

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Dimethyl Formamide

Other means of identification

Product Code(s) A2425

UN/ID no. 2265

Synonyms No information available

Product Use For Laboratory Research Use Only.

Supplier/Manufacturer

Biomatik Corporation
9-140 McGovern Dr.
Cambridge, Ontario N3H 4R7
Canada

Telephone Number 1-519-489-7195

E-mail Address info@biomatik.com

Emergency Telephone Number Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute Toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious Eye Damage/Eye Irritation	Category 2
Reproductive toxicity	Category 1B
Flammable liquids	Category 3

Label elements

Emergency Overview

Danger

Hazard statements

H312 - Harmful in contact with skin
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H360 - May damage fertility or the unborn child
H226 - Flammable liquid and vapor

**Appearance** Clear**Physical State** Liquid**Odor** No information available**Precautionary Statements - Prevention**

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Wash face, hands and any exposed skin thoroughly after handling
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking
 Keep container tightly closed
 Ground/bond container and receiving equipment
 Use explosion-proof electrical/ ventilating / lighting/ .? / equipment
 Use only non-sparking tools
 Take precautionary measures against static discharge

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
 Specific treatment (see .? on this label)
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 If eye irritation persists: Get medical advice/attention
 Call a POISON CENTER or doctor/physician if you feel unwell
 Wash contaminated clothing before reuse
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 In case of fire: Use CO2, dry chemical, or foam for extinction

Precautionary Statements - Storage

Store locked up
 Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not regulated

Other Information**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS-No	EC No.	Weight %	Trade Secret
Dimethylformamide	68-12-2	200-679-5	95-100	Not applicable

4. FIRST AID MEASURES**First Aid Measures****Eye Contact**

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids.
 Consult a physician.

Skin Contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.
Inhalation	Move to fresh air. If not breathing, give artificial respiration.
Ingestion	Call a physician immediately. Clean mouth with water and afterwards drink plenty of water.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms/Effects No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical

No information available.

Hazardous Combustion Products Carbon oxides. Nitrogen oxides (NO_x).

Explosion Data

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal protection Ensure adequate ventilation, especially in confined areas.

Environmental Precautions

Environmental Precautions See Section 12 for additional Ecological information.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Cover with dry lime or soda ash. Pick up and transfer to properly labeled containers. Ventilate area and wash spill site after material pickup is complete.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Handling Handle in accordance with good industrial hygiene and safety practice. Hygroscopic.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a cool, well-ventilated place. Hygroscopic.

Incompatible Products Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Dimethylformamide	TWA: 10 ppm	TWA: 10 ppm TWA: 30 mg/m ³	IDLH: 500 ppm TWA: 10 ppm TWA: 30 mg/m ³

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

- Eye/Face Protection** Tightly fitting safety goggles.
- Skin and Body Protection** Wear protective gloves/clothing.
- Respiratory Protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
- Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid	Odor	No information available
Appearance	Clear	Odor Threshold	No information available
Color	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No information available	
Melting point/freezing point	-61 °C	
Boiling Point/Range	153 °C	
Flash Point (High in °C)	No information available	136 °F
Evaporation Rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	No information available	
Vapor Density	No information available	
Specific Gravity	0.944	
Water Solubility	No information available	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition Temperature	No information available	
Decomposition Temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Explosive Properties	No information available	
Oxidizing Properties	No information available	

Other Information

Softening Point	No information available
Molecular Weight	No information available
VOC Content	No information available
Density	No information available
Bulk Density	No information available

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to Avoid

Hygroscopic.

Incompatible Materials

Strong oxidizing agents.

Hazardous Decomposition Products

Carbon oxides. Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Harmful by inhalation.
Eye Contact	Irritating to eyes.
Skin Contact	Harmful in contact with skin.
Ingestion	There is no data available for this product.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Dimethylformamide	= 2000 mg/kg (Rat) = 2800 mg/kg (Rat)	= 1100 mg/kg (Rat) > 3.2 g/kg (Rat)	-

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
Mutagenic Effects No information available.
Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Dimethylformamide	-	Group 3	-	-

Reproductive Toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Chronic Toxicity Suspected teratogen.
Target Organ Effects Liver, Kidneys, Heart, Blood, Respiratory system, Reproductive system.
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

12. ECOLOGICAL INFORMATION

Ecotoxicity

0% of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Toxicity to Fish	Crustacea
Dimethylformamide	500: 96 h Desmodesmus subspicatus mg/L EC50	9800: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 6300: 96 h Lepomis macrochirus mg/L LC50 10410: 96 h Pimephales promelas mg/L LC50 flow-through	8485: 48 h Daphnia magna mg/L EC50 semi-static 7500: 48 h Daphnia magna mg/L EC50 6800 - 13900: 48 h Daphnia magna mg/L EC50 Static

Persistence and Degradability

No information available.

Bioaccumulation/Accumulation

No information available.

Chemical Name	Partition coefficient
Dimethylformamide	-1.028

Other Adverse Effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste Disposal Method

Dispose of material in accordance with all federal, state, and local regulations.

Contaminated Packaging

Do not re-use empty containers.

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Dimethylformamide	-	-	-	-

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Dimethylformamide	-	-	-	-

Chemical Name	California Hazardous Waste Status
Dimethylformamide	-

14. TRANSPORT INFORMATION

DOT

UN/ID no. 2265
 Proper shipping name N,N-Dimethylformamide
 Hazard Class 3
 Packing Group III

IATA

UN/ID no. 2265
 Proper shipping name N,N-Dimethylformamide
 Hazard Class 3
 Packing Group III

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Component	SARA 313 - Threshold Values %
Dimethylformamide	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Dimethylformamide	-	-	-	-

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Dimethylformamide	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

Chemical Name	California Prop. 65
Dimethylformamide	-

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Dimethylformamide	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not regulated

16. OTHER INFORMATION**Disclaimer**

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet