Product information

# EPODIL® 748

## Reactive Diluent

## DESCRIPTION

Epodil 748 reactive diluent is an aliphatic glycidylether, comparable to Epoxide 8.[1] It is a monofunctional reactive diluent used to reduce the viscosity of epoxy resin systems. Since monofunctional diluents, in general, cause molecular weight chain termination, the minimum amount necessary to achieve the desired viscosity reduction should be used.

Epodil 748 reactive diluent is particularly useful where low volatility levels are required so that problems in poorly ventilated areas are minimized. It can be used in compliance with 21 CFR 175.300, 21 CFR 175.105, 21 CFR 176.180 and 21 CFR 177.1650 as a component of FDA-compliant formulations. Slight increases in pot life can be expected when 5.20% of Epodil 748 reactive diluent is blended with typical liquid epoxy resins.

## TYPICAL PROPERTIES

| Property | Value | Unit |
|---|---|---|
| **Appearance** | Clear Liquid | |
| **Color** | 100 | APHA |
| **Viscosity @ 25°C** | 5-10 | cPs |
| **Specific Gravity @ 21°C** | 0.890 | |
| **Flash Point (Setaflash)** | >93 | °C |
| **Hydrolyzable Chloride** | max 0.1 | |
| **Residual Epichlorohydrin** | max 10 | ppm |
| **Weight per Gall** | 7.3-7.5 | lb/gal |
| **Moisture Content** | max 0.1 | % |
| **Equivalent Wt/{H}** | 290 | |
| **Recommended Use Level (EEW=190)** | See Table | phr |

## ADVANTAGES

- Low vapor pressure and low toxicity
- Improves flexibility
- Improves adhesion to non-polar surfaces

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## APPLICATIONS

- Flooring, mortars and grouts
- High and 100% solids coatings
- Laminates
- Exposed aggregate

## STORAGE AND HANDLING

Refer to the Safety Data Sheet for Epodil 748 reactive diluent.

## SHELF LIFE

At least 36 months from the date of manufacture in the original sealed container at ambient temperature. Store away from excessive heat and humidity in tightly closed containers.

Material may crystallize or solidify upon exposure to low temperatures. Crystallized or solidified material can be utilized after melting at elevated temperatures without impacting handling or physical properties. It is recommended that the material be heated to 50-70°C while mixing continuously for 1 hour.

## SUPPLEMENTARY DATA

| Weight Percent Epodil 748 (%) | Viscosity @ 25°C (cPs) |
|---|---|
| Epodil 748 reactive diluent can be used as follows to lower the viscosity of a standard Bisphenol-A liquid epoxy resin (EEW=190) with an initial viscosity of 12,500 cPs: | |
| **5** | 5,300 |
| **10** | 2,500 |
| **15** | 1,250 |
| **20** | 750 |

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## EXAMPLE IMPACT OF DILUENT ON A SIMPLE FORMULATED SYSTEM

Evonik recommends that the formulator test reactive diluents in their system for performance. The following data is provided as an example of the impact of the reactive diluent on a simple formulated system.

| Property | Without Epodil 748 | With Epodil 748 |
|---|---|---|
| **Persoz hardness[2] at 23ºC (1 day/7day)** | 195/310 | 61/274 |
| **Phase 3 dry time[3] (h)** | 7:10 | 10:05 |
| **Tg[4] (1st scan)** | 51 | 48 |
| **Gel time[5] (min)** | 55 | 75 |

System :
- BADGE with 12.5 wt% Epodil 748
- Cured with Ancamine® 1618 curing agent at 1:1 stoichiometry

(2) BYK Persoz pendulum tester according to ISO 1522 with 10 mil WFT at 23°C/50% RH
(3) 6 mil WFT BK Drying time recorder according to ASTM D5895 with 6 mil WFT at 23°C/50% RH
(4) TA Instruments DSC model Q200 first scan data
(5) 150g mix using TECHNE Gel-timer

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**EVONIK OPERATIONS GMBH**
Business Line Crosslinkers
Paul-Baumann-Str. 1
45764 Marl
Germany

www.evonik.com/crosslinkers
**Product Information**: APCSE@evonik.com
**Sample Request:** APCSE@evonik.com

**EVONIK CORPORATION**
Business Line Crosslinkers
7001 Hamilton Boulevard
Trexlertown, PA 18087
USA

CrosslinkersProdinfo@evonik.com
Crosslinkers-Samples@evonik.com

**EVONIK SPECIALTY CHEMICALS (SHANGHAI) CO., LTD.**
Business Line Crosslinkers
55, Chundong Road
Xinzhuang Industry Park
Shanghai, 201108
China
CL-Asiainfo@evonik.com
CL-Asiainfo@evonik.com

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