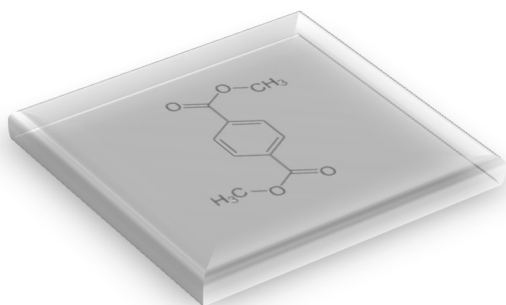


Dimethylterephthalate (liquid DMT) – Ultra-pure – Specification



C₁₀H₁₀O₄
CAS- Nr.: 120-61-6
EINECS-Nr.: 204-411-8
Mol-Gewicht: 194,2 g/mol
Verpackung: Spezialtankwagen

<i>Liquid DMT</i>	<i>Value/Unit</i>	<i>Method</i>
Appearance	Colorless in liquid form (hot melt)	[visual]
DMT content	min. 99.9%	[GC]*
Solidification point	140.63–140.64 °C	Physical test
Hazen colour of melt at 150 °C	max. 10	DIN EN ISO 6271 [photometry]
Acid value	max. 0.03 mg KOH/g	DIN EN ISO 2114 [potentiometry]

* In-house method

The information provided reflects our current findings and experience to the best of our knowledge. However, we accept no liability for its contents. We reserve the right to make any changes in line with technological progress or further developments. The information provided merely describes the nature of our products and services and does not constitute a guarantee. The customer must ensure that the functions and potential applications of the products are thoroughly checked by suitably qualified personnel. This also applies to the protection of third-party property rights. The mention of other companies' trade names does not constitute a recommendation and does not preclude the use of other products of the same description.

Miscellaneous properties

<i>Characteristic</i>	<i>Value (approx.) /unit</i>
Density at 150 °C	1.08 g/cm ³
Density at 20 °C	1.35 g/cm ³
Flash point	151 °C
Ignition temperature	520 °C
Saponification number (calculated)	577.8 mg KOH/g
Dynamic viscosity at 180 °C	0.71 mPa s
Dynamic viscosity at 200 °C	0.60 mPa s
Specific heat at 140 °C	1.47 kJ/kg K
Specific heat at 141 °C	1.74 kJ/kg K
Heat of fusion	159.1 kJ/kg
Heat of evaporation of melt	342.5 kJ/kg

For safety date, transport classes and toxicological data, see the safety data sheet. We can provide further parameters on request.

We supply our dimethyl terephthalate in liquid or solid form (white flakes). It is produced in Steyerberg using a method that was developed at our Witten plant.

Numerous DMT manufacturers around the world use this production method.

The DMT produced using our in-house method has a particularly high degree of purity and a uniform quality. Impurities caused by heavy metals or other elements, such as nitrogen, sulphur or halogen compounds, are eliminated in a rigorous cleaning process. Our DMT therefore guarantees complication-free further processing.

Solubility

The solubility of DMT in most conventional solvents is below 50 g/l solvent at 25 °C. Good solvents for DMT are chloroform (145 g/l), methylene chloride, dimethylformamide and dimethyl sulfoxide. Almost all glycols and higher alcohols (butanol and above) can be mixed with DMT in all ratios under normal pressure at their boiling point (transesterification).

Applications

DMT is used as a starting substance for the production of linear, crystallizable polyesters that can be stretched when cold. It is primarily combined with ethylene glycol to obtain polyethylene terephthalate (PET) or with butanediol to obtain polybutylene terephthalate (PBT), which are then further processed to produce continuous filaments, staple fibers, foils, films and molding compounds.

DMT can also be used with monohydric alcohols to produce terephthalate esters, which are used as plasticizers. One such example is the transesterification of DMT with 2-ethylhexanol to obtain dioctyl terephthalate (DOTP).

Physiological behavior and toxicology

This product is not subject to any classification as a hazardous material according to REACH or GHS. It poses a risk of burns in its liquid form due to the hot DMT melt.

Skin and eye irritation may occur upon prolonged exposure but do not result in lasting damage. Absorption of DMT through intact skin has not been established. Dust may irritate the mucous membranes.

Acute toxicology:

LD50 oral, more than over 5000 mg/kg

Storage

Under exclusion of air and moisture, liquid DMT can be transported and stored for several days in its liquid state without any negative impact on the quality. However, it must be noted that the temperature should be kept only slightly higher than the melting point in such cases in order to protect the product.