

Aluminum evaporators, heating coils, hot water heater tanks, pipes, valves, fittings, metal components, automotive engines, radiators, condensate drip pans, exhaust systems, metal cooling towers, tanks, boiler tubes, aluminum and aluminum alloys; cast irons; copper and copper alloys (brass and bronze), magnesium and magnesium alloys, carbon steels; stainless steels, galvanized surfaces, PVC, CPVC, ABS, fiberglass, black polypropylene, kynar, aluminum evaporators, heating coils, hot water heater tanks, pipes, valves, fittings, metal components, automotive engines, radiators, condensate drip pans, exhaust systems, metal cooling towers, tanks, boiler tubes, Aluminum and aluminum alloys; cast irons; copper and copper alloys (brass and bronze), magnesium and magnesium alloys, carbon steels; stainless steels, galvanized surfaces, PVC, CPVC, ABS, fiberglass, black polypropylene, kynar, aluminum evaporators, heating coils, hot water heater tanks, pipes, valves, fittings, metal components

PATCHES

SEALS

RedEpoxy

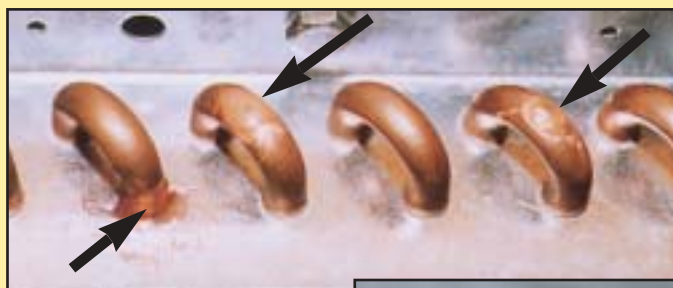
MENDS

REPAIRS

When you need a sealant you can count on, use Red Epoxy.

Many Applications:

- HVAC & Refrigeration
- Plumbing & Appliances
- Automotive & Marine
- Petrochemical, Manufacturing
- Industrial, Commercial, Institutional



A Solid Performer:

- Works on Vertical Surfaces
- Pressure Tested to 3000 psi
- Simple, Quick Mixing & Application
- Oil, Gas, Fuel & Solvent Resistant
- Fast Repairs, Heat Cures in Minutes
- No Rush, No Wait, You Control Curing Time

A sample of Red Epoxy in action: Repaired coils of a fully pressurized system. When Red Epoxy turns gold, the repaired item is ready for service. Red Epoxy makes a permanent, economical repair.



For Use On ALL Metals and Rigid Plastics.

Including aluminum and aluminum alloys; cast irons; copper and copper alloys (brass and bronze), magnesium and magnesium alloys, carbon steels; stainless steels, galvanized surfaces, PVC, CPVC, ABS, fiberglass, black polypropylene, Kynar.

Available through wholesalers and distributors.

For information on all Highside Chemicals products, see our website at <http://www.highsidechem.com>

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What Is Red Epoxy? Red Epoxy is a new high performance, two-part, heat cured epoxy repair kit for making permanent repairs on all metals and rigid plastics. Red Epoxy is specifically designed to exhibit a distinct color change when heat cured. Red Epoxy will provide a permanent and effective repair on any rigid material which includes but is not limited to, aluminum and aluminum alloys, cast irons, copper and copper alloys (brass, bronze, etc.), magnesium and magnesium alloys, carbon steels, stainless steels, galvanized surfaces, PVC, CPVC, ABS, fiberglass, black polypropylene, and Kynar.

How Does Red Epoxy Work? Initially, the red part (epoxy resin) is mixed with an equal part of the yellow part (hardener) forming a homogenous mass. At this point, the reactants are brought together and allowed to develop sufficient compatibility before being used. In epoxy chemistry the time required for the parts to become compatible is referred to as the induction time. Typically, an induction time of about 10 minutes is sufficient for Red Epoxy. Once the parts (reactants) are brought together the reaction will slowly begin even without heat being applied. Eventually the reaction will result in a fully cured epoxy. Red Epoxy will fully cure without heat in 24 to 72 hours depending on temperature and humidity. NOTE: when Red Epoxy is allowed to cure without heat it retains its deep red color. The period of time required for an epoxy mixture to become unworkable is referred to as the pot life. Red Epoxy has a pot life of about 4 hours. This means that Red Epoxy can be used for repairs up to 4 hours after mixing. Finally, the Red Epoxy mixture is heated and the reaction rate is accelerated. When the color changes from red to gold the product is completely cured.

TYPICAL PROPERTIES:

Kit contains (1) .5 ounce red tube and (1) .5 ounce white tube.

Red Tube:Resin
ColorRed
ConsistencyVery viscous paste

White Tube:Hardener
ColorYellow
ConsistencyVery viscous paste

Maximum Temperature Limit . .350°F
Contains no Volatile Organic Compounds (VOCs)

Typical Tensile Shear Strengths of Metal.

- Aluminum alloy4590 psi
- Steel (pretreated)5040 psi
- Brass (pretreated)2135 psi
- Brass (untreated)1940 psi
- Copper (pretreated)2950 psi

HYDRAULICALLY PRESSURE TESTED IN EXCESS OF 3000 psi ON 304 and 316 STAINLESS STEEL AND BLACK IRON PIPE.

MAKING REPAIRS WITH RED EPOXY is easy. Just follow these steps.

1. Squeeze out a small amount of resin from the red tube and the white tube on any clean surface.
2. Mix the two parts together with a clean spatula or stick into a uniform red color. This guarantees uniform mixture.

3. For best adhesion, clean the repair area with sandpaper or emery cloth removing all loose scale, dirt or other foreign matter.
4. Then clean the sanded area with a solvent degreaser such as odorless mineral spirits to remove any residual oil or grease. Allow the solvent to evaporate to a dry surface. Do not apply Red Epoxy to a solvent-wet surface.
5. Place a small amount of the prepared Red Epoxy to the break or area to be repaired. Be sure to use enough Red Epoxy to cover the area to be repaired.
6. With a hot-air gun or propane torch, slowly heat the Red Epoxy and surrounding area. Use a slow brush strokes of hot air or heat from propane torch and pass directly over the repair area. NOTE: do not use a direct flame to heat the Red Epoxy to avoid overheating or charring. This heats the Red Epoxy and base material slowly and uniformly and does not develop hot spots in the patch. Overheating may result in charring or excessive running of the repair. If this occurs remove material and start over.
7. As the heating progresses, the red color will deepen and then fade to a gold color. When the entire patch is gold, remove the heat source and allow the work to cool to room temperature. CAUTION: do not force cool. Rapid contraction of the base material will weaken the resin bond and a complete cure may not occur.

When the repair has cooled the equipment may be returned to service immediately.

APPLICATIONS

Anywhere a small hole or crack exist Red Epoxy makes the best repair material. Red Epoxy does not run and it works on vertical surfaces. Red Epoxy makes an excellent threaded joint sealant, particularly for hard to seal chemicals and dissimilar materials. Red Epoxy has a very broad application range and is used in HVAC, refrigeration, plumbing, automotive, marine, process piping, petrochemical and manufacturing applications in industrial, commercial and institutional sectors.

Red Epoxy has successfully repaired aluminum evaporators, heating coils, hot water heater tanks, pipes, valves, fittings, metal components, automotive engines, radiators (both plastic and metal), condensate drip pans, exhaust systems, metal cooling towers, tanks and boiler tubes. Contact Highside Chemicals for specific applications.

CHEMICAL RESISTANCE: The following is a partial list of the materials and fluids that Red Epoxy is resistant and includes but is not limited to....

REFRIGERANTS: All CFC's, HFC's, HCFC's and PFC's including but not limited to....

- R-717 (ammonia)
- R-744 (carbon dioxide)
- R-11 (trichlorofluoromethane)
- R-12 (dichlorodifluoromethane)
- R-21 (dichlorofluoromethane)
- R-22 (chlorodifluoromethane)
- R-113 (1,1,2-trichlorotrifluoroethane)
- R-114 (1,2-dichlorotetrafluoroethane)
- R-40 (methyl chloride)

- R-30 (methylene chloride)
- R-290 (propane)
- R-764 (sulfur dioxide)
- R-134a (1,1,2-tetrafluoroethane)
- R-13, R-13bl, R-500, R-502, R-503, R-123, R-124, R-401A, R-401B, R-402A, R-402B, R-403B, R-406A, R-408A, R-409A, R-23, R-236fa, R-404A, R-407A, R-407B, R-407C, R-410A, R-507, R-508.

REFRIGERATION LUBRICANTS:

- Mineral Oils, Napthenic
- Mineral Oils, Paraffinic
- Polyol Esters
- Polyalkylene Glycols
- Polyalphaolefins
- Alkylbenzenes

FUEL GASES:

- Natural Gas
- LPG "Liquefied Petroleum Gas"
- LNG "Liquefied Natural Gas"
- Propane
- n-Butane
- Isobutane

SOLVENTS:

- Water (soft; hard; potable), seawater, Pentane, Hexane, Cyclohexane, Heptane, Petroleum
- Naphthas, Mineral Sprits, Toluene, Xylene, Perchloroethylene, D-Limonene, Turpentine, Pine Oil, Lacquer Diluent, Rubber Solvent, VM&P
- Naptha, Stoddard Solvent, Deodorized Kerosene, 140°F Solvent, Medium-flash Aromatic Naptha, High-flash Aromatic Naptha, Dipentene, Chloroform, Orthodichlorobenzene, Acids-Dilute, Monochlorobenzene, Ethylene Dichloride, Trichloroethylene, Propylene Dichloride, Aliphatic Solvents, Caustics-Dilute, Aromatic Solvents, Glycerine, Chlorinated Solvents
- Alcohols.

INDUSTRIAL GASES:

- Acetylene, Air, Carbon Monoxide, Ammonia, Argon, Carbon Dioxide, Ethane, Ethylene Chloride, Fluorine, Hydrogen, Methane, Neon, Nitrogen, Nitrous Oxide, Propylene, Silane, Xenon, Tetrafluoromethane, Helium.

FUELS:

- Gasoline (petrol, motor fuel), Aviation Gas (avgas, jet fuel), Fuel Oils, Diesel Fuel Oils, Gas Turbine Oils, Kerosene, Gas Oil.

OILS:

- Mineral Oils, Soybean Oil, Coconut Oil, Tall Oil, Peanut Oil, Rapeseed Oil, Menhaden Oil, Vegetable Oil, Animal Oil, Hydraulic Oil, Crude Oil.

Questions concerning specific applications or chemical resistance should be directed to Highside Chemicals, Inc. Material Safety Data Sheet and detailed information is available on our Web Site, <http://www.highsidechem.com>

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