Technical Information

# Polimal® VE-11 M

DATE: 20.09.2023

## Polimal® VE-11 M

This is an unaccelerated, flame retardant, brominated bisphenol-A epoxy based vinyl ester resin.

## APPLICATION

**Polimal® VE-11 M** is designed for production glass fiber reinforced compositions and/or mineral fillers with high chemical and thermal resistance.

## PACKAGING

220 kg, 1100 kg

## SHELF LIFE

3 months from the date of manufacture.

## PROCESSING CONDITIONS

**The resin should be mixed before use**. Good curing requires ambient temperature above 18°C and low air humidity. The curing system under productions conditions should be tested.
In order providing optimal mechanical and resistance parameters is recommended to use glass veil with a grammage of 30g/m$^2$ made of C-glass as first laminate layer and post-curing at elevated temperature e.g. couple hours at 80°C. Post-curing is especially recommended if parts are intended for contact with chemicals.

## STORAGE

**Polimal® VE-11 M** should be stored in closed packaging in a dry, cool place, protected from sunlight and suitable for storage of flammable materials at temperatures not exceeding 25°C.

## SPECIFICATION

| Parameter | Unit | Value |
|---|---|---|
| **Viscosity in 25°C** acc. to ISO 3219 | mPa s | 300 ÷ 400 |
| **Gel time at 25˚C** acc. to ISO 2535 | min | 15 ÷ 30 |
| **Flexural strenght** acc. to ISO 178 | MPa | 130 |
| **Tensile strength** acc. to ISO 527 | MPa | 80 |
| **Tensile modulus** acc. to ISO 527 | MPa | 3600 |
| **Elongation at break** acc. to ISO 527 | % | 3,5 |
| **Heat deflection temperature (HDT)** acc. to ISO 75 | ˚C | 90 |
| **Barcol hardness** acc. to ASTM D 2583 | ˚B | 40 |

Gel time with 1% Co1% + 2% Luperox® K-12G (MEKP)

Mechanical parameters refer to unreinforced resin cured for 24 hours at room temperature and post-cured for 4 hours at 80 °C.

**Luperox®** is the trade name registered for products of **ARKEMA** company.
**Polimal®** is the trade name reserved for unsaturated polyester resins produced by **Sarzyna Chemical sp. z o.o**.



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Sąd Rejonowy w Rzeszowie
XII Wydział Gospodarczy
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## CHEMICAL RESISTANCE TABLE

Assessment of chemical resistance of non-reinforced resin to undermentioned chemicals was carried out under laboratory conditions according to PN-78/C 89067 standard. Test specimens have seasoned for 24 hours at temperature 23°C and the for 4 hours at temperature 80°C.

| Chemical | Concetration,% | Temperature, °C |
|---|---|---|
| Nitric acid | 21-29 | 40 |
| Nitric acid | 70 | Not recommended at any temperature |
| Phosphoric acid | 0-85 | 80 |
| Hydrochloric acid | 16-20 | 90 |
| Hydrochloric acid | 37 | 40 |
| Sulphuric acid | 0,5-25 | 90 |
| Sulphuric acid | 51-70 | 75 |
| Formic acid | 25 | 50 |
| Acetic acid | 0-25 | 90 |
| Acetic acid | 26-50 | 80 |
| Acetic acid | 76-85 | 45 |
| Hydrogen peroxide | 0-30 | 40 |
| Sodium hydroxide | 1 | 65 |
| Sodium hydroxide | 5 | 65 |
| Sodium hydroxide | 25 | 65 |
| Sodium hydroxide | 40 | 65 |
| Sodium hypochlorite | 0-18 | 80 |
| Iron(III)chloride | All | 90 |
| Sodium chloride | All | 90 |
| Iron(III)sulphate | All | 90 |
| Ethyl alcohol | 10 | 50 |
| Ethyl alcohol | 50 | 50 |
| Carbon tetrachloride | 100 | 40 |
| Phenol | 100 | Not recommended at any temperature |
| Styrene | 100 | Not recommended at any temperature |
| Acetone | 100 | Not recommended at any temperature |
| Gasoline unleaded, non-containing methanol | 100 | 50 |

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