
 <p>Chemlabs</p>	<p align="center">LEONID CHEMICALS PVT. LTD., BANGALORE</p> <p align="center">An ISO-9001:2008 Certified Company</p> <p align="center">Quality Assurance Department</p>	<p>(CODE) DOCUMENT : WI</p> <p>(CODE) SECTION : W/SM</p> <p>(DATE) : 01.04.2011</p>	 <p>Issue : 02</p> <p>Rev.: 00</p>
<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): N, N-DIMETHYLFORMAMIDE</p>			<p>1 Page of 1</p>

SECTION 1- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name:
N, N-DIMETHYLFORMAMIDE

Catalog Numbers:
D024

Synonyms:
Unlisted

Company Information:
LEONID CHEMICALS Pvt Ltd,
62/A-2, 1st Stage,
Yeshvanthpur Industrial Suburb,
Asoka puram School Road,
Bangalore -22, Karnataka, INDIA
Ph- +91-80-23378354
Fax: +918023378354/23377126

SECTION 2- COMPOSITION, INFORMATION ON INGREDIENTS

CAS # : 68-12-2
Chemical Name : N, N-Dimethyl Formamide
% : Min 99%
EINECS# : 200-679-5
Hazard Symbols : None Listed.
Risk Phrases : None Listed.

SECTION 3- HAZARDS IDENTIFICATION



EMERGENCY OVERVIEW
Not available.

Potential Health Effects
Eye:
Causes eye irritation.

Skin:
Causes skin irritation. Substance is rapidly absorbed through the skin.

Ingestion:
Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver damage.

Inhalation:
May cause respiratory tract irritation. May cause effects similar to those described for

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ingestion.

Chronic:

Prolonged or repeated skin contact may cause dermatitis.

SECTION 4- FIRST AID MEASURES

Eyes:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin:

Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion:

Induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation:

Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician:

Not available.

SECTION 5- FIRE FIGHTING MEASURES

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors can travel to a source of ignition and flash back.

Extinguishing Media:

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

SECTION 6- ACCIDENTAL RELEASE MEASURES

General Information:

Use proper personal protective equipment as indicated in Section 8.



Spills/Leaks:

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Do not flush into a sewer. Remove all sources of ignition.

SECTION 7 - HANDLING and STORAGE

Handling:

Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

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Storage:

Keep away from heat, sparks, and flame. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from acids.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls:

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal Protective Equipment:

Eyes:

Wear safety glasses and chemical goggles if splashing is possible.

Skin:

Wear appropriate protective clothing to minimize contact with skin.

Clothing:

Wear appropriate protective clothing to minimize contact with skin.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State	: Liquid
Color	: Colorless liquid
Odor	: Faint amine odor
pH	: Not available.
Vapor Pressure	: 2.7 mm Hg at 20°C
Viscosity	: Not available.
Boiling Point	: 304 ° F
Freezing/Melting Point	: -78 ° F
Autoignition Temperature	: 833 °F (445.00 °C)
Flash Point	: 136°F (57.78 °C)
Explosion Limits, lower	: 2.2
Explosion Limits, upper	: 15.2
Decomposition Temperature	: Not available.
Solubility in water	: Completely soluble in water.
Specific Gravity/Density	: 0.94 (water=1)
Molecular Formula	: C ₃ H ₇ NO
Molecular Weight	: 73.0551



SECTION 10 - STABILITY AND REACTIVITY

Chemical Stability:

Stable.

Conditions to Avoid:

Stable, incompatible materials, ignition sources, strong oxidants.

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Incompatibilities with Other Materials:
Acids, oxidizers, halogenated materials, and nitrates.

Hazardous Decomposition Products:
Carbon monoxide, oxides of nitrogen, carbon dioxide.

Polymerization:
Has not been reported.

SECTION 11 - TOXICOLOGICAL INFORMATION

RTECS#:
CAS# 68-12-2: Lq2100000

LD50/LC50:
CAS# 68-12-2: Inhalation, mouse: LC50 = 9400 mg/m³/2H; Inhalation, rat: LC50 = 3421 ppm/1H; Inhalation, rat: LC50 = 3421 ppm/3H; Inhalation, rat: LC50 = 1948 ppm/4H; Oral, mouse: LD50 = 2900 mg/kg; Oral, rabbit: LD50 = 5 gm/kg; Oral, rat: LD50 = 2800 mg/kg; Skin, rabbit: LD50 = 4720 mg/kg; Skin, rat: LD50 = >3.2 gm/kg.

Carcinogenicity:
Formamide, n,n-dimethyl- -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Other:
See actual entry in RTECS for complete information.

SECTION 12 - ECOLOGICAL INFORMATION

Other:
No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

Products which are considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local waste regulator for advice. Empty containers must be decontaminated before returning for recycling.

SECTION 14 - TRANSPORT INFORMATION

IATA

Shipping Name : N, N-DIMETHYLFORMAMIDE
Hazard Class : 3
UN Number : 2265
Packing Group : III

IMO

Shipping Name : N, N-DIMETHYLFORMAMIDE
Hazard Class : 3

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UN Number : 2265
Packing Group : III

RID/ADR
Shipping Name : N, N-DIMETHYLFORMAMIDE
Hazard Class : 3
UN Number : 2265
Packing Group : III

USA RQ: CAS# 68-12-2: 100 lb final RQ; 45.4 kg final RQ

SECTION 15 - REGULATORY INFORMATION

European/International Regulations
European Labeling in Accordance with EC Directives

Hazard Symbols:
Not available.

Risk Phrases:
Not available.



Safety Phrases:
Not available.

WGK (Water Danger/Protection)
CAS# 68-12-2: 1

United Kingdom Occupational Exposure Limits
CAS# 68-12-2: OES-United Kingdom, TWA 10 ppm TWA; 30 mg/m³ TWA CAS# 68-12-2:
OES-United Kingdom, STEL 20 ppm STEL; 61 mg/m³ STEL

United Kingdom Maximum Exposure Limits
Canada
CAS# 68-12-2 is listed on Canada's DSL List. CAS# 68-12-2 is listed on Canada's Ingredient Disclosure List.

Exposure Limits:
CAS# 68-12-2:
OEL-AUSTRALIA: TWA 10 ppm (30 mg/m³); Skin
OEL-BELGIUM: TWA 10 ppm (30 mg/m³); Skin
OEL-CZECHOSLOVAKIA: TWA 30 mg/m³; STEL 60 mg/m³
OEL-DENMARK: TWA 10 ppm (30 mg/m³); Skin
OEL-FINLAND: TWA 10 ppm (30 mg/m³); STEL 20 ppm (60 mg/m³); Skin
OEL-FRANCE: TWA 10 ppm (30 mg/m³); Skin
OEL-GERMANY: TWA 20 ppm (60 mg/m³); Skin
OEL-HUNGARY: TWA 10 mg/m³; STEL 20 mg/m³; Skin
OEL-JAPAN: TWA 10 ppm (30 mg/m³); Skin
OEL-THE NETHERLANDS: TWA 10 ppm (30 mg/m³); Skin
OEL-THE PHILIPPINES: TWA 10 ppm (30 mg/m³); Skin

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OEL-POLAND: TWA 10 mg/m³
OEL-RUSSIA: TWA 10 ppm; STEL 10 mg/m³; Skin
OEL-SWEDEN: TWA 10 ppm (30 mg/m³); STEL 15 ppm (45 mg/m³); Skin
OEL-SWITZERLAND: TWA 10 ppm (30 mg/m³); STEL 20 ppm; Skin
OEL-TURKEY: TWA 10 ppm (30 mg/m³); Skin
OEL-UNITED KINGDOM: TWA 10 ppm (30 mg/m³); STEL 20 ppm; Skin
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND,
SINGAPORE, VIETNAM check ACGI TLV

US FEDERAL TSCA:

CAS# 68-12-2 is listed on the TSCA inventory.

SECTION 16 - ADDITIONAL INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Leonid Chemicals Pvt. Ltd. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, however arising, even if Leonid Chemicals Pvt. Ltd. has been advised of the possibility of such damages.



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		(CODE) SECTION : D024	
Title: SPECIFICATION MANUAL - N, N-DIMETHYL FORMAMIDE			Issue : 02 Rev.: 00 1 Page of 1

Specification manual - N, N-Dimethyl formamide

C₃H₇NO

MW: 73.09

Product : N, N-Dimethyl formamide LR
Description : Clear liquid
Cat No : D024
Cas No : 68-12-2
Prepared Date : 07.03.2005
Approved Date : 07.03.2005

REVISION HISTORY			
Issue/Rev	Description of Change	Author	Effective Date
01/00	<i>Initial Release</i>	S. Paul Joshua	07.03.2005
02/00	<i>Reviewed no changes</i>	S. Paul Joshua	01.04.2011
Next Review Due :	02.04.2015		
To be reviewed by :	Head-QC/QA		

Sl. No.	Tests	Specification
		LR
1	Assay GC	Min 99.0%
2	Water	0.1%
3	Acidity	0.009%
4	Density	0.948 – 0.95 g/ml

Approved By: S.Paul Joshua, Head Quality Control and Quality Assurance