

## TECHNICAL AND APPLICATION DATA

### DESCRIPTION

**EMSOL® MRP-1850** is a "**FAST CURE**" abrasion resistant putty formulated with an updated epoxy polymer matrix along with a **Well Graduated Heterogeneous Ceramic (WGHC)** anti-abrasive aggregate package. This innovative high abrasion resistant aggregate is a blend of angular and spherical particles properly sized to maximize a well graduated distribution and to minimize the exposure of the epoxy matrix. This allows the **EMSOL® MRP-1850** to be a single formulation product that perform equally well under abrasion/erosion from large or fine particle as well as impingement/sliding abrasion from abrasive sludge.

#### EMSOL MRP-1850 WGHC

Well Graduated  
Heterogeneous Ceramic  
Anti-abrasion Aggregate

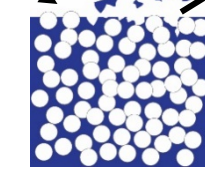
Minimum wear  
and exposure



#### Similar Products

Poorly Graduated  
Anti-abrasion Aggregate

Premature wear from  
excessive exposure  
of the epoxy matrix



Similar products with homogeneous particle sizing and poor distribution suffer from premature wear when the polymeric matrix is exposed to the abrasive particles instead of the anti-abrasion aggregate.

**EMSOL® MRP-1850** was also formulated to set at low surface or ambient temperatures, and can also be applied to surfaces where surface preparation is not optimal.

### TYPICAL USES

- Solids handling equipment/machinery
- Rebuilding/patching pipes and tanks
- Ball mills
- Silos
- Pumps
- As a sacrificial material to preserve original parts and equipment

### PHYSICAL AND MECHANICAL PROPERTIES

Abrasion Resistance (ASTM D4060 @ H22 x 1K cycles)	80 mg loss
Coefficient of Thermal Expansion (ASTM C531)	1.1x10 <sup>-6</sup> °F
Pull-off Adhesion (ASTM D4541)	2,800 psi (197 Kg/cm <sup>2</sup> )
Hardness (ASTM D2240)	82-86 Shore D
VOC (Volatile Organic Compounds)	0 lbs/gal (0 g/lit)
Mixed Density	18.07 lb/Gal
Thermal Stability (Loss after 48 hrs @ 302°F)	0.0003 g

## ABRASION RESISTANT PUTTY "FAST CURE"

### FEATURES

- Excellent abrasion resistance
- Excellent thermal compatibility with most substrates
- Single coat application
- Won't slump (1/2") on vertical or overhead applications
- Extend life cycle of parts and equipment
- No VOC's
- Fast cure. Reduced downtime.
- Surface Tolerant (Final adhesion values will depend on the degree of cleanliness achieved during surface preparation).

### COLOR

Component "A": Gray  
Component "B": Red  
Mixed product: Red

### UNIT SIZES

- 2 x 6 lb Kit
- 1 x 25 lb ( special order contact EMSOL)

### RECOMMENDED THICKNESS

- Minimum: 1/8" (120 mils)
- Maximum: n/a

### THEORETICAL COVERAGE

- 4.4 ft<sup>2</sup> @ 1/8" DFT (6 lbs kit)
- 18.3 ft<sup>2</sup> @ 1/8" DFT (25 lbs kit)

### MIXING RATIOS

Weight	Volume
0.94:1	1:1

### POT LIFE AND CURE TIMES

Temperature	Pot Life	Dry to the touch	Over-coat	Cured (back in service)
5°C (41°F)		40 min	1 hr	4 hr
10°C (50°F)	10 min	30 min	45 min	3.25 hr
25°C (77°F)	8 min	20 min	30 min	2 hr

### HEAT RESISTANCE

Dry:	121°C (250°F)
Wet:	65°C (150°F)

### SHELF LIFE

- 1 year in unopen container and stored at 4° – 43°C (40° – 110°F)

## SURFACE PREPARATION

### Metallic Substrates:

#### "APPLY PREFERABLY OVER A CLEAN, DRY, SOLID AND ROUGH SURFACES"

1. Clean, remove all surface contaminants with a suitable cleaner/degreaser as per SSPC-SP1. Use a lint-free rag soaked in a cleaner/degreaser such as Xylene, MEK, Acetone, etc.
2. To attain the best possible adhesion of the product prepare the surface by abrasive blasting as per SSPC-SP10 (NACE 2, SA 2.5.) Near White Metal Finish. Use only clean, dry angular abrasive to achieve an angular surface profile of 2 to 3 mils.
3. The product is surface tolerant, which allows its application over poorly prepared surfaces. Surface preparation with hand tools or power tools as per SSPC SP2, SP3, SP11 and SP15 is permitted but be aware that the adhesion of the product will be lower. If maximum adhesion values are desired prepare the surface by grit blasting as described above.

### Non-Metallic Surfaces (Concrete, GRP, etc):

#### "APPLY PREFERABLY OVER A CLEAN, DRY, SOLID AND ROUGH SURFACES"

Inspect the surface and make sure it is firm, clean solid and rough (angular anchor profile of 2 to 3 mils). If the surface is painted, it is recommended to remove the paint to expose the original substrate. If applying over a painted surface it must first be sanded with #80 grit sandpaper to remove chalking, loose paint and any remaining gloss. It is critical the existing paint is in good condition as the adhesion of the product will be limited to the adhesion of the underlying paint. Test existing paints to ensure the adhesion level is > 21 kg / cm<sup>2</sup> (300 psi) in accordance with the ASTM D-4541 test. If test results are lower contact your EMSOL representative for advice.

After preparing the surface clean to remove all surface contaminants (dirt dust, etc.) with a suitable cleaner/degreaser. Use a lint-free rag soaked in a cleaner/degreaser such as Xylene, MEK, Acetone, etc.

Concrete surfaces should be prepared according to SSPC-SP13, NACE 6, Surface Preparation of Concrete or Clean surface according to ASTM D4258 standard and anchor profile in accordance with ASTM D4259.

New concrete surfaces must have cured for a minimum of 28 day cure. If a 28 day curing schedule is not possible apply EMSOL CS-1000 sealer/densifier. For more information on EMSOL CS-1000, contact your EMSOL representative.

## INSTRUCTIONS FOR USE

### WARNING

EMSOL MRP-1850 is a putty designed to set very quickly. The 6 lb unit can be mixed in its entirety, but due to the reaction speed and low pot life it is recommended that upon completing mixing it be applied immediately. Once mixed, EMSOL MRP-1850 will heat up rapidly. Do not set aside or allow to rest after mixing. Do not allow the mixed material to remain in the mixing container without being applied. If you need to mix smaller quantities of the product, see "Partial Mixtures".

The 25 lb kit of EMSOL MRP-1850 was developed for larger jobs and to be used mainly for partial mixing. DO NOT MIX THE ENTIRE 25 LB KIT ALL AT ONCE. To mix smaller amounts of the material, see "Partial Mixes".

### PRODUCT MIXING

**6 lb Kit:** Empty component "B" in its entirety inside the container of component "A" and using a drill at low rpm's and a "Jiffy" mixer combine the product until a streak free uniform color is reached. Under normal conditions (product temperature 77°F) mixing should be less than 60 seconds. Scrape the bottom and side of the container to ensure a complete mix. It is possible that incompletely mixed material will not cure properly. If the product is cold, < 55°F, try to heat up by storing overnight in a temperature controlled area to reach at least 70°F. If heating up the product is not possible DO ONLY PARTIAL MIXES.

To gain the most pot life out of the mixed product, DO NOT set aside or allow to rest in the container after mixing. Spread the mixed product immediately over the work area/surface to avoid overheating and a reduced pot life of the mixed product.

### PARTIAL MIXES

By Volume: 1 part "A" to 1 part "B" (1:1)

Combine equal amounts by volume of both component "A" and "B" and mix with a putty knife over a non-absorbent clean surface, preferably plastic or metal, DO NOT USE CARBOARD. Knead the product with the putty knife until a uniform color free of streaks is achieved. Scrape the mixing surface and both sides of the putty knife to ensure 100% of the product is mixed. It is possible that Incomplete mixed material will not cure properly.

### PRODUCT APPLICATION

Using spatulas or putty knives, place the mixed product over the area/surface to repair. Initially rub with force a small amount of the mixed product to ensure 100% contact with the prepared surface. Fill all surface roughness, voids and any imperfections. Apply the rest of the product and level/profile the surface as needed or until the required thickness is reached. Avoiding trapping air bubbles.

If necessary, EMSOL MRP-1850 can be applied in multiple layers. Maximum overcoating time between layers is 30 minutes @ 77° F. If the overcoat time is exceeded, sand or use abrasive blasting until a uniform matte surface finish is attained, wipe with a lint-free rag soaked in solvent, let dry and apply the additional product.

### CLEANING

Do not allow product to harden on tools. While product is still soft clean tools with solvent as Xylene, MEK, Acetone or 91% Isopropyl Alcohol.

EMSOL warrants its products to be free from defects in material and workmanship. EMSOL's sole obligation and Buyer's exclusive remedy in connection with the products shall be limited, at EMSOL's option, to either replacement of products not conforming to this warranty or credit to Buyer's account in the invoiced amount of the nonconforming products. Any claim under this Warranty must be made by Buyer to EMSOL in writing within five days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life, or one year from the delivery date, whichever is earlier. Buyer's failure to notify EMSOL of such nonconformance as required herein shall bar Buyer from recovery under this warranty.

**EMSOL makes no other warranties concerning this product. No other warranties, either expressed or implied, or statutory, such as warranties of merchantability or fitness for a particular purpose, shall apply. In no event shall EMSOL be liable for consequential or incidental damages.**

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