Epoxy Curing Agents and Modifiers

EPODIL® 746 Reactive Diluent

DESCRIPTION

Epodil 746 reactive diluent is an aliphatic glycidyl ether, specifically 2-ethylhexyl glycidyl ether (EHGE). The product 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 746 reactive diluent is particularly useful where low volatility levels are required so that problems in poorly ventilated areas are minimized.

ADVANTAGES

- Efficient viscosity reduction
- Low volatility
- Improved flexibility

APPLICATIONS

- Flooring, mortars and grouts
- Laminates
- Potting compounds
- High and 100%-solids coatings

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.

STORAGE AND HANDLING

Refer to the Safety Data Sheet for Epodil 746 reactive diluent.

TABLE 1: TYPICAL PROPERTIES

Appearance	Clear Liquid
Color (Gardner)	2
Viscosity @ 77 °F (25 °C) (cP)	9
Specific Gravity @ 77 °F (25 °C)	0.910
Flash Point (Setaflash) (°F)	>200
Hydrolyzable Chloride (max)	0.1
Residual Epichlorohydrin (ppm max)	10
Weight per Gallon (lb/gal)	7.5-7.7
Moisture Content (% max)	0.1
Equivalent Wt/{H}	220
Recommended Use Level	See Table

TABLE 2: SUPPLEMENTARY DATA

Epodil 746 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 cP:

Weight Percent Epodil 746 (%)	Viscosity @ 77°F (25°C) (cP)
5	4,000
10	1,100
15	650
20	350

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.

SYSTEM:

- BADGE with 12.5 wt% Epodil 746
- Cured with Ancamine® 1618 curing agent at 1:1 stoichiometry

Property	Without Epodil 746	With Epodil 746
Persoz hardness[2] at 23°C (1 day/7day)	195/310	62/281
Phase 3 dry time[3] (h)	7:10	9:46
Tg[4] (1st scan)	51	49
Gel time[5] (min)	55	75

(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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