

# Pentaerythritol technical

**Technical data sheet**  
version 01.02.2017

<b>Technical name:</b>	Pentaerythritol technical
<b>Mark of product:</b>	- Grade A, high grade (mono) - Grade A, first grade (tech) - Grade B (nitration)
<b>Synonyms:</b>	Tetrahydroxyneopentane, tetramethylolmethane, tetraoxymethylmethane
<b>CAS no :</b>	115-77-5
<b>EC no:</b>	204-104-9
<b>REACH registration number:</b>	01-2119473985-20-0003
<b>Chemical formula:</b>	$C_5H_{12}O_4$
<b>Manufacture:</b>	Pentaerythritol production unit started in 1982 and currently operated by PJSC "Metafrax"

## PRODUCT FEATURES

Indicator	Norm for grade		
	A		B
	High grade	First grade	
1. Appearance	White crystalline powder		
2. Mass fraction of monopentaerythritol , %, min	98,0	95,0	98,5
3. Melting temperature, °C, min	258	245	259
4. Mass fraction of water and volatile products, % max	0,1	0,2	0,1
5. Mass fraction of ash , %, max	0,0015	0,01	0,0015
6. Chromaticity of fusion cake by Pt-Co scale, max	100	200	100
7. Mass fraction of hydroxyl groups, %	49,7-50,0	49,4-50,0	49,8-50,0
8. Mass fraction of product passing through sieve 01K, %, max	13	not defined	9
9. pH of water solution with mass fraction 5%	5,0-7,0	5,0-7,0	5,0-7,0

## Application

- |   |  |
|---|--|
| 1. Paint-and-varnish industry:              | Used for polyether production, synthesis of alkyd varnishes, printing inks production, as part of polyurethane paints, fire-resistant materials production |
| 2. Production of polymers:                  | Used for production of pentaplast, plasticizers, stabilizers and antioxidants  |
| 3. Production of synthetic lubricating oil: | Basic component for production of lubricating oils   |
| 4. Production of explosives:                | Raw material for production of explosives - pentaerythritol tetranitrate   |
| 5. Other industries                         | Used for nitration, synthesis of surface active agents   |

## Data on Product

- Reference values:
  - Boiling temperature - 410 °C;
  - Density at 20 °C - 1,38 – 1,4 g/cm<sup>3</sup>;
  - Solubility in water at 20 °C – 55,6 g/l
- Combustible material .The dust sediment is fire-hazardous.  
Ignition temperature – 270 °C,  
Self-ignition temperature – 435 °C
- Product is moderately hazardous by the level of exposure on human organism

## Package

- Polypropylene bags with polyethylene liner with net weight of 25 kg;
- Specialized soft containers (big bags) with net weight of 500 – 1000 kg

## Applied means of transport

Pentaerythritol is transported by all means of roofed transport according to the general rules of cargo transportation.

## Classification of hazardous cargo: (acc. to UN recommendations for hazardous cargo transportation)

Pentaerythritol is not a hazardous cargo and it is not classified by UN recommendations.

## Conditions and duration of safe storage

Pentaerythritol is stored in closed warehouse with good ventilation protecting the material against atmospheric precipitation. Product should be stored on pallets positioned above the floor not less than 5 cm and from heaters not less than 1 m. Storage period shall not exceed 2 years from the date of manufacturing.