

# RUST REMOVAL

SAFE ON EVERYTHING EXCEPT RUST



## METAL RESCUE® GEL

### FEATURES AND BENEFITS

**METAL RESCUE® Rust Remover GEL** is a cleaner, safer and easier solution to removing rust from iron and steel. Unlike other gel-based rust removers, **Metal Rescue GEL** is non-toxic, environmentally safe, and contains no harmful or corrosive acids, alkalis or solvents.

**Metal Rescue GEL** is formulated to cling to metal, making it ideal for use on vertical surfaces, spot rust, or rust on hard-to-reach areas. **GEL** formula also allows for pinpoint use—apply only where needed to eliminate waste. *Just apply, wrap, and remove!*

### WHY ARMOR?

*Armor Protective Packaging® offers rust prevention and rust removal products that are clean, safe, easy, and that protect metals while in-process, in transport, or in storage. ARMOR combines its VCI (vapor corrosion inhibitor) Nanotechnology® with packaging materials such as paper and poly film to create products that displace moisture on metal and guard against rust. ARMOR also offers desiccants, emitters, foam pads and its Metal Rescue® Rust Remover Bath and Dry Coat™ Rust Preventative. For more than 35 years, ARMOR has worked with customers from around the globe to provide rust prevention and rust removal solutions and to Take the Work Out of Your Workday!*



- Easy to use—no scrubbing, dipping, or wire brushing
- Remove spot rust or hard-to-reach rust on large surfaces
- Highly-adhesive formula is ideal for vertical surfaces
- Apply only where needed— eliminates waste/saves money
- Controlled application eliminates risk of harming surface areas around the rust
- Non-toxic and environmentally safe
- Safer than other gel-based rust removers; contains no phosphoric acids

**Metal Rescue GEL** will not compromise any mechanical properties or functionality.

**Metal Rescue GEL** can be used in conjunction with other ARMOR VCI products. After de-rusting, protect metal part with Dry Coat™ Rust Preventative spray, ARMOR WRAP® paper or ARMOR POLY® film/bags for shipping or storage.



ARMOR's Metal Rescue will **Take the Work Out of Your Workday!**

# RUST REMOVAL

ARMOR PROTECTIVE PACKAGING CORROSION MANAGEMENT SOLUTIONS

## Metal Rescue® Rust Remover GEL

### Product Overview

Metal Rescue® GEL is a citric-acid based solution designed for removing rust from iron and steel. Metal Rescue GEL's highly-adhesive formula is ideal for vertical surfaces and allows for simple and controlled application for spot rust and rust on hard-to-reach areas. Metal Rescue GEL is non-toxic and environmentally safe to use. GEL is non-flammable and contains no solvents or phosphoric acid.

### Effectiveness and Compatibility

Metal Rescue GEL is a rust remover designed for iron and steel. It is safe on metals other than iron and steel as long as they are not left in contact with GEL for too long. GEL will remove some oxides from copper, brass, and nickel but contact time is critical. The length of contact time is dependent upon the amount of oxidation present and alloy composition. It is recommended that the following metals be checked approximately every 30 minutes so as not to damage the surface under the oxidation layer: brass, copper, chrome, gold, lead, nickel, silver, titanium, tungsten, solder or solder points.

Metal Rescue GEL will remove iron oxide (rust) from ferrous-based materials in 5 minutes to 24 hours depending on the degree and age of the rust. It will remove zinc phosphate, bluing, browning, and other oxide finishes. It also brightens copper and copper based alloys such as brass and bronze.

Metal Rescue GEL will *not* remove anodizing, chrome, nickel, and powder coating when used as directed. For best results, only leave GEL on long enough to remove the corrosion.

*Metal Rescue GEL is not recommended for use on magnesium or magnesium alloys, zinc or aluminum.*

GEL will *not* remove paint with a few exceptions:

1. If a layer of rust has formed under the paint some of the paint coating will be lost as GEL removes the rust and therefore the paint on top of the rust.
2. Some paints and inks (typically red/orange), especially old paints, may use iron oxide pigment. GEL has been engineered to remove iron oxide in all forms, therefore it may dissolve the pigment in these types of paints.
3. Painted metal items with flaking or cracking surfaces or chipping/deteriorating paint or coatings may not be suited for rust removal--whether it is GEL or a different product--and may experience unexpected damage. If in doubt, test a small area on the part prior to use.

### Recommended Application

One jar of Metal Rescue GEL will cover 1.6 square feet (230 sq. inches) of surface area if applied 1/8" thick. (1/8" is approximately the same thickness as two pennies stacked on top of each other.)

Metal Rescue GEL can be used on any size area of rust as long as you have the ability to keep it moist using common household plastic wrap. We recommend limiting the application of GEL to surface areas no larger than approximately 15 inches by 15 inches at a time (which is equal to the coverage capacity of one jar of GEL) if applied at 1/8" thick as indicated in the instructions for use.

For iron and steel metal parts that can be soaked, Metal Rescue Rust Remover Bath is recommended.

### Temperature Alert

Optimal operating temperatures for Metal Rescue GEL are 68°F (20°C) to 150°F (65°C).

# RUST REMOVAL

## ARMOR PROTECTIVE PACKAGING CORROSION MANAGEMENT SOLUTIONS

### Preparation

Pre-cleaning is not required but it is recommended. The performance of Metal Rescue GEL will greatly improve if grease (such as Cosmoline), oil, loose rust, and/or dirt are removed prior to application. Pre-cleaning will speed up the rust removal process and extend the life of GEL.

### Usage

Metal Rescue GEL removes rust from iron and steel in three steps:

- 1. Apply:** Use gloves. Apply a 1/8" thick layer of Metal Rescue GEL (via brush, roller or wipe on) to rusted area on metal's surface. (1/8" is approximately the same thickness as two pennies stacked on top of each other.) GEL will darken in color as rust is removed.
- 2. Wrap:** Do not allow GEL to dry – GEL must remain moist to remove rust. To keep GEL moist, use Metal Rescue's signature plastic wrap: Tear one sheet of household plastic wrap from roll. Sheet should be slightly larger than GEL application area.
  - Lay sheet of wrap over surface of GEL, making sure that entire application area is covered.
  - Ensure edges of wrap are secure to protect GEL from exposure to airflow that could cause drying.

*Process time is dependent on severity of rust. Light surface rust can require 5-30 minutes, moderate rust up to 4 hours, and heavily rusted items that have been left unprotected for years may take up to 24 hours. If results are not as desired, remove GEL completely and repeat steps 1 and 2.*

- 3. Remove/Protect:** Once desired results are achieved, rinse or wipe off GEL completely. Result is clean, bare metal ready for use or additional processing. To protect from rust returning, use Dry Coat™ Rust Preventative spray.

### Shelf Life

Once opened, Metal Rescue GEL is good for up to one year. When storing GEL, keep closed and out of direct sunlight. When using GEL, avoid contamination

### Safety

Metal Rescue GEL is a safe, citric acid-based solution. It is non-toxic, non-hazardous, non-flammable, non-caustic and contains no harmful or corrosive acids, alkalis or solvents. Fundamental safety steps are recommended. Use gloves. Do not ingest. Avoid contact with your eyes. If eye contact occurs, flush thoroughly with water. If symptoms develop from exposure, seek immediate medical attention.

### Removal

Metal Rescue GEL is completely water miscible and easily rinsed off. Use warm, clean water to rinse off parts and dry thoroughly.

### Disposal

As supplied, Metal Rescue GEL is environmentally friendly and contains no VOCs, solvents, or hazardous ingredients. However, if hazardous waste or contaminants (certain oils, paints, heavy metals, etc.) are introduced into the GEL, check local, state, and federal disposal requirements.

### Wash hands thoroughly after handling this product and before eating.

All products manufactured Armor Protective Packaging® are warranted to be first class products and free from defects in material and workmanship. Liability under this warranty is limited to the net purchase price of any of such products proven defective or at our option to the repair or replacement of said products upon their return to us transportation prepaid. All claims on defective products must be made in writing 30 days after the receipt of such products in your plant and prior to further processing or combining with other materials and products. We make no warranty, express or implied, as to the suitability of any of our product for any particular use, and we shall not be subject to liability from any damages resulting from their use in operations not under our direct control. This warranty is exclusive of all other warranties, express or implied, and no representative of ours or any other person is authorized to assume for us any other liability in connection with the sale of our products.

Revised 1/18/18