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**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

|                 |   |
|-----------------|---|
| <b>Handling</b> | Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Do not breathe vapors or spray mist. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use explosion-proof equipment. Take precautionary measures against static discharges. |
| <b>Storage</b>  | Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition.   |

## 8. Exposure controls / personal protection

### Exposure Guidelines

|                   |                     |   |
|-------------------|---------------------|---|
| Dimethylformamide | TWA: 10 ppm<br>Skin | (Vacated) TWA: 10 ppm<br>(Vacated) TWA: 30 mg/m <sup>3</sup><br>Skin<br>TWA: 10 ppm |
|-------------------|---------------------|---|

OSHA - Occupational Safety and Health Administration

|                               |   |
|-------------------------------|---|
| <b>Respiratory Protection</b> | Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. |
| <b>Hygiene Measures</b>       | Handle in accordance with good industrial hygiene and safety practice.  |

## 9. Physical and chemical properties

|   |                          |
|---|--------------------------|
| <b>Physical State</b>                   | Liquid                   |
| <b>Appearance</b>                       | Colorless                |
| <b>Odor</b>                             | rotten-egg like          |
| <b>Odor Threshold</b>                   | No information available |
| <b>pH</b>                               | 6-8 @ 20°C 20% aq.sol    |
| <b>Melting Point/Range</b>              | -61 °C / -77.8 °F        |
| <b>Boiling Point/Range</b>              | 153 °C / 307.4 °F        |
| <b>Flash Point</b>                      | 58 °C / 136.4 °F         |
| <b>Method -</b>                         | Abel-Pensky (DIN 51755)  |
| <b>Evaporation Rate</b>                 | 0.17                     |
| <b>Flammability (solid,gas)</b>         | Not applicable           |
| <b>Flammability or explosive limits</b> |                          |

|   |                    |
|---|--------------------|
| <b>Upper</b>                                  | 15.2 vol %         |
| <b>Lower</b>                                  | 2.2 vol %          |
| <b>Vapor Pressure</b>                         | 4.9 mbar @ 20 °C   |
| <b>Vapor Density</b>                          | 2.5                |
| <b>Relative Density</b>                       | 0.945              |
| <b>Solubility</b>                             | Soluble in water   |
| <b>Partition coefficient; n-octanol/water</b> | No data available  |
| <b>Autoignition Temperature</b>               | 445 °C / 833 °F    |
| <b>Decomposition Temperature</b>              | > 350°C            |
| <b>Viscosity</b>                              | 0.8 mPa.s at 20 °C |
| <b>Molecular Formula</b>                      | C3 H7 N O          |
| <b>Molecular Weight</b>                       | 73.09              |
| <b>Surface tension</b>                        | 36.42 mN/m (25 °C) |

## 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactive Hazard</b>                  | None known, based on information available  |
| <b>Stability</b>                        | Stable under normal conditions.   |
| <b>Conditions to Avoid</b>              | Incompatible products. Heat, flames and sparks. Keep away from open flames, hot surfaces and sources of ignition. |
| <b>Incompatible Materials</b>           | Strong oxidizing agents, Halogens, Halogenated compounds, Reducing agents,  |
| <b>Hazardous Decomposition Products</b> | Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Nitrogen oxides (NO <sub>x</sub> )                       |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.  |
| <b>Hazardous Reactions</b>              | None under normal processing.   |

## 11. Toxicological information

### Acute Toxicity

|                                     |                                    |
|-------------------------------------|------------------------------------|
| <b>Product Information</b>          |                                    |
| <b>LC50 Inhalation (DUST) VALUE</b> | 9400 mg/m <sup>3</sup> /24 (mouse) |

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|  |  |
|--|--|
| <b>Teratogenicity</b>                            | Teratogenic effects have occurred in experimental animals. |
| <b>STOT - single exposure</b>                    | Respiratory system Central nervous system (CNS)            |
| <b>STOT - repeated exposure</b>                  | Kidney Liver spleen Blood                                  |
| <b>Aspiration hazard</b>                         | No information available                                   |
| <b>Symptoms / effects,both acute and delayed</b> |  |

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|                             |                       |
|-----------------------------|-----------------------|
| <b>Proper Shipping Name</b> | N,N-Dimethylformamide |
| <b>Hazard Class</b>         | 3                     |
| <b>Packing Group</b>        | III                   |

## 15. Regulatory information

### International Inventories

Component

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**U.S. Department of Transportation**

|                             |   |
|-----------------------------|---|
| Reportable Quantity (RQ):   | Y |
| DOT Marine Pollutant        | N |
| DOT Severe Marine Pollutant | N |