Starting Formulation

SF 1021
Zinc-Rich Primer
EPON™ Resin 1001-CX-75 / EPIKURE™ Curing Agent 3115-X-70

Suggested Uses
Recommended as a shop- or field-applied primer for steel

Features
- Low toxicity maintenance primer
- Rapid development of adhesion and toughness permits handling in only minutes
- Can be welded in thin (1/2 to 1 mil) films
- Has excellent corrosion resistance; affords galvanic protection to adjacent undercoated areas
- Provides superior abrasion resistance

Formula | Material | Supplier | Pounds | Gallons
---|---|---|---|---
Part A | Pigment (thixotroping agent) | Cab-O-Sil | 25.4 | 1.45
| Cabot Corp. | | | |
| Vehicle | EPON Resin 1001-CX-75 | Hexion | 149.9 | 16.62
| Beetle™ U 216-8 | Cytec Industries | 9.4 | 1.11
| Methyl isobutyl ketone | Shell Chemical Company | 42.9 | 6.43
| Propylene glycol methyl ether | Shell Chemical Company | 66.4 | 8.68
| Xylene | | 54.2 | 7.51
| Total Part A | | 348.2 | 41.80

Part B
| EPIKURE Curing Agent 3115-X-70 | Hexion | 72.7 | 9.14
| Methyl isobutyl ketone | | 28.2 | 4.22
| Propylene glycol methyl ether | | 27.8 | 3.63
| Xylene | | 6.4 | 0.89
| Total Part B | | 135.1 | 17.88

Part C
| Zinc Dust Type 335 | Meadowbrook Company | 2,372.0 | 40.32
| Total Part C | | 2,372.0 | 40.32

Generated: July 10, 2020
Issue Date:
Revision:

® and ™ Licensed trademarks of Hexion Inc.

DISCLAIMER
The information provided herein was believed by Hexion Inc. ("Hexion") to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of the product and to determine the suitability of the product for its intended use. All products supplied by Hexion are subject to Hexion's terms and conditions of sale. Hexion MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY HEXION, except that the product shall conform to Hexion's specifications. Nothing contained herein constitutes an offer for the sale of any product.

Page 1 of 4
Mixing Instructions

<table>
<thead>
<tr>
<th></th>
<th>Pounds</th>
<th>Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part A</td>
<td>348.2</td>
<td>41.80</td>
</tr>
<tr>
<td>Part B</td>
<td>135.1</td>
<td>17.88</td>
</tr>
<tr>
<td>Part C</td>
<td>2,372.0</td>
<td>40.32</td>
</tr>
<tr>
<td>Part A + B + C</td>
<td>2,855.3</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Disperse the Cab-O-Sil™ in a suitable portion of the EPON™ Resin solution by means of vigorous agitation, or by grinding in a sand mill (maximum thixotropy is developed by grinding in the Cab-O-Sil). After the Cab-O-Sil is dispersed, let down the dispersion with the remaining epoxy resin solution, the additional solvents, and the Beetle™ U 216-8.

Charge the ingredients of the curing agent component to a suitable container and mix thoroughly. Package the base component, the curing agent component, and the zinc dust components separately to be mixed just prior to use.

Typical Handling

When ready to apply, add the curing agent component to the base vehicle component and mix thoroughly. Then, slowly add the zinc dust with good agitation. Continue mixing until the zinc dust is thoroughly dispersed. NOTE: BECAUSE OF THE LIMITED POT LIFE OF THE MIXED FORMULATION, DO NOT MIX ANY MORE MATERIAL THAN CAN BE APPLIED DURING THE WORKING DAY. TO PREVENT PIGMENT SETTLING, THE MIXED FORMULATION SHOULD BE STIRRED OCCASIONALLY DURING APPLICATION.

This formulation is designed for spray application only, although other application methods may be considered. A film thickness of 1.5 to 2.0 mils per coat is recommended with an interval of one day between coats. For use as a preconstruction or welding primer, this formulation should be applied to a dry film thickness of about 0.5 mil over the profile of the sandblasted steel. At this low film thickness the coating will dry to handle in a matter of minutes.

The formulation may be readily applied with conventional spray equipment, such as a DeVilbiss MBC-510 spray gun, equipped with an "E" fluid tip, a needle and a No. 54 air cap, and a pressure pot set-up. Recommended pot pressure and atomizing pressure are about 10 psi and 60 psi, respectively. The mixed formulation should preferably be allowed to age for approximately one hour before application. To reduce the formulation to spray application viscosity, use a thinner composed of MIBK/PGME/Xylene, 1/1/1 by weight.

Surfaces to be coated should be cleaned thoroughly. The preferred method for steel surfaces is sand- or grit-blasting.

The application methods for an EPON Resin 1001F/EPI-CURE™ Curing Agent 3115 Zinc-Rich Primer can involve the use of air or airless spray equipment. This system is normally air dried but can be force cured by baking if desired. This operation requires the use of well ventilated facilities (fresh air supply and adequate exhaust) along with the use of OSHA/NIOSH approved respiratory equipment for worker protection. In addition, the worker must wear appropriate protective clothing to avoid skin contact.

Typical Formulation Table 1 / Formulation Properties

<table>
<thead>
<tr>
<th>Properties</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonvolatile content by weight</td>
<td>%</td>
<td>89.9</td>
</tr>
</tbody>
</table>

Generated: July 10, 2020
Issue Date: 
Revision: 

© and ™ Licensed trademarks of Hexion Inc.

DISCLAIMER

The information provided herein was believed by Hexion Inc. ("Hexion") to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of the product and to determine the suitability of the product for its intended use. All products supplied by Hexion are subject to Hexion's terms and conditions of sale. Hexion makes no warranty, express or implied, concerning the product or the merchantability or fitness thereof for any purpose or concerning the accuracy of any information provided by Hexion, except that the product shall conform to Hexion's specifications. Nothing contained herein constitutes an offer for the sale of any product.
Nonvolatile content by volume  %  59.5
Weight per gallon  lb./gal.  28.6
Pigment : Binder Weight Ratio  14.2:1.0
Pigment volume concentration (PVC)  %  70
Volatile Organic Compound (VOC)  lb/gal.  2.89
g/L  347
Potlife  hrs  8+
Viscosity @ 25°C
Part A + B + C  KU  100

Cure Schedules Table 2 / Cure Schedules

At ambient temperatures of 70°F to 80°F, this coating will dry to handle in about six hours. Physical properties will be fully developed in about two days. Chemical and solvent resistance will be fully developed in seven days. At ambient temperatures of 55°F, several weeks may be required to produce full cure, as the adduct curing agent used in the formulation has low volatility and will remain in the film to react with the epoxy resin.

<table>
<thead>
<tr>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Force dry, to a sandable stage</td>
<td></td>
</tr>
<tr>
<td>100°F</td>
<td>hrs</td>
</tr>
<tr>
<td>110°F</td>
<td>hrs</td>
</tr>
<tr>
<td>120°F</td>
<td>min.</td>
</tr>
<tr>
<td>140°F</td>
<td>min.</td>
</tr>
<tr>
<td>Force dry, to full cure</td>
<td></td>
</tr>
<tr>
<td>140°F</td>
<td>hrs</td>
</tr>
<tr>
<td>High temperature bake, to full cure</td>
<td></td>
</tr>
<tr>
<td>200°F</td>
<td>min.</td>
</tr>
<tr>
<td>250°F</td>
<td>min.</td>
</tr>
<tr>
<td>300°F</td>
<td>min.</td>
</tr>
<tr>
<td>350°F</td>
<td>min.</td>
</tr>
<tr>
<td>400°F</td>
<td>min.</td>
</tr>
</tbody>
</table>

Storage Recommendations regarding storage conditions can be obtained by visiting our web site at [www.hexion.com](http://www.hexion.com)

General Information

These are starting formulations and are not proven in the user’s particular application but are simply meant to demonstrate the efficacy of the products and to assist in the development of the user’s own formulation. It is the user’s responsibility to fully-test and qualify the formulation, along with the ingredients, methods, applications or equipment identified herein (“Information”), by the user’s knowledgeable formulator or scientist, and to determine the appropriate use conditions and legal restrictions, prior to use of any Information.

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

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

For product prices, availability, or order placement, please contact customer service:

www.hexion.com/Contacts/

For literature and technical assistance, visit our website at www.hexion.com

© and ™ Licensed trademarks of Hexion Inc.

DISCLAIMER

The information provided herein was believed by Hexion Inc. ("Hexion") to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of the product and to determine the suitability of the product for its intended use. All products supplied by Hexion are subject to Hexion's terms and conditions of sale. HEXION MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY HEXION, except that the product shall conform to Hexion's specifications. Nothing contained herein constitutes an offer for the sale of any product.