TCI AMERICA
SAFETY DATA SHEET

Revision number: 1
Revision date: 07/06/2018

1. IDENTIFICATION

Product name: N,N-Dimethylformamide [for Spectrophotometry]
Product code: D0939

Product use: For laboratory research purposes.
Restrictions on use: Not for drug or household use.

Company:
TCI America
9211 N. Harborgate Street
Portland, OR 97203 U.S.A.
Telephone:
+1-800-423-8616 / +1-503-283-1681
Fax:
+1-888-520-1075 / +1-503-283-1987
e-mail:
sales-US@TCIchemicals.com
www.TCIchemicals.com

Emergency telephone number:
Chemical Emergencies:
TCI America (8:00am - 5:00pm) PST
+1-503-286-7624
Transportation Emergencies:
Chemtrec 24-Hour
+1-800-424-9300 (U.S.A.)
+1-703-527-3887 (International)
Responsible department:
TCI America
Environmental Health Safety and Security
+1- 503-286-7624

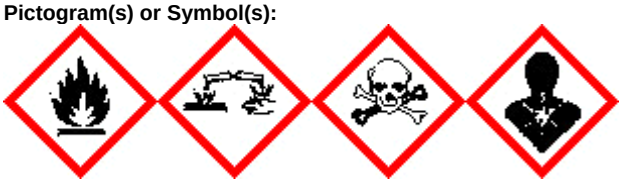
2. HAZARD(S) IDENTIFICATION

OSHA Haz Com: CFR 1910.1200:
WHMIS 2015:
Acute Toxicity - Oral [Category 4]
Acute Toxicity - Inhalation [Category 3]
Eye Damage/Irritation [Category 1]
Germ Cell Mutagenicity [Category 2]
Toxic to Reproduction [Category 1B]
Specific Target Organ Toxicity (Single Exposure) [Category 1]
Specific Target Organ Toxicity (Repeated Exposure) [Category 1]
Flammable Liquids [Category 3]

Signal word: Danger!

Hazard Statement(s):
Flammable liquid and vapor
Harmful if swallowed
Toxic if inhaled
Causes serious eye damage
Suspected of causing genetic defects
May damage fertility or the unborn child
Causes damage to: Liver
Causes damage to organs through prolonged or repeated exposure: Liver

Pictogram(s) or Symbol(s):



Precautionary Statement(s):

[Prevention] Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, open flames and hot surfaces. – No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating and lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist, vapors or spray. Use only outdoors or in a well-ventilated area. Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling. Wear protective gloves, protective clothing, face protection.

[Response] If swallowed: Call a poison center or doctor if you feel unwell. Rinse mouth. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor. If exposed: Call a poison center or doctor.

[Storage] Store in a well-ventilated place. Keep container tightly closed. Store locked up.

[Disposal] Dispose of contents and container in accordance with local, regional, national regulations (e.g. US: 40 CFR Part 261, EU:91/156/EEC, JP: Waste Disposal and Cleaning Act, etc.).

Hazards not otherwise classified: [HNOC] May be harmful if in contact with skin.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/mixture: Substance
Components: N,N-Dimethylformamide [for Spectrophotometry]
Percent: >99.5%(GC)
CAS RN: 68-12-2
Molecular Weight: 73.10
Chemical Formula: C_3H_7NO
Synonyms: DMF , Formyldimethylamine

4. FIRST-AID MEASURES

Description of first aid measures

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician.

Skin contact: Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Call a POISON CENTER or doctor/physician.

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Call a POISON CENTER or doctor/physician.

Ingestion: Call a POISON CENTER or doctor/physician. Rinse mouth.

Symptoms/effects:

Acute: Pain. Redness.

Delayed: May cause heritable genetic damage in humans.

Indication of any immediate medical attention:
Not available.
Notes to physician:
No data available

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Dry chemical, foam, water in large amounts, carbon dioxide.

Specific hazards arising from the chemical: Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume.
Hazardous combustion products: These products include: Carbon oxides Nitrogen oxides
Other specific hazards: Closed containers may explode from heat of a fire.

Advice for firefighters: Wear self-contained breathing apparatus if possible.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use extra personal protective equipment (self-contained breathing apparatus). Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.
Environmental precautions: Prevent product from entering drains.
Methods and materials for containment and cleaning up: Absorb spilled material in dry sand or inert absorbent before recovering it into an airtight container. In case of large amount of spillage, contain a spill by bunding. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
Prevention of secondary hazards: Remove all sources of ignition. Fire-extinguishing devices should be prepared in case of a fire. Use spark-proof tools and explosion-proof equipment.

7. HANDLING AND STORAGE

Precautions for safe handling: Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent generation of vapour or mist. Keep away from heat/sparks/open flame/hot surfaces. -No smoking. Take measures to prevent the build up of electrostatic charge. Use explosion-proof equipment. Wash hands and face thoroughly after handling.
Use a closed system if possible. Use a ventilation, local exhaust if vapour or aerosol will be generated. Avoid all contact!

Conditions for safe storage, including any incompatibilities

Storage conditions: Keep container tightly closed. Store in a cool, dark and well-ventilated place.
Store locked up.
Store away from incompatible materials such as oxidizing agents.

Packaging material: Comply with laws.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits:

ACGIH TLV(TWA):	5 ppm (skin)
OSHA PEL(TWA):	10 ppm (skin)
JSOH OELs(TWA):	10 ppm (skin)

Appropriate engineering controls: Follow safe industrial engineering/laboratory practices when handling any chemical. Install a closed system or local exhaust. Also install safety shower and eye bath.

Personal protective equipment

Respiratory protection:	Half or full facepiece respirator, self-contained breathing apparatus(SCBA), supplied air respirator, etc. Use respirators approved under appropriate government standards and follow local and national regulations.
Hand protection:	Impervious gloves.
Eye protection:	Safety goggles. A face-shield, if the situation requires.
Skin and body protection:	Impervious protective clothing. Protective boots, if the situation requires.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state (20°C):	Liquid
Form:	Clear
Colour:	Colorless
Odour:	Slight Amine-like
Odor threshold:	No data available
Odour threshold:	No data available

Melting point/freezing point:	-61°C (-78°F)	pH:	No data available
Boiling point/range:	153°C (307°F)	**Vapour pressure:**	No data available.
Decomposition temperature:	No data available	**Vapour density:**	2.5
Relative density:	0.95	**Dynamic Viscosity:**	0.69mPa·s (40°C)
Kinematic viscosity:	7.97mm²/s (40°C)		
Log Pow:	No data available	**Evaporation rate(Butyl Acetate=1):**	No data available
Flash point:	60°C (140°F)	**Autoignition temperature:**	440°C (824°F)
Flammability(solid, gas):	No data available	**Flammability or explosive limits:**	
		Lower:	2.2%
		Upper:	15.2%

Solubility(ies):

[Water]	Miscible
[Other solvents]	
Miscible:	Many organic solvents

10. STABILITY AND REACTIVITY

Reactivity:	No data available
Chemical stability:	Stable under proper conditions.
Possibility of hazardous reactions:	No special reactivity has been reported.
Conditions to avoid:	Spark, Open flame, Static discharge
Incompatible materials:	Oxidizing agents, Nitrates, Halogenated hydrocarbons
Hazardous decomposition products:	Carbon dioxide, Carbon monoxide, Nitrogen oxides (NOx)

11. TOXICOLOGICAL INFORMATION

RTECS Number: LQ2100000

Acute Toxicity:
orl-rat LD50:2000 mg/kg
ihl-rat LC50:1948 ppm/4H
skn-rbt LD50:4720 mg/kg
ihl-mus LC50:9400 mg/m³/2H

Skin corrosion/irritation:
skn-hmn 100%/24H MLD

Serious eye damage/irritation:
eye-rbt 100 mg rinse SEV

Respiratory or skin sensitization:
No data available

Germ cell mutagenicity:
cyt-hmn-lym 100 nmol/L
mmo-sat 600 ug/plate (-S9)

Carcinogenicity:
orl-rat TDLo:32032mg/kg/104W-C
ihl-rat TCLo:200 ppm/6H/104W-I

IARC: Group 3 (Not classifiable as carcinogenic to humans).
NTP: No data available
OSHA: No data available

Reproductive toxicity:
skn-rat TDLo:20 g/kg (1-20D preg)
ihl-rat TCLo:50 ppm/6H (13W male)
ihl-rat TCLo:300 ppm/6H (6-15D preg)

Target organ(s):
Causes damage to: Liver
Causes damage to organs through prolonged or repeated exposure: Liver

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Fish:	48h LC50:9800 mg/L (Oryzias latipes) 96h LC50:>100 mg/L (Oryzias latipes)
Crustacea:	48h EC50:>1000 mg/L (Daphnia magna)
Algae:	72h EC50:>1000 mg/L (Selenastrum capricornutum)

Persistence / degradability:	4.4 % (by BOD) , 8.8 % (by TOC) , 3.6 % (by GC) , 3.3 % (by UV-VIS)
Bioaccumulative potential(BCF):	0.3 - 0.8 (conc. 20 ppm) , 0.3 - 1.2 (conc. 2 ppm)
Mobility in soil	
Log Pow:	-1.01
Soil adsorption (Koc):	1
Henry's Law (PaM ³/mol):	7.49 x 10^{-3}

13. DISPOSAL CONSIDERATIONS

Disposal of product:	Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide assistance but does not replace these laws, nor does compliance in accordance with this section ensure regulatory compliance according to the law. US EPA guidelines for Identification and Listing of Hazardous Waste are listed in 40 CFR Parts 261. The product should not be allowed to enter the environment, drains, water ways, or the soil.
Disposal of container:	Dispose of as unused product. Do not re-use empty containers.
Other considerations:	Observe all federal, state and local regulations when disposing of the substance.

14. TRANSPORT INFORMATION

DOT (US)

UN number:	Proper Shipping Name:	Class or Division:	Packing Group:
UN2265	N,N-Dimethylformamide	3 Flammable liquid	III

IATA

UN number:	Proper Shipping Name:	Class or Division:	Packing Group:
UN2265	N,N-Dimethylformamide	3 Flammable liquid	III

IMDG

UN number:	Proper Shipping Name:	Class or Division:	Packing Group:
UN2265	N,N-Dimethylformamide	3 Flammable liquid	III

EmS number: F-E, S-D
Reportable Quantitiy: 100 Pounds (45.4 Kilograms)

15. REGULATORY INFORMATION

Toxic Substance Control Act (TSCA 8b.):
This product is ON the EPA Toxic Substances Control Act (TSCA) inventory.

US Federal Regulations

CERCLA Hazardous substance and Reportable Quantity:
- **SARA 313:** Listed
- **SARA 302:** Not Listed

State Regulations

State Right-to-Know
- **Massachusetts** Listed
- **New Jersey** Listed
- **Pennsylvania** Listed

California Proposition 65: Not Listed

Other Information

NFPA Rating:
- **Health:** 2
- **Flammability:** 2
- **Instability:** 0

HMIS Classification:
- **Health:** 2
- **Flammability:** 2
- **Physical:** 0

International Inventories

Canada: DSL On DSL
EC-No: 200-679-5

16. OTHER INFORMATION

Revision date: 07/06/2018
Revision number: 1

TCI chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its affiliates or subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our SDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated SDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.