



Polyethylene polyamine (PEPA).

a curing agent for epoxy resins

Characteristics

Polyethylene polyamine (PEPA) is a cold curing hardener for epoxy resins and compositions. It is a mixture of ethylene amines.

PEPA is completely soluble in water and in alcohol, leaving no residue, forms salts with acids. Absorb moisture and CO₂ from the air.

CAS. No: 26336-38-9.

Applications

The main application of polyethylene polyamine is a hardener of epoxy resins.

In addition, PEPA is used in the production of ion exchange resins, additives, as ashless dispersants and oil lubricant modifiers.

PEPA is a raw material for the production of an active base for corrosion inhibitors, epoxy compounds, amino resins, varnishes and paints, detergents and disinfectants.

Component of multifunctional additives for drilling fluids and lubricants processing in oil and gas extraction.

Carries out function of the modifier of chemically resistant cellular concrete.

In the manufacture of fuel nitrogen-containing additives.

Polyethylene polyamines are especially recommended for mixtures based on natural and synthetic rubber in combination with other additives and provide complete vulcanization.

How to use

For curing epoxy resins, from 5% to 30% of PEPA is required by weight of the resin, depending on the type of work, the average recommended ratio is 1:10.

The resin and hardener bonding should be processed at a temperature of at least +20°C.

Gelling time is about 1,5 hours, and the time of full curing is 24 hours.

Forbids to mix a large amount of resin with a hardener immediately, without using special mixing machines to avoid an effervescence.

With a lack of hardener, the resin remains uncured and does not gain the required mechanical properties; with an excess of hardener, curing proceeds very quickly, and the forming polymer becomes fragile.

Note: The exact amount of hardener and the viability of the composition are determined experimentally by the user, depending on the field of application, the weight of the fill, the curing mode, the presence and type of filler, etc.

When fiberglass products manufacturing, it is recommended to make a test sample for each batch of resin and hardener.

Storage

Store in a tightly closed container in a dark place at an ambient temperature from +15 to +40°C away from acids (anhydrides), oxidants, epichlorohydrin, water, sources of fire. PEPA is hygroscopic and, forming a solution with water, is partially hydrolyzed. Therefore, PEPA must be stored in air-tight containers.

Guaranteed shelf life in manufacturer's container - 24 months.

Storage over the date specified on the label does not necessarily mean the product is unusable. In case, if store more, please, check the properties of product before use.

Packing

- polymer canisters with a capacity of up to 25 dm³;
- polyethylene drums with a capacity of up to 50 dm³;
- steel barrels with a capacity of up to 200 dm³;
- steel barrels with a capacity of 220 dm³.

Safety instructions

Precautions: Store in a sealed container away from acids (anhydrides), oxidizing agents, epichlorohydrin, water, and sources of fire.

Use in premises equipped with flow-exhaust ventilation, use personal protective equipment.

It has pronounced alkaline properties and is toxic. Vapors of polyethylene polyamine cause irritation of the upper respiratory tract, in some people allergic dermatitis.

Please see detailed instructions in the relevant product safety data sheet, which can be provided upon request.

Technical characteristics

Parameter name and measure unit	Standard
Appearance	From light yellow to dark brown color fluid without mechanical inclusions, with a sharp smell of ammonia. A greenish color is allowed.
Solubility	Well soluble in water and alcohol
Color (Gardner), max.	10
Density, kg/m ³	950 - 1050
pH (10% aqueous solution)	11.8
Flash point, °C	200-230
Amin value, mgKOH/g	1200-1280
Mass fraction of total nitrogen, %, min	30.0
Mass fraction of mineral impurities, %, max	0.2
Mass fraction of water, %, max	2.0
Mass fraction of the fraction distilled off at a residual pressure of 1.3 kPa (10 mm Hg) in the temperature range:	
≤ +75°C, %, max	1.0
+75°C - +200°C, %, min	23.0
Mass fraction of bottom residue boiling above 200 ° C, %	65-75
Mass fraction of tertiary amino groups, %	5-9
Mass fraction of nitrogen titrated by acid, %	19.5-22.0
Gelling time, h, max	1.5

To obtain more information please contact your nearest representative office of Silkor Ltd.

LIMITED WARRANTY INFORMATION

PLEASE READ CAREFULLY

The information contained herein is accurate, but it does not relieve the customer from the control of each batch of products supplied. Since the conditions and methods of use of our products are beyond our control, the recommendations contained in this document should be updated by the client providing preliminary tests. Recommendations for use should not be construed as a guarantee of product suitability for a particular purpose.

Silkor Ltd only guarantees that the product meets its specifications in effect at the time of delivery.