

RYNA GROUP

Antifreeze additive
package



Technical Data sheet (TDS)

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Technical Data Sheet (TDS)
Hybrid Organic Antifreeze Additive (HOAT)
Nitrite, Borate, and Silicate free

Description

R-HOAT-12Plus is a hybrid antifreeze additive. This product is an aqueous solution which is Nitrite, Borate and Silicate free (NBS free).
R-HOAT-12Plus is formulated to blend easily with MEG (Mono Ethylene Glycol) and make a final “concentrate” or “ready to use” antifreeze solution to use in cooling systems of light and heavy-duty automotive engines. This product imparts excellent corrosion protection to all cooling system metals and alloys used in internal combustion engines. When mixed with appropriate dosage in MEG, this product can meet the requirements of ASTM D3306/ASTM D4985 standard.

Dosage

Based on the quantity of glycol (MEG), add 8% by weight of R-HOAT-12Plus while agitating or circulating the tank contents. So final solution contains 8% R-HOAT-12Plus and 92% MEG. The freeze protection afforded by the various dilutions is detailed in the table.

Antifreeze-Water (%)	Freezing Protection
33% - 67%	-20 °C
50% - 50%	-39 °C
60% -40%	-54 °C
70% - 30%	-68 °C

PROCEDURE

First charge the desired quantity of glycol (MEG) to the blending tank. Heat the glycol to at least 80°F (30°C). Maintain the minimum temperature throughout the blending procedure. Add the required amount of R-HOAT-12plus while mixing tank contents. Good mixing is vital to making a consistent and proper product. Agitate for 30-60 minutes after the addition of the additive package. Although this additive package has antifoam as part of the formulation, depending upon your glycol base, additional antifoam may need to be added to pass the ASTM foam test

TECHNICAL PROPERTIES

Property	Unit	Value	Test Method
Appearance	---	Clear to Cloudy Liquid	Visual
Color	---	Colorless to Pale Yellow	Visual
PH @ 20°C	---	8.34	ASTM D1287
Specific gravity @ 15 °C	---	1.123	ASTM D2896
Reserve alkalinity	ml	12.8	ASTM D1121
Freezing Point	°C	0	ASTM D7153
Water Content	Wt.%	27 Max	DIN 51777
Water solubility	---	Complete	---

INTERNATIONAL STANDARDS

- BS 6580
- ASTM D3306/ASTM D4985
- JIS 2234

ASTM D1384 – Corrosion Test for Engine Coolants in Glassware (Antifreeze made by 8% R-HOAT-12 plus and 92% MEG)

METALS	WEIGHT LOSS MG/SPECIMEN	ASTM D3306 SPECIFICATIONS
COPPER	0	10 Max
SOLDER	-4.5	30 Max
BRASS	0	10 Max
STEEL	-0.3	10 Max
CAST IRON	2.8	10 Max
ALUMINUM	-0.1	30 Max



HANDLING AND STORAGE

R-HOAT-12plus must be stored above 40°F (5 °C) at all times. If a container arrives very cold in your warehouse, immediately place it in a hot room for 1-2 days then stir thoroughly before use. Once a container is opened there is a possibility of the liquid phase evaporating, so close the container tightly after each use.

High temperatures, above 90°F (35°C), for an extended period may also cause degradation of the inhibitors.

The shelf life is 12 months.

SAFETY

It contains ethylene glycol and a bittering agent

If swallowed: contact poison control center/ emergency or physician

If breathed: move the person into fresh air

Eyes contact: flush with a large amount of water

Get medical attention if irritation persists

Skin contact: wash exposed areas with light soap and water