

HRD 10-31



SPECIALTY HARDENER

HRD 10-31 is a specialty hardener for two part epoxy systems. It cures at room temperature or with heat to form tough semi-flexible epoxy polymers when used with a variety of epoxy resins. This hardener provides a low viscosity for lower mixed viscosities and can fully cure at room temperature or be accelerated using heat. The cured polymers made with this hardener will vary in properties based on the epoxy resin used, but are typically impact and shock resistance, have good adhesion to metals, PVC, ABS, other rigid plastics, and many other types of materials. Electrical insulating properties and chemical resistance are generally excellent. However, results will vary significantly depending on the chemistry of the epoxy resin used with this hardener. The HRD 10-31 hardener is REACH and RoHS compliant as of the date of this document.

HRD 10-31 is suggested for use with SP&S's EpoPro 1200 resin and a number of other filled and unfilled epoxy resin systems. SP&S can provide mixed property and cured polymer data for system based on our resins used with this hardener. If it is helpful, colored and modified versions of this hardener are available by request. Please contact us to discuss your application if you would like to receive samples of a custom color or to discuss the development of a custom variant that would be suitable for your application.

SUGGESTED APPLICATIONS

- Curative for adhesive, sealant, potting and coatings applications.

HANDLING PROPERTIES	VALUE	TEST METHOD
<u>HRD 10-31 (hardener/curative)</u>		
Visual Appearance	Clear light yellow liquid	Visual
Density, Part A	1.02 g/cm ³	ASTM E-201
Viscosity, Part A, @ 25°C	100 cps	ASTM D-2393
Flash Point	>140°C (>284°F)	ASTM D-92
Mix Ratio (part by weigh or volume)	varies with resin used.	
Viscosity, Mixed, at 25°C	varies with resin used	ASTM D-2393
Working life at 25°C	varies with resin used, but typically less than 1 hour.	
Cure Schedule: will vary with resin used, but most typically 24 hours at room temperature achieves a functional cure and handling strength. Remaining strength typically achieved within 3-7 days at room temperature. Can also be heat cured for 3-6 hours at 65°C or 1-3 hours at 80°C. Exact times will vary with the resins used with this hardener and requirements of the end use application(s).		

NOTE: Values are based on laboratory or average production results – not for specification purposes.

PROCESSING AND APPLICATION INSTRUCTIONS

To use, weigh (or proportion by volume) the desired resin and the HRD 10-31 in the specified mix ratio into a clean mixing container. If unsure of mix ratio to use please contact SP&S for assistance. Mixing containers should preferably be made of polypropylene, polyethylene, glass, or non-corroding metal. (Stainless steel, aluminum, etc.) Always use weighing equipment having accuracy that is

Product Datasheet



±1% or less of the smallest quantity that you will be weighing. Blend Part A & B thoroughly by using a spatula or stirring stick for at least 2 minutes using a kneading motion. Scrape the bottom and sides of the mixing container carefully and frequently to produce a uniform mixture. Vacuum degassing after mixing may be helpful for best electrical and physical properties.

Apply to clean, dry surfaces. For best adhesion, abrade the surface lightly. After abrasion, clean the surface of any loose material and degrease with solvent or detergent to remove any contaminants. The material may then be applied with any suitable application method include brushes, spatulas, trowels, etc.

PACKAGING AVAILABLE

This product is available in pints (1 lbs. net weight). Other sizes available by request. Please contact SP&S with any special packaging requests or for information on custom kitting.

STORAGE GUIDELINES

Store these materials in a clean, cool, and dry environment in their tightly closed original containers. Protect from extended exposure to temperatures below 10°C (50°F). Crystallization may occur if the material is exposed to cold for extended periods. If this occurs, heat the entire container for 4 hours at 60°C to re-liquefy the material. Allow to cool to ambient temperature prior to using. Also, protect from exposure to moisture or high humidity by tightly re-sealing containers after use. If the recommended storage conditions are observed the products will have a minimum shelf-life of 12 months from the date of shipment.

HANDLING PRECAUTIONS

Mandatory and recommended industrial hygiene procedures should be followed whenever these products are being handled and processed. For additional information please consult the corresponding material safety data sheets.

PERSONAL HYGIENE

HRD 10-31 DANGER Harmful if swallowed. Harmful in contact with skin. May cause an allergic skin reaction. Causes severe skin burns and eye damage. Causes serious eye damage. Harmful if inhaled. Suspected of damaging fertility or the unborn child. Avoid contact with eyes, skin, or clothing. Wear eye protection and impervious gloves when handling. Wash thoroughly after handling. Avoid breathing vapor or mist. Keep containers closed when not in use. Use only with adequate ventilation. Do not take internally.

FIRST AID

In case of contact: **Skin** – Immediately wash skin thoroughly with mild soap and water. Remove contaminated clothing and wash before reuse. Destroy contaminated shoes and other articles made of leather. **Eyes** – Immediately flush eyes with plenty of water for 15 minutes and get prompt medical attention. **Inhalation** - Remove person to fresh air. Administer oxygen or artificial respiration if necessary. Call a physician. **Ingestion** - Do not induce vomiting. Dilute with plenty of water and contact physician immediately. Never give anything by mouth to an unconscious person.

DISCLAIMER

IMPORTANT: The following supersedes Buyer's documents. **SELLER / MANUFACTURER MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller / Manufacturer be liable for incidental, consequential, or indirect damages for alleged negligence, breach of warranty, strict liability, tort, or contract arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results presented are based on controlled or laboratory work and must be confirmed by Buyer by testing for its intended conditions of use. The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.

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