Preparing for the New Era of Laboratories

MATERIAL SAFETY DATA SHEET (MSDS)

According to regulation (EU) no.1907/2006

N,N-DIMETHYLFORMAMIDE 99,8% AR

PRODUCT CODE : B-3055

CAS No : 68-12-2

FORMULA : C_3H_7NO

UN No : 2265

website : www.labotiq.net

MATERIAL SAFETY DATA SHEET (SDS/MSDS)
N,N-DIMETHYLFORMAMIDE 99,8% AR

MSDS Number : 0235 | Date : Aug 26th, 2024 | Version : 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product Name : **N,N-DIMETHYLFORMAMIDE 99,8% AR**
Synonyms : DMF; N,N-Dimethylmethanamide, Formic acid dimethylamide
CAS No. : 68-12-2
HS Code : 2924 29 90
Chemical Formula : $HCON(CH_3)_2$ C_3H_7NO Hill
Molecular Weight : 73.10 g/mol
Product Code : B-3055
Brand : Labotiq
1.2 Manufacturer : Labotiq
Address : Jl.Terapi Raya AD2-Bumi Menteng Asri Bogor, Jawa Barat Indonesia – 16111
Website : www.labotiq.net
Email : labotiq.id@gmail.com
For information : Phone : (+62-251) 839110, 8311662, Fax : (+62-251) 83135710
Emergency number : +6281316894650
1.3 Application : Laboratory chemicals, Manufacture of substances, General Chemical reagent

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Flammable liquids (Category 3), H226
Acute toxicity, Inhalation (Category 4), H332
Acute toxicity, Dermal (Category 4), H312
Eye irritation (Category 2), H319
Reproductive toxicity (Category 1B), H360D

For the full text of the H-Statements mentioned in this Section, see Section 16

2.2 Label elements
Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal word	Danger
Hazard statement(s)	
H226	Flammable liquid and vapour.
H312 + H332	Harmful in contact with skin or if inhaled.
H319	Causes serious eye irritation.
H360D	May damage the unborn child.
Precautionary statement(s)	
P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P370 + P378	In case of fire: Use dry powder or dry sand to extinguish.
Supplemental Hazard Statements	none
Restricted to professional users.	

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Rapidly absorbed through skin.

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms : DMF; N,N-Dimethylmethanamide, Formic acid dimethylamide
Formula : $HCON(CH_3)_2$ C_3H_7NO Hill
Molecular weight : 73.10 g/mol
CAS-No. : 68-12-2
EC-No. : 200-679-5
Index-No. : 616-001-00-X

3.2 Mixture

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
N,N-Dimethylformamide CAS-No. 68-12-2 EC-No. 200-679-5 Index-No. 616-001-00-X	Flam. Liq. 3; Acute Tox. 4; Eye Irrit. 2; Repr. 1B; H226, H332, H312, H319, H360D	<=100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media
Water Foam Carbon dioxide (CO2) Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given..

5.2 Special hazards arising from the substance or mixture
Carbon oxides Nitrogen oxides (NOx) Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air at elevated temperatures. Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information
Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition.Take precautionary measures against static discharge.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons. Handle and store under inert gas.

Storage class

Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Appropriat engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

FFace shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this

product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact
Material: butyl-rubber
Minimum layer thickness: 0,7 mm
Break through time: 480 min
Material tested:Butoject®

Splash contact
Splash contact
Material: Viton®
Minimum layer thickness: 0,7 mm
Break through time: 240 min
Material tested:Vitoject®

Body Protection
Flame retardant antistatic protective clothing.

Respiratory protection
Recommended Filter type: Filter A-(P2) The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure
Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Form: liquid, clear Colour: colourless
Odour	amine-like
Odour Threshold	0,329 ppm
pH	7 at 200 g/l at 20 °C
Melting point/freezingpoint	Melting point/range: -61 °C - lit.
Initial boiling point and boiling range	153 °C
Flash point	57,5 °C - closed cup - DIN 51755 Part 2
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or	Upper explosion limit: 16 %(V) Lower explosion limit: 2,2 %(V)
explosive limits	No data available
Vapour pressure	3,77 hPa at 20 °C
Vapour density	2,52 - (Air = 1.0)
Relative density	0,944 g/mL - lit.
Water solubility	1.000 g/l at 20 °C completely miscible
Partition coefficient: noctanol/water	log Pow: -0,85 at 25 °C – Bioaccumulation is not expected.
Auto-ignition temperature	435 °C at 1.013 hPa - DIN 51794
Decomposition temperature	> 350 °C -

Viscosity	Viscosity, dynamic: 0,86 mPa.s at 20 °C
Explosive properties	No data available
Oxidizing properties	none

9.2 Other safety information

Relative vapor density	2,52 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity

Vapor/air-mixtures are explosive at intense warming.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature)

10.3 Possibility of hazardous reactions

Violent reactions possible with: Alkali metals halogens halides Reducing agents triethylaluminium nitrates metallic oxides nonmetallic oxides Halogenated hydrocarbon Isocyanates sodium Sodium borohydride hydrides

Oxidizing agents Oxides of phosphorus A risk of explosion and/or of toxic gas formation exists with the following substances: azides Bromine Chlorine chromium(VI) oxide potassium permanganate triethylaluminium chlorates Halogenated hydrocarbon with Iron

10.4 Conditions to avoid

Heating.

10.5 Incompatible materials

various plastics, Copper, Copper alloys, Tin

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - 3.010 mg/kg (OECD Test Guideline 401)
Symptoms: Gastrointestinal disturbance
Acute toxicity estimate Inhalation - 4 h - 11,1 mg/l (Expert judgment)
Remarks: (Regulation (EC) No 1272/2008, Annex VI)
LD50 Dermal - Rabbit - 1.500 mg/kg
Remarks: (Regulation (EC) No 1272/2008, Annex VI) (IUCLID)

Skin corrosion/irritation

Skin - Rabbit
Result: No skin irritation - 20 h
Remarks: (ECHA)

Serious eye damage/eye irritation

Eyes - Rabbit
Result: Eye irritation
Remarks: (ECHA) (Regulation (EC) No 1272/2008, Annex VI)

Respiratory or skin sensitisation
Local lymph node assay (LLNA) - Mouse
Result: negative (OECD Test Guideline 406)

Germ cell mutagenicity
Test Type: sister chromatid exchange assay
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Result: negative
Remarks: (ECHA)
Test Type: unscheduled DNA synthesis assay
Test system: human diploid fibroblasts
Metabolic activation: with and without metabolic activation
Result: negative
Remarks: (ECHA)
Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Result: negative
Remarks: (ECHA)
Test Type: Micronucleus test
Species: Mouse Cell type: Bone marrow
Application Route: Intraperitoneal injection
Result: negative
Remarks: (ECHA) Test Type: dominant lethal test
Species: Rat
Application Route: Inhalation
Result: negative Remarks: (ECHA)
Test Type: dominant lethal test
Species: Mouse
Application Route: Intraperitoneal
Result: negative Remarks: (ECHA)
Test Type: Micronucleus test Species: Mouse
Application
Route: Intraperitoneal
Result: negative
Remarks: (ECHA)

Carcinogenicity
Carcinogenicity - Did not show carcinogenic effects in animal experiments. (Lit.)
IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (N,N-Dimethylformamide)

Reproductive toxicity
May damage the unborn child.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
No data available

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish
flow-through test

LC50 - Lepomis macrochirus (Bluegill sunfish) - 7.100 mg/l - 96 h(N,N-Dimethylformamide) (US-EPA)

Toxicity to daphnia and other aquatic invertebrates
static test EC50 - Daphnia magna (Water flea) - 13.100 mg/l - 48 h(N,NDimethylformamide) (OECD Test Guideline 202)

Toxicity to algae
static test EC50 - Desmodesmus subspicatus (green algae) - > 1.000 mg/l - 72 h (N,N-Dimethylformamide) (DIN 38412)

Toxicity to bacteria
static test EC50 - Vibrio fischeri - 12.300 - 17.500 mg/l - 5 min(N,NDimethylformamide)
Remarks: (External MSDS)

12.2 Persistence and degradability

Biodegradability
aerobic - Exposure time 21 d
Result: 100 % - Readily biodegradable. (OECD Test Guideline 301E)

Biochemical Oxygen Demand (BOD) 900 mg/g
Remarks: (Lit.)

Theoretical oxygen demand 1.863 mg/g
Remarks: (Lit.)

12.3 Bioaccumulative potential

Bioaccumulation Cyprinus carpio (Carp) - 56 d at 25 °C - 0,002 mg/l(N,N-dimethylformamide)
Bioconcentration factor (BCF): 0,3 - 1,2 (OECD Test Guideline 305C)
Remarks: Does not significantly accumulate in organisms.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Stability in water - ca.50 d(N,N-Dimethylformamide)
Test substance: Water
Remarks: reaction with hydroxyl radicals(calculated)(Lit.)

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 2265 IMDG: 2265 IATA: 2265

14.1 UN number

ADR/RID: 2265 IMDG: 2265 IATA: 2265

14.2 UN proper shipping name

ADR/RID: N,N-DIMETHYLFORMAMIDE
IMDG: N,N-DIMETHYLFORMAMIDE
IATA: N,N-Dimethylformamide

14.3 Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

14.4 Packaging group

ADR/RID: III IMDG: III IATA: III

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H226	Flammable liquid and vapour.
H312	Harmful in contact with skin.
H312 + H332	Harmful in contact with skin or if inhaled.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H360D	May damage the unborn child.

National Fire Protection Association (U.S.A.):

Health: 2
Flammability: 2
Reactivity: 0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Labotiq shall not be held liable for any damage resulting from handling or from contact with the above product.

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