended to use new dark and not recycled containers.

As with any antifreeze coolant, the use of galvanized steel is not recommended for pipes or any other part of the storage/blending installation.

7 Toxicity & safety

For Toxicity and Safety Data we refer to the Safety Data Sheet. The information and advice given should be observed and due attention should be given to the precautions

necessary for handling chemicals. This product should not be used to protect the inside of drinking water systems against freezing. The transport is not regulated.

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Freecor[®] JNC

Addendum - Technical information

Chemical and physical properties

	Freecor [®] JNC	method
Appearance	Clear liquid, slightly yellowish	visual
Density, 20°C, kg/l	1.116 typ.	ASTM D5931
pH in water, 30 vol%	7.5 typ.	ASTM D1287
Water content, %	3.5% typ.	ASTM D1123
Reserve alkalinity, ml HCl 0.1N (inflection point)	15.6 typ.	ASTM D1121
Reserve alkalinity, ml HCl 0.1N (pH 5.5)	4.4 typ.	ASTM D1121
Boiling point, °C	169°C typ.	ASTM D1120
Foaming properties, 30 vol.%	1 ml typ.	JIS K2234:2018
50 vol.%	50ml / 2s typ.	ASTM D1188
Freezing Point, °C 30 vol.%	-15.0°C typ.	ASTM D1177
50 vol.%	-36.7°C typ.	

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JIS K2234:2018 Metal Corrosion properties (30vol%, 336 hrs)

	Weight changes in mg/cm ²					
	Brass	Copper	Solder	Steel	Cast Iron	Aluminium
JIS K-2234:2018 (max)	0.15	0.15	0.30	0.15	0.15	0.30
Freecor[®] JNC	-0.05	-0.03	-0.13	-0.02	-0.12	0.01

JIS K2234:2018 Circulating Corrosive Properties (30vol%, 1000hrs)

	Weight changes in mg/cm ²					
	Brass	Copper	Solder	Steel	Cast Iron	Aluminium
JIS K-2234:2018 (max)	0.30	0.30	0.60	0.30	0.30	0.60
Freecor[®] JNC	-0.07	-0.05	-0.03	-0.03	-0.02	-0.01

JIS K2234:2018 Corrosion property of Cast Aluminium at heat transfer surface (25vol%, 168hrs)

	Corrosion Rate in mg/cm ²	
JIS K 2234:2018 (max)	2.0	
Freecor[®] JNC	-0.1	

ASTM D1384 Glassware corrosion test (33vol%)

	Weight loss in mg/coupon ¹					
	Brass	Copper	Solder	Steel	Cast Iron	Aluminium
BS 6580 (max)	10	10	15	10	10	15
ASTM D3306 (max)	10	10	30	10	10	30
Freecor[®] JNC	2	2	4	0	-1	2

¹ Weight loss AFTER chemical cleaning acc. to ASTM procedure. Weight gain is indicated by a - sign

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ASTM D4340 Corrosion of Cast Aluminium at heat rejecting surfaces, (25vol%, 168hrs)

	Corrosion rate in mg/cm ² /week
BS 6580 (max)	1.0
ASTM D3306 (max)	1.0
Freecor® JNC	-0.3

ASTM D2570 Simulated Service Test (44vol%, 1064hrs)

	Weight loss in mg/coupon ¹					
	Brass	Copper	Solder	Steel	Cast Iron	Aluminium
ASTM D3306 (max)	20	20	60	20	20	60
Freecor® JNC	6	10	13	3	4	4

ASTM D2809 Water pump Cavitation Erosion

	Rating
ASTM D3306 (min)	8
Freecor® JNC	10

ASTM D7437 Hard water stability

	Amount of deposit (cm ³)
BS 6580 (max)	0.5
Freecor® JNC	<0.05

Corrosion Protection