

EC-3

MEDIUM BUILD EPOXY COATING

Chemical Resistance Guide

The following Chemical Resistance Guide will aid in determining the effect of various chemicals to Federal's **EC-3 MEDIUM BUILD EPOXY COATING**. Results are based on a 24 hour spot test under a watch glass sealed with paraffin wax @ 77 °F. Two samples were prepared based on a clear, and clear mixed with UR-4 Color Add "oxford gray". Each system was mixed and applied to a panel primed with Federal's PR-14 WB Kwik Prime in accordance to Federal's standard specifications. The coatings were allowed to cure for a minimum of 7 days @ 77 °F prior to testing. A rating system for this guide is as follows:

| RATINGS KEY | | | |
|---------------|--|--------------------------|--|
| E = Excellent | | NR = Not Recommended | |
| G = Good | | OS = Occasional Spillage | |
| F = Fair | | | |

| ORGANIC ACIDS | | | |
|-------------------|---------|--------|--------|
| REAGENT | CONC. | RATING | |
| | | CLEAR | w/UR-4 |
| Acetic | 5% | E | E |
| Acetic | 10% | E | E |
| Acetic | 20% | G | E |
| Acetic | Glacial | F | F |
| Butyric | 10% | F | E |
| Citric | 10% | F | F |
| Citric | 50% | F | NR |
| Cresylic | 10% | F | G |
| Formic | 10% | E | E |
| Lactic | 10% | G | G |
| Lactic | 25% | F | G |
| Maleic | 30% | F | F |
| Maleic | 60% | F | F |
| Malic | 50% | F | F |
| Monochloro Acetic | 5% | F | G |
| Monochloro Acetic | 10% | F | F |
| Oleic | Sat. | E | E |
| Oxalic | Sat. | E | E |
| Picric | Sat. | E | G |

| INORGANIC ACIDS | | | |
|-----------------|----------|--------|--------|
| REAGENT | CONC. | RATING | |
| | | CLEAR | w/UR-4 |
| Boric | 30% | G | G |
| Boric | Sat. | G | G |
| Chromic Acid | 2% | E | F |
| Chromic Acid | 10% | E | F |
| Chromic Acid | 15% | G | G |
| Hydrochloric | 10% | G | F |
| Hydrochloric | 37% | F | F |
| Hydrochloric | Conc. | G | F |
| Hydrofluoric | 10% | E | G |
| Hydrofluoric | 24% | G | G |
| Hypochlorous | 5% | G | G |
| Nitric | 10% | G | G |
| Nitric | 30% | G | NR |
| Nitric | Over 40% | G | NR |
| Nitric | Conc. | NR | NR |
| Perchloric | 35% | F | G |
| Phosphoric | 10% | G | F |
| Phosphoric | 35% | G | F |
| Phosphoric | 75% | F | F |
| Sulfuric | 25% | F | G |

| INORGANIC ACIDS (CONT'D) | | | |
|--------------------------|-------|--------|--------|
| REAGENT | CONC. | RATING | |
| | | CLEAR | w/UR-4 |
| Sulfuric | 50% | F | F |
| Sulfuric | 70% | OS | F |
| Sulfuric | Conc. | NR | NR |

| KETONES - ESTERS | | | |
|------------------------|-------|--------|--------|
| REAGENT | CONC. | RATING | |
| | | CLEAR | w/UR-4 |
| Acetone | 100% | G | F |
| Amyl Acetate | 100% | E | E |
| Butyl Acetate | 100% | G | G |
| Ethyl Acetate | 100% | G | F |
| Methyl Ethyl Ketone | 100% | G | G |
| Methyl Isobutyl Ketone | 100% | NR | NR |
| PM Acetate | 100% | E | F |

| ALKALIES AND SALTS | | | |
|----------------------|-------|--------|--------|
| REAGENT | CONC. | RATING | |
| | | CLEAR | w/UR-4 |
| Aluminum Chloride | 50% | E | E |
| Ammonium Chloride | 50% | E | E |
| Ammonium Hydroxide | 10% | E | E |
| Ammonium Hydroxide | 20% | E | E |
| Ammonium Hydroxide | 50% | E | E |
| Ammonium Nitrate | Sat. | E | E |
| Ammonium Persulfate | Sat. | E | E |
| Ammonium Sulfate | Sat. | E | E |
| Calcium Chloride | 50% | G | G |
| Calcium Hydroxide | Sat. | E | E |
| Calcium Hypochlorite | 15% | F | F |
| Ferric Chloride | Sat. | E | E |
| Ferric Sulfate | Sat. | G | G |
| Potassium Hydroxide | 40% | F | F |
| Sodium Bicarbonate | Sat. | E | E |
| Sodium Bisulfate | Sat. | E | E |
| Sodium Carbonate | Sat. | E | E |
| Sodium Chloride | 20% | E | E |
| Sodium Hydroxide | 10% | E | E |
| Sodium Hydroxide | 50% | E | E |
| Sodium Hypochlorite | 10% | E | E |
| Sodium Sulfate | Sat. | E | E |
| Sodium Sulfide | Sat. | E | E |

ALKALIES AND SALTS (CONT'D)

| REAGENT | CONC. | RATING | |
|---------------------|-------|--------|--------|
| | | CLEAR | w/UR-4 |
| Trisodium Phosphate | 10% | E | E |
| Trisodium Phosphate | Sat. | E | E |

SOLVENTS - ALIPHATIC

| REAGENT | CONC. | RATING | |
|-----------------|-------|--------|--------|
| | | CLEAR | w/UR-4 |
| Gasoline | 100% | E | E |
| Hexane | 100% | E | E |
| Jet Fuel A-1 | 100% | E | E |
| Mineral Spirits | 100% | E | E |
| Naphtha | 100% | E | E |

SOLVENTS - AROMATIC

| REAGENT | CONC. | RATING | |
|---------------|-------|--------|--------|
| | | CLEAR | w/UR-4 |
| Benzene | 100% | F | F |
| Chlorobenzene | 100% | G | G |
| SC-100 | 100% | E | E |
| Toluene | 100% | E | F |
| Xylene | 100% | E | E |

SOLVENTS - CHLORINATED

| REAGENT | CONC. | RATING | |
|------------------------|-------|--------|--------|
| | | CLEAR | w/UR-4 |
| Methylene Chloride | 100% | F | G |
| Perchloroethane | 100% | E | E |
| 1,1,1, Trichloroethane | 100% | E | E |
| Trichloroethylene | 100% | G | G |

AUTO-BRAKE - HYDRAULIC FLUIDS

| REAGENT | CONC. | RATING | |
|--------------------|-------|--------|--------|
| | | CLEAR | w/UR-4 |
| Brake Fluid | 100% | F | F |
| Hy-Jet Fuel #3 | 100% | F | F |
| Motor Oil | 100% | E | E |
| Skydrol 500A | 100% | F | F |
| Skydrol 500B | 100% | F | F |
| Transmission Fluid | 100% | E | F |

ALCOHOLS

| REAGENT | CONC. | RATING | |
|--------------------|-------|--------|--------|
| | | CLEAR | w/UR-4 |
| Diacetone Alcohol | 100% | G | E |
| Ethyl Alcohol | 100% | F | F |
| Ethylene Glycol | 100% | E | E |
| Glycerine | 100% | E | E |
| Isopropyl Alcohol | 100% | G | F |
| Methyl Alcohol | 100% | G | G |
| Phenol | 5% | NR | NR |
| Triethylene Glycol | 100% | G | G |

MISCELLANEOUS CHEMICALS

| REAGENT | CONC. | RATING | |
|------------------------------------|-------|--------|--------|
| | | CLEAR | w/UR-4 |
| Acrylonitrile | 100% | G | G |
| Aniline | 100% | NR | NR |
| Beer | 100% | E | E |
| Bromine | 100% | NR | NR |
| Butyl Lactate | 100% | G | G |
| Carbon Disulfide | 100% | F | F |
| Carbon Tetrachloride | 100% | G | G |
| Chloroform | 100% | G | G |
| Cola | 100% | E | E |
| Corn Oil | 100% | E | E |
| Cyclohexane | 100% | G | G |
| Cyclohexanone | 100% | G | G |
| Diethyl Phthalate | 100% | G | G |
| Dimethyl Phthalate | 100% | G | G |
| Ethylene Dichloride | 100% | F | G |
| Formaldehyde | 100% | F | G |
| Fruit Juice | 100% | E | F |
| Grease | 100% | E | E |
| Hydrogen Peroxide | 10% | E | G |
| Ketchup | 100% | E | G |
| Lanoline | 100% | E | E |
| Lard | 100% | E | E |
| Linseed Oil | 100% | E | E |
| Mayonnaise | 100% | E | E |
| Methyl Salicylate (50% in Toluene) | | NR | NR |
| Milk | 100% | E | E |
| Mustard | 100% | F | F |
| 2-Nitro-Propane | 100% | E | G |
| Pyridine | 100% | NR | F |
| Sugar | Sat. | E | E |
| Tannic Acid | Sat. | E | G |
| Tartaric Acid | Sat. | G | G |
| Tide Solution | 2% | E | E |
| Triacetin | 100% | E | E |
| Triethanolamine | 100% | E | E |
| Turpentine | 100% | E | E |
| Water | 100% | E | E |
| Wine | 100% | E | E |

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