

468 Zinc Rich Epoxy Primer

PRODUCT DATA:

- Versatile shop and field primer
- Outstanding resistance to chemicals and severe weathering
- Excellent adhesion to inorganic zincs
- Excellent anti-corrosive performance
- Excellent resistance to moisture
- Excellent resistance to petroleum solvents and aliphatic solvents
- Good resistance to corrosive chemicals
- Excellent resistance to abrasion
- Excellent resistance to weather
- Easily applied by airless or conventional spray

KHEMIX 468 forms a tough, abrasion resistant film which bonds strongly to steel, and existing epoxy surfaces. Zinc content of the coating gives steel cathodic protection if the film is damaged. Rapid drying permits early movement of steel when KHEMIX 468 is used as a shop primer for new construction projects by steel fabricators. Applies readily by spray to produce a smooth film. It will accept epoxy, aliphatic polyurethane and high build vinyl topcoats.

TYPICAL USES:

KHEMIX 468 is used as a shop primer for bare steel on new construction or major repair projects, and as a field maintenance primer over bare steel or steel coated with organic or inorganic zinc primers and epoxy topcoats. KHEMIX 468 may be used to repair itself or inorganic zinc primers.

RESISTANCE:

KHEMIX 468, when used with a suitable topcoat, has excellent resistance to weathering, water, salts, refined petroleum products, alcohols, solvents, animal and vegetable oils (up to 21/2 percent free fatty acid). KHEMIX 468 is not recommended for immersion service in acid or alkaline solutions. For specific recommendations, consult your ALSPEC representative.

PHYSICAL DATA:

| | | |
|---|---|-------------------|
| Finish | Flat | |
| Color | Red Oxide/Light Grey/White and selected range | |
| Components | 2 | |
| Volume solids | 63% | |
| Theoretical Coverage | 8.4 m ² /litre @ 75 microns DFT | |
| Dry film thickness per coat | 3 mils (75 microns) | |
| Coats | 1 | |
| Packing Ratio | 4 litres Resin : 1 litre Cure | |
| Calculated coverage | ft ² /gal | m ² /L |
| 1 mil (25 microns) | 769 | 18.8 |
| 3 mils (75 microns) | 256 | 6.3 |
| VOC | lb/gal | g/L |
| mixed | 4.1 | 492 |
| Temperature resistance (dry) 200°F (93°C) maximum | | |
| Flash point | 25°C (mixed) | |
| Recommended Thinner | Thinner No. 5 | |

468 Zinc Rich Epoxy Primer

APPLICATION DATA:

PRACTICAL APPLICATION RATES

| Micron Per Coat | Airless Spray | Conventional Spray | Brush | Roller |
|-----------------|---------------|--------------------|-------|--------|
| Dry | 75 | 75 | 50 | 65 |
| Wet | 119 | 119 | 79 | 103 |

AVERAGE DRYING TIME

| Ambient Temperature | Touch Dry | Hard Dry | Overcoating Interval | | Potlife |
|---------------------|-----------|----------|----------------------|------------|---------|
| | | | Minimum | Maximum | |
| 15°C | 2 hours | 6 hours | 24 hours | Indefinite | 8 hours |
| 25°C | 1.5 hours | 4 hours | 16 hours | Indefinite | 6 hours |
| 35°C | 1 hour | 3 hours | 12 hours | Indefinite | 3 hours |

Application Method Brush / Roller, Conventional Spray and Airless Spray.
Mixing Ratio (by volume) 4 parts Resin to 1 part Cure
Thinner Thinner No. 5 (Maximum 5% addition)

Airless Spray Nozzle Size : 0.46mm (18 thou)
 Fan Angle : 65°
 Operating Pressure : 155 kg/cm² (2200 psi)

Conventional Spray Nozzle Size : 1.27mm (50 thou)
 Atomising Pressure : 2.8 kg/cm² (40 psi)
 Fluid Pressure : 0.4 kg/cm² (6 psi)

Brush/ Roller This product is suitable for brush application. Application of more than one coat may be necessary to give equivalent dry film thickness to a single spray applied coat.



APPLICATION CONDITIONS AND OVERCOATING

This product should preferably be applied at temperature in excess of 10°C, In conditions of high relative humidity i.e. 80-85%, good ventilation conditions are essential. Substrate temperature should be at least 3°C above the dew point.

At application temperature below 10°C, drying and curing time will be significantly impaired. **Application at temperature below 5°C is not recommended.**

In order to achieve optimum water and chemical resistance, temperature needs to be maintained above 10°C during curing.

If it is desired to overcoat outside the times stated on the data sheet, please seek advice from **Alspec** representative.

468 Zinc Rich Epoxy Primer

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| | | | | |
|--|---|-------|---------|------|
| Applied over | New or previously coated steel | | | |
| Surface preparation | Dry abrasive blast, acid pickling or power tool cleaning. | | | |
| Method | Airless or conventional spray | | | |
| Mixing ratio (by volume) | 4 parts resin to 1 part cure | | | |
| Pot life (hours) | °F/°C | | | |
| | 90/32 | 70/21 | 50/10 | |
| nonaccelerated | 14 | 24 | 36 | |
| accelerated (1/4 pt 861/5 gal) | 7 | 12 | 18 | |
| Induction time | 15 minutes | | | |
| Environmental conditions | | | | |
| Temperature | °F | | °C | |
| air | 32 to 120 | | 0 to 49 | |
| surface | 32 to 140 | | 0 to 60 | |
| Surface temperatures must be at least 5°F (3°C) above dew point to prevent condensation. | | | | |
| Drying time (ASTM D1640) (hours) | °F/°C | | | |
| | 90/32 | 70/21 | 50/10 | 32/0 |
| nonaccelerated | | | | |
| touch | ¼ | 1/2 | 1 | 4 |
| through | ½ | 3/4 | 1 1/2 | 6 |
| topcoat (minimum) | 2 1/2 | 4 | 6 | 14 |
| accelerated (1/4 pt 861/5 gal) | | | | |
| touch | — | 1/3 | 1/2 | 2 |
| through | — | 1/2 | 1 | 4 |
| topcoat (minimum) | 2 | 3 | 5 | 10 |
| Topcoat required | Recommended KHEMIX epoxy, polyurethane and vinyl topcoats | | | |

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APPLICATION DATA SUMMARY:

See Application Instructions for complete information on surface preparation, equipment, environmental conditions, application procedures and safety precautions. To obtain maximum performance, apply as recommended. For conditions outside the requirements or limitations described, contact your ALSPEC representative.

SURFACE PREPARATION:

Coating performance is, in general, proportional to the degree of surface preparation. Abrasive blasting is usually the most effective and economical method. Prior to coating, all surfaces must be clean, dry and free of all contaminants, including salt deposits.

SAFETY PRECAUTIONS:

Read each component's material safety data sheet before use. Mixed material has hazards of each component. Safety precautions with Application Instructions must be strictly followed during storage, handling, application and drying periods. Improper use and handling of this product can be hazardous to health and cause fire and explosion. ***This product is for industrial use only. Not for residential use.***

468 Zinc Rich Epoxy Primer

WARRANTY:

ALSPEC warrants its products to be free from defects in material and workmanship. ALSPEC's sole obligation and Buyer's exclusive remedy in connection with the products shall be limited, at ALSPEC'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 ALSPEC in writing within five (5) 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 ALSPEC of such nonconformance as required herein shall bar Buyer from recovery under this Warranty.

ALSPEC makes no other warranties concerning the product. No other warranties, whether express, implied, or statutory, such as warranties of merchantability or fitness for a particular purpose, shall apply. In no event shall ALSPEC be liable for consequential or incidental damages.

Any recommendation or suggestion relating to the use of the products made by ALSPEC, whether in its technical literature, or in response to specific inquiry, or otherwise, is based on data believed to be reliable; however, the products and information are intended for use by Buyers having requisite skill and know-how in the industry, and therefore it is for Buyer to satisfy itself of the suitability of the products for its own particular use and it shall be deemed that Buyer has done so, at its sole discretion and risk. Variation in environment, changes in procedures of use, or extrapolation of data may cause unsatisfactory results.

| | |
|-------------------|-----------------------|
| Thinner | KHEMIX 012 |
| Equipment cleaner | Thinner or KHEMIX 012 |

SHIPPING DATA:

| | | |
|--------------------------|-----------|-----------|
| Packaging unit | 1 gal | 5 gal |
| cure | 1-qt can | 1-gal can |
| resin | 1-gal can | 5-gal can |
| Shipping weight (approx) | | |
| 1-gal unit | lb | kg |
| cure | 1.8 | .8 |
| resin | 18 | 8.2 |
| 5-gal unit | | |
| cure | 8.2 | 3.7 |
| resin | 92 | 42 |

Shelf life when stored indoors at 40 to 100°F (4 to 38°C)
cure and resin 1 year from shipment date

Numerical values are subject to normal manufacturing tolerances, color and testing variances. Allow for application losses and surface irregularities. See application instructions for complete information and safety precautions. This mixed product is photochemically reactive as defined by the South Coast Air Quality Management District's Rule 102 or equivalent regulations.

LIMITATION OF LIABILITY:

ALSPEC's liability on any claim of any kind, including claims based upon ALSPEC's negligence or strict liability, for any loss or damage arising out of, connected with, or resulting from the use of the products, shall in no case exceed the purchase price allocable to the products or part thereof which give rise to the claim. **In no event shall ALSPEC be liable for consequential or incidental damages.**

468 Zinc Rich Epoxy Primer

APPLICATION INSTRUCTION:

Refer to the Product Data Sheet for properties and uses. Adhere to all application instructions, safety precautions, conditions and limitations to obtain maximum performance. For conditions outside the requirements or limitations described, contact your KHEMIX representative.

SURFACE PREPARATION:

Coating performance is proportional to the degree of surface preparation. Prior to coating, surface must be clean, dry, undamaged and free of all contaminants, including salt deposits. Round off all rough welds and sharp edges, remove all weld spatter. **Steel** – New, without pits or depressions, blast SSPC-SP6 or pickle SSPC-SP8. Previously painted or pitted steel, blast SSPC-SP10. For mild exposures, power tool clean SSPC-SP3 is acceptable. Blast to achieve a 1- to 2-mils (25- to 50-microns) profile as indicated by a Keane-Tator Surface Profile Comparator or Testex Tape. Apply KHEMIX 468 as soon as possible to prevent blasted surface from rusting. Keep moisture, oil, grease or other organic matter off surface before coating. Spot blast to remove any contamination; solvent-wiping is not satisfactory.

REPAIR:

Inorganic zinc surfaces – Clean and dry surface making it free from oil, grease, rust, dirt and loose paint. For best results, blast damaged areas to SSPC-SP10 or mechanically clean.

Epoxy or polyurethane surfaces – Brush blast or sand to mechanically roughen coating at damaged areas. Remove all dust, dirt, etc., before applying KHEMIX 468.

APPLICATION EQUIPMENT:

The following is a guide; suitable equipment from other manufacturers may be used. Changes in pressure and tip size may be needed for proper spray characteristics.

Conventional spray – Industrial equipment such as DeVilbiss MBC or JGA, or Binks #18 or 62 spray gun. A moisture trap in the main air supply line and mechanical pot agitator are recommended. Separate regulators for air and fluid pressure are recommended.

Airless spray – Standard equipment such as Graco Bulldog Hydra-Spray or larger with a 0.017- to 0.021-inch fluid tip.

Power mixer – Jiffy Mixer powered by an air or explosion-proof electric motor.

ENVIRONMENTAL CONDITIONS:

For satisfactory cure, air and surface temperatures must be above 50°F (10°C).

Environmental conditions

| Temperature | °F | °C |
|-------------|-----------|----------|
| air | 50 to 120 | 10 to 49 |
| surface | 50 to 140 | 10 to 60 |

Surface temperatures must be 5°F (3°C) above the dew point to prevent condensation.

468 Zinc Rich Epoxy Primer

APPLICATION PROCEDURE:

KHEMIX 468 is packaged in the proper proportions of 1- or 5-gallon units, which must be mixed together before use.

1. Flush all equipment with KHEMIX 012 before use.
2. Stir contents of each component separately, then mix total contents of cure into total contents of resin and mix until uniformly blended to workable consistency. Allow an induction time of 15 minutes at 70°F (21°C) after mixing cure with resin before applying.

| Pot life (hours) | °F/°C | | |
|--------------------------------|-------|-------|-------|
| | 90/32 | 70/21 | 50/10 |
| nonaccelerated | 14 | 24 | 36 |
| accelerated (1/4 pt 861/5 gal) | 7 | 12 | 18 |

3. Thinning is normally not required. If necessary for workability, thin up to 1/2 pint KHEMIX 012 per gallon of KHEMIX 468. Use only ALSPEC recommended thinners.
4. Apply a wet coat in even, parallel passes; overlap each pass 50 percent to avoid holidays, bare areas and pinholes. If required, cross spray at right angles to first pass.
5. Random pinholes, holidays and small damaged bare areas can be touched up by brush when film is dry to touch. Larger areas should be resprayed.

| Drying time (ASTM D1640) (hours) | °F/°C | | | | |
|----------------------------------|-------|-------|-------|------|---|
| | 90/32 | 70/21 | 50/10 | 32/0 | |
| nonaccelerated | | | | | |
| touch | 1/4 | 1/2 | 1 | 4 | |
| through | 1/2 | 3/4 | 1 1/2 | 6 | |
| topcoat (minimum) | 2 1/2 | 4 | 6 | 14 | |
| accelerated (1/4 pt/861/5 gal) | | | | | |
| touch | — | 1/3 | 1/2 | 2 | |
| through | | — | 1/2 | 1 | 4 |
| topcoat (minimum) | 2 | 3 | 5 | 10 | |

6. Clean equipment with KHEMIX 012 immediately after use.

SAFETY PRECAUTIONS:

Read each component's material safety data sheet before mixing. Mixed material has hazards of each component.

KHEMIX 468 cure -- Flammable. Warning! Contains polyamide resin, ketone, trimethyl benzene, xylene and naphtha.

KHEMIX 468 resin – Flammable. Warning! Contains epoxy resin, zinc dust, ketone and petroleum distillate. Vapor, spray mist and/or dust can be harmful. Irritating to eyes, skin, mucous membranes, and respiratory system; can cause headache, nausea, dizziness or asphyxiation and/or lung injury. Can be harmful or fatal if swallowed. Can be harmful if inhaled or absorbed through skin. Overexposure to vapors, spray mist, dust or ingestion can cause lung, kidney and/or liver, central nervous system damage; skin and respiratory sensitization and allergic reaction such as rash, hives or asthma; skin and eye burns or injury. Zinc oxide welding fumes can cause “metal fume fever”.

468 Zinc Rich Epoxy Primer

First aid – For overexposure to vapor, spray mist or dust provide fresh air; if breathing is labored, give oxygen or artificial respiration. For skin contact, wash thoroughly with soap and water. For eyes, flush immediately with plenty of water for at least 15 minutes and get medical attention. If swallowed, drink 1 or 2 glasses of water to dilute. Do not induce vomiting. Consult physician or poison control center **immediately**. Treat symptomatically.

Hygienic practices – Wash thoroughly after use and before eating, smoking or using washroom. Launder contaminated clothing before use. Destroy contaminated leather or absorbent shoes which cannot be decontaminated.

Hazards – Keep away from heat, sparks, arc and open flame; avoid breathing vapor, dust, spray mist or contact with eyes and skin. Use adequate ventilation during mixing, application and drying to prevent concentration of solvent vapors and other hazardous fumes. Reports associate repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Wear protective equipment such as goggles, face protection, gloves, full protective clothing and properly fitted, NIOSH certified respirator during mixing, spraying and until all vapors and mists are gone. In confined, poorly ventilated areas, use airline, hood-type respirator and explosion- and spark-proof equipment. Welding and cutting can produce hazardous fumes and gases; follow the American National Standard Z49.1, “Safety in Welding and Cutting.” Prevent water or moisture contamination of resin. A chemical reaction can occur producing pressure buildup and hydrogen.

Fire – Blanket flames with dry chemical, carbon dioxide or foam. Wear self-contained, breathing apparatus. Closed containers may explode when exposed to extreme heat.

Spillage – Eliminate all sources of ignition or sparks. Use absorbent cleanup materials. Place in separate, closed, metal container. Keep out of sewers and waterways. If entry is threatened or occurs, notify local authorities.

Storage and disposal – Store in cool, dry, well-ventilated area; indoors between 40 to 100°F. Keep container closed and upright to prevent leakage. Prevent water or moisture contamination of resin. A chemical reaction can occur producing pressure buildup and hydrogen. Do not place unreacted, mixed material in a sealed scrap container containing water and other mixed materials as gassing may cause container to burst. Dispose of in separate, closed, metal container in accordance with all applicable regulations.

CAUTION – Improper use and handling of this product can be hazardous to health and cause fire or explosion. Do not use this product without first taking all appropriate safety measures to prevent property damage and injuries. These measures may include, without limitation: implementation of proper ventilation, use of proper lamps, wearing of proper protective clothing and masks, tenting and proper separation of application areas. Consult your supervisor. Proper ventilation and protective measures must be provided during application and drying to keep spray mists and vapor concentrations within safe limits and to protect against toxic

hazards. Necessary safety equipment must be used and ventilation requirements carefully observed, especially in confined or enclosed spaces, such as tank interiors and buildings. This product is to be used by those knowledgeable about proper application methods. ALSPEC makes no recommendation about the types of safety measures that may need to be adopted because these depend on application environment and space, of which ALSPEC is unaware and over which it has no control. If you do not fully understand these warnings and instructions or if you cannot strictly comply with them, do not use the product.

Note: Consult Code of Federal Regulations Title 29, Labor, parts 1910, 1915 and 1916 concerning occupational safety and health standards and regulations, as well as any other applicable federal, state and local regulations on safe practices in coating operations. *This product is for industrial use only. Not for residential use.*

468 Zinc Rich Epoxy Primer

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