



## DIMETHYLFORMAMIDE (DMF)

### PRODUCT SPECIFICATIONS

Purity (DMF)	Min. 99.9%	<b>ANALYTICAL METHOD</b>
Water	Max. 150 ppm	Gas Chromatographic
Basicity (As Dimethylamin)	Max. 10 ppm	Coulometric
Acidity (As Formic acid)	Max. 10 ppm	Potensiometric
Color (APHA)	Max. 5	Potensiometric
Conductivity (20% Solution at 20°C)	Max. 1µs /cm	Colorimetric
pH (20% Solution at 25°C)	6.8 - 7.2	Conductometric
		pH meter

### PHYSICAL AND CHEMICAL PROPERTIES

Appearance/ Physical State	: Colorless liquid
Molecular Weight	: 73.09
Boiling Point (°C) (760 mmHg)	: 153
Freezing Point (°C)	: -61
Vapor Pressure (25 °C, mmHg)	: 3.7
Density (20 °C g/ml)	: 0.949
Heat of Vaporization	: 138 cal/gr
Auto Flammability (°C)	: 67
Flash Point (°C)	: 445
Combustion limits (at 100 °C)	: Minimum: by volume 2% : Maximum: by volume 15.2%
Critical Temperature (°C)	: 370
Critical Pressure (atm)	: 43.5
	: Solubility Completely soluble in water, ether, alcohols, esters, ketons, chlorinated and aromatic hydrocarbons. Partially soluble in aliphatic hydrocarbons.
Hydrolysis	: Highly stable where no alkali or acidic catalytic effects. DMF including 500 ppm water at 30 °C, forms 1 ppm formic acid or DMA products in app. 500 days. Hydrolyzing rate increases when duration and temperature of water concentration increase. However, hydrolyzing rate is negligible even if DMF includes water at 50 °C.

### PACKAGING

In stainless tanks and 190 kg steel drums.

### STORAGE

Keep product in a closed and isolated system. Minimize inhalation exposure duration and provide appropriate ventilation conditions. Wear rubber and PVC gloves and footwear while handling. In case of leakage, use self-contained breathing apparatus in order to avoid exposure to high vapor concentration. DMF is to be stored in stainless tanks and steel drums and use of copper and copper compounds is to be avoided. Where above conditions are provided, DMF can be stored for 1 year without losing its properties.



#### **APPLICATION FIELDS**

- Solvent for polymers and resins
- Catalyst in chemical reactions
- Gas absorption
- Solvent for electrolytes
- Solvent in extractions
- Raw material
- Solvent in crystallization

The strong solvent characteristic of DMF is mostly benefited in film and fiber production and also in adhesive and coating formulations. Use of DMF as a solvent is more economical than cheap solvents, due to its solving more solid substances in practical operating viscosities. DMF is especially an effective solvent with vinyl polymers, urethanes, epoxy resins, polyacrylonitril and polyamides. Due to its high purity and selective solvent characteristic, DMF is used for instance in removing or gaining acetylene; and removing butadiene from hydrocarbons processes.

#### **ACCIDENTAL RELEASE MEASURES**

Inhalation of DMF for a long time or its accumulation in the body by several absorptions through the skin may lead to important diseases. These diseases appear as nausea, gastro-intestinal cramps and irritation of esophagus. In case of eye and skin exposure, wash with plenty of water for 15 minutes. Seek medical attention immediately. Make sure that the clothing is properly cleaned before reusing.

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