

Technical Data Sheet

EPIKOTE™ Resin 5522-WY-55A

Product Description

Clear paints, enamels and primers for metal, concrete or masonry can be formulated with EPIKOTE™ 5522-WY-55 (see Waterborne Starting Formulations). EPIKOTE 5522-WY-55 Resin is a 55 percent nonvolatile dispersion of a modified 1002 type epoxy resin in water and 2-propoxyethanol.

Application Areas/Suggested Uses

This polyfunctional epoxy resin dispersion is intended for use in ambient cure, two-component, water-reducible epoxy coatings formulated for applications requiring a high degree of chemical and corrosion protection. Although EPIKOTE 5522-WY-55 exhibits good compatibility with several amine functional water reducible converters, it is suggested for use with water reducible EPIKURE™ 8290-Y-60 Curing Agent.

Benefits

- Rapid room temperature cure
- Low volatile organic content (VOC)
- Good paint stability
- Performance versatility
- Long-term water and humidity resistance
- Corrosion resistance over a variety of substrates
- Adhesion to damp concrete

Sales Specifications

Property	Value	Unit	Test Method
Fineness	6 min	Hegman	ASTMD-1210
Particle Size	0.2 - 0.7	µm	SRC 00033
Solids	52 - 55	%	ASTMD1259
Viscosity	8000 - 19000	cP	ASTMD2196
Weight per Epoxide	550 - 700	g/eq	ASTMD1652

Typical Properties

Property	Value	Unit
Appearance	Milky	
Flash Point, Setflash	550 - 700	°F
Pounds per Gallon Solution	8.9	lbs/gal
Pounds per Gallon Solids	9.68	lbs/gal

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<https://www.hexion.com/en-US/product/epikote-resin-5522-wy-55a>

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Processing/How to use

General Information

Coatings formulated with EPIKOTE 5522-WY-55 Resin and EPIKURE 8290-Y-60 Curing Agent can be applied to a variety of substrates. These coatings exhibit very strong adhesion and long-term protection. Adhesion is particularly good over damp concrete, an exclusive feature of waterborne epoxy systems. This resin combination may be formulated into sealers, primers and low to high sheen topcoats for various industrial maintenance and specialty architectural applications. EPIKURE 8290-Y-60, the water-reducible amine adduct recommended for cure of EPIKOTE 5522-WY-55, is a highly reactive hardener. Therefore, certain formulating parameters must be considered in order to achieve maximum performance from these coatings.

Performance Properties

The theoretical stoichiometry for this resin system is 79.5 percent epoxy to 20.5 percent curing agent based on resin solids. However, it is recommended that coating stoichiometry be based on intended end uses, since a wide variety of performance properties may be obtained through variation of the epoxy/hardener ratio. As illustrated in Figures 1 and 2, a high degree of hardness development and solvent resistance is achieved at a ratio of 75 percent epoxy to 25 percent curing agent based on solids. For flooring applications, this ratio offers the optimum required physical properties. For a broader spectrum of performance, comparable to a conventional solvent-borne epoxy coating, an 85/15 epoxy to curing agent ratio is suggested. Ratios containing still higher epoxy levels are recommended for applications requiring a high degree of corrosion and humidity protection (see Figures 3 and 4). EPIKURE 8290-Y-60 Curing Agent levels greater than 25 percent of total resin solids are not recommended due to the short pot life and adverse effects on water and acid resistance.

Figure 1 / Hardness Development

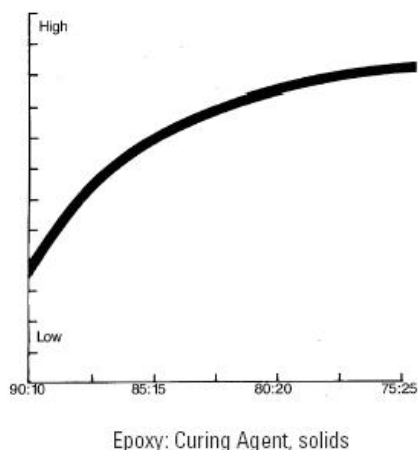


Figure 2 / Solvent Resistance

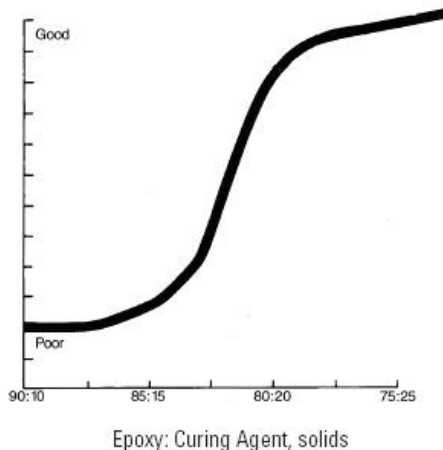


Figure 3 / Acid Resistance

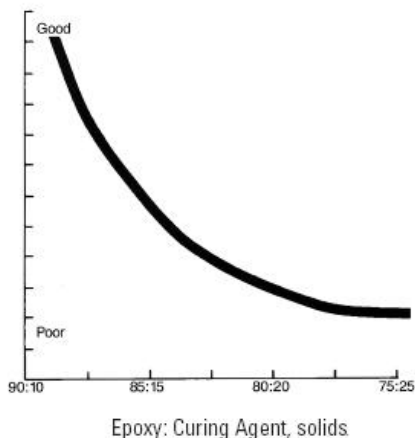
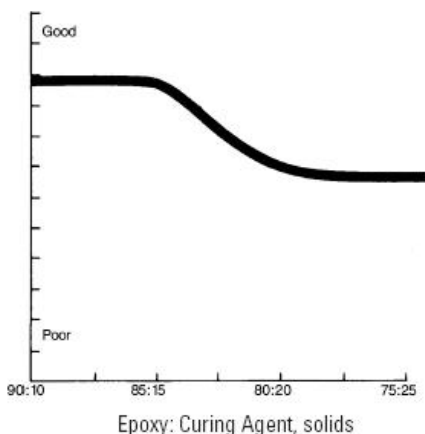


Figure 4 / Salt Fog Resistance



PIGMENTATION

When pigmenting EPIKOTE 5522-WY-55 based coatings, the formulator has the option of pigmenting either or both components. Due to the rapid reactivity of EPIKURE 8290-Y-60, a relatively small amount of this resin is utilized in most formulations. Pigments with a lower vehicle demand will aid in achieving higher extender loadings, higher solids and lower VOC. Therefore, pigments with high oil and water absorptions and high pigment volume concentrations (PVC) should be avoided to reduce the pigment demand on the EPIKURE 8290-Y-60. Pigmentation of this component may be facilitated through moderate additions of cosolvent or water in the grind portion of the high speed dispersion process. Optimum pigment dispersing in the EPIKOTE 5522-WY-55 component is obtained by pebble milling. Pigmenting this component allows for formulation of a convenient 4:1 package ratio, as well as high PVC due to the greater amount of binder available for pigment wetting. In preparation of primer formulations, high speed dispersion of additives in either component is usually effective. In white enamel formulations, improved gloss may be achieved through use of a high surface treated, easy dispersing grade of rutile titanium dioxide. Due to the cationic nature of EPIKURE 8290-Y-60, standard anionic additives or dispersants can severely shock the system. Nonionic paint additives are recommended when applicable. The selection of extender pigments and corrosion inhibitors should also be made carefully as the pH of these materials can play a major role in stability and performance. Extremely basic or acidic pigments can interact destabilize EPIKURE 8290-Y-60 paint components.

Safety, Storage & Handling

Please refer to the MSDS for the most current Safety and Handling information.

For ease of handling and optimum shelf life, epoxy dispersions should be stored in tightly sealed containers at temperatures between 50 °F (10 °C) and 100 °F (37.8 °C). Do not allow the product to freeze. To prevent skinning or surface drying, do not leave the product uncovered for extended periods of time. If the need arises to store partially filled drums, replace the plastic top-sheet onto the surface of the liquid product.

Exposure to these materials should be minimized and avoided, if feasible, through the observance of proper precautions, use of appropriate engineering controls and proper personal protective clothing and equipment, and adherence to proper handling procedures. None of these materials should be used, stored, or transported until the handling precautions and recommendations as stated in the Material Safety Data Sheet (MSDS) for these and all other products being used are understood by all persons who will work with them. Questions and requests for information on Hexion Inc. ("Hexion") products should be directed to your Hexion sales representative, or the nearest Hexion sales office. Information and MSDSs on non-Hexion products should be obtained from the respective manufacturer.

Contact Information

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