

RLT-P141 Water Based Rust Inhibitor

Description

RLT-P141 rust inhibitor is a high-quality and high-efficiency water-soluble rust inhibitor. It is composed of long carbon chain polycarboxylic acid and organic amine, without phosphorus, boron and other elements. The product has excellent water solubility, transparent water solution and excellent rust resistance. It is suitable for anti-rust of ferrous metals in the process of machinery manufacture and maintenance, semi-finished products and finished products. It is suitable for iron series materials such as cast iron, carbon steel and alloy steel.

Features and benefits

- Strong rust resistance, good protection for ferrous metals at low concentration.
- Good water - soluble, can be mixed with water in any proportion.
- Low residue, easy to clean by water - based cleaner or solvent cleaner.
- Good adaptability to hard water.
- Waste liquid treatment is convenient and environmentally friendly.

Typical physical and chemical properties

Test Item	Test Standard	Typical Technical Index
Appearance	Visual Inspection	Brown translucent to transparent liquid
Diluent Appearance (1 wt.% aqueous solution)	Visual Inspection	Colorless & fully transparent
pH Value (1 wt.% aqueous solution)	Digital pH Meter	8.5 ~ 9.5 (Typical measured value: 8.96)
Density @ 20℃	Density Hydrometer	1.153 g/cm ³
Cast Iron Rust Inhibition Test (0.5 wt.% dilution, 18–25℃, 2h immersion)	JB/T 9189-2010	Grade 0, zero rust spots observed
45# Steel Corrosion Test (55±2℃ full immersion, 168h)	GB/T 6144	Qualified, no discoloration or pitting corrosion
Nitrite Content Detection	Precision nitrite test strips	Non-detectable (0 mg/L)

Application Fields

RLT-P141 serves as a multi-purpose anti-corrosion additive for all water-based metal treatment systems:

- Functional anti-rust additive blended into synthetic & semi-synthetic metal working fluids
- Ready-to-dilute direct-use aqueous rust prevention solution for ferrous component inter-process storage
- Auxiliary corrosion inhibitor for surface treatment chemicals: dewaxing cleaners, passivation solutions, sealing agents
- Compatible additive for emulsified anti-rust fluids, industrial antifreeze, water-based quenching fluids and water-borne anti-rust coatings.

Recommended Operating Guidelines

- Working Dilution Concentration: Standard usage range 0.2% ~ 2.0% by weight. Adjust the dosage upward or downward according to target anti-rust service life and storage environment severity.
- Operating Temperature: Effective at ambient temperature. Mild heating accelerates surface drying; boiling is strictly forbidden, as high evaporation will drastically shift effective concentration.
- Treatment Cycle Parameters
 - (1): Immersion process: Fully submerge parts for 2–5 minutes
 - (2): Spray coating process: Uniform full-surface spraying for a minimum of 2 minutes
- Pre-Treatment Requirement: All original rust, scale and oil contaminants must be thoroughly removed from workpiece surfaces before anti-rust treatment, otherwise the protective film performance will be severely impaired.
- Post-Treatment Handling: Air-dry or low-temperature bake treated components to form a uniform compact passive anti-rust film.
- Post-Storage Protection: Isolate treated workpieces from rainwater, sewage and miscellaneous liquid contamination to prevent breakdown of the anti-corrosion film.

Storage & Handling Precautions

Storage Requirements

1. Store the product in a cool, dry, well-ventilated warehouse, maintain ambient storage temperature between 5°C ~ 35°C; avoid prolonged direct sunlight and high-temperature heat sources.
2. Keep original plastic drums tightly sealed when idle to prevent dust, foreign impurities and rainwater ingress causing product degradation.
3. Shelf Life: 12 months under intact factory-sealed packaging. All physical and anti-rust performance indicators must be fully re-inspected before use once the product exceeds shelf life.

Operation Safety Notes

1. Avoid long-term direct skin contact with the concentrated liquid. Wear nitrile protective gloves and splash-resistant safety goggles during continuous mass production operation.
2. In case of liquid splashing onto skin or eyes, flush the affected area continuously with abundant clean running water for 10–15 minutes; seek professional medical assistance if persistent irritation occurs.
3. Complete hazard identification, first-aid protocols and spill/fire emergency response

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information are detailed in the corresponding SDS document.

Packaging Specification

Standard Package: 200L sealed plastic drum, net weight approx. 200 kg per drum.

Disclaimer

All technical parameters, formulation guidance and application descriptions contained within this Technical Data Sheet are compiled based on standardized laboratory testing and verified production records of ROLITOM, provided solely for customer process and formulation reference. No express or implied warranty of product performance, merchantability or suitability for specific applications is issued. ROLITOM shall not be liable for workpiece corrosion, component damage or economic losses arising from improper dilution ratios, non-compliant operating procedures or application outside the recommended scope. End users are required to complete independent small-batch compatibility and anti-rust validation tests prior to full-scale mass production deployment.