

Safety Data Sheet

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)
Classification according to Regulation (EC) No. 1272/2008 [CLP]

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

Product identifier

Product code TS-20672
Product name Dimethylformamide (DMF); 50 mL

Chemical Name Not Applicable
REACH registration number No registration number is given yet for this substance / substances in this mixture since the annual import quantity is less than one tonnage per annum or the transition period for its registration according to Article 23 of REACH has not yet expired.

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses For research use only
Use Description Code SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen), PROC15 - Use as laboratory reagent, PC21 - Laboratory chemicals, SU24 - Scientific research and development
Uses advised against Not for consumer use.

Details of the supplier of the safety data sheet

Manufacturer / Supplier

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24 hour Emergency Response for Hazardous Materials [or Dangerous Goods] Incident. Spill, Leak, Fire, Exposure, or Accident. Call CHEMTREC Within the USA + Canada: 1-800-424-9300 and 1-703-527-3887
Outside the USA + Canada: 1-703-741-5970

Country Specific Emergency Number (if available):

CHEMTREC Ireland (Dublin) +(353)-19014670 (Greeting Language: English and Irish)
CHEMTREC UK (London) +(44)-870-8200418 (Greeting Language: English)

Revision date 24-Jun-2020
Product code TS-20672

Page 1 / 11
Product name Dimethylformamide (DMF); 50 mL

SECTION 2: Hazards identification

Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Physical hazards

Flammable liquids	Category 3
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Health hazards

Acute dermal toxicity	Category 4
Acute inhalation toxicity	Category 4
Serious eye damage/eye irritation	Category 2
Reproductive Toxicity	Category 1

Environmental hazards

Not Hazardous

Additional information

No information available

Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP]

Hazard pictograms



Signal Word

Danger

Hazard Statements

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

Precautionary Statements

Prevention

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
P201 - Obtain special instructions before use
P264 - Wash hands thoroughly after handling

Response

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction

Revision date 24-Jun-2020
Product code TS-20672

Page 2 / 11
Product name Dimethylformamide (DMF); 50 mL

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
 P308 + P313 - IF exposed or concerned: Get medical advice/attention

Storage

P403 + P235 - Store in a well-ventilated place. Keep cool

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Other hazards

Not Applicable

SECTION 3: Composition/information on ingredients

Chemical Name	CAS No	EINECS-No.	Weight-%	REACH registration number	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Dimethylformamide	68-12-2	200-679-5	98-100	-	Flam. Liq. 3 - H226 Acute Tox. 4 - H312 Acute Tox. 4 - H332 Eye Irrit. 2 - H319 Repr. 1B - H360D

SECTION 4: First aid measures

Description of first aid measures

Skin contact Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Immediate medical attention is required.

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

Ingestion Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Get medical attention if symptoms occur.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. If symptoms persist, call a doctor.

Notes to Physician Treat symptomatically.

Most important symptoms and effects, both acute and delayed

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

Indication of any immediate medical attention and special treatment needed

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Get medical advice/attention.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media

Water spray. Carbon dioxide (CO₂). Foam. Dry chemical.

Unsuitable extinguishing media

No information available.

Special hazards arising from the substance or mixture

None known

Protective equipment and precautions for firefighters

Wear self-contained breathing apparatus and protective suit.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation

Avoid contact with skin, eyes or clothing

Use personal protection equipment

See section 8 for more information

Environmental precautions

No special environmental precautions required. Avoid discharge into drains and waterways whenever possible.

Methods and material for containment and cleaning up

Soak up with inert absorbent material.

Reference to other sections

See section 8 for more information.

SECTION 7: Handling and storage

Precautions for safe handling

Always wear recommended Personal Protective Equipment. See section 8 for more information. Do not get in eyes, on skin, or on clothing. Do not ingest. If during normal use the material presents a respiratory hazard, use adequate ventilation and/or wear appropriate respirator.

Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Keep in properly labelled containers. Store in accordance with local regulations.

Storage Conditions

20 to 25°C (68 to 77°F).

Specific end use(s)

For research use only.

SECTION 8: Exposure controls/personal protection

Control parameters

Chemical Name	EU OEL (TWA)	EU OEL (STEL)	EU Skin Notation
Dimethylformamide 68-12-2	None	None	None

Chemical Name	Austria	Belgium (TWA)	Czech Republic
Dimethylformamide 68-12-2	5 ppm 15 mg/m ³	5 ppm 15 mg/m ³	15 mg/m ³ TWA 30 mg/m ³ Ceiling (toxic for reproduction, listed under 148) Irritant Potential for cutaneous absorption Potential chronic health effects

Chemical Name	Denmark (TWA)	Finland OEL (TWA)	France OEL (VME)
Dimethylformamide 68-12-2	5 ppm 15 mg/m ³	None	5 ppm 15 mg/m ³

Chemical Name	Germany OEL (TWA)	Ireland (TWA)	Italy OEL (TWA)
Dimethylformamide 68-12-2	5 ppm exposure factor 2 15 mg/m ³ exposure factor 2	5 ppm 15 mg/m ³	5 ppm 15 mg/m ³

Chemical Name	Lithuania OEL (TWA)	Netherlands OEL (MAC)	Norway
Dimethylformamide 68-12-2	5 ppm 15 mg/m ³	15 mg/m ³	5 ppm TWA 15 mg/m ³ TWA 10 ppm STEL 30 mg/m ³ STEL

Chemical Name	Poland	Portugal	Spain OEL (TWA)
Dimethylformamide 68-12-2	15 mg/m ³ TWA Skin Notation 30 mg/m ³ STEL	10 ppm TWA 30 mg/m ³ TWA 10 ppm STEL 30 mg/m ³ STEL skin - potential for cutaneous exposure A4 - Not Classifiable as a Human Carcinogen	5 ppm 15 mg/m ³

Chemical Name	Sweden - Occupational Exposure Limits - TLVs (LLVs)	Switzerland	United Kingdom
Dimethylformamide 68-12-2	5 ppm TLV NGV; 15 mg/m ³ TLV NGV	10 ppm STEL 30 mg/m ³ STEL 5 ppm TWA 15 mg/m ³ TWA	5 ppm TWA; 15 mg/m ³ TWA

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Exposure controls

Personal protection equipment

Respiratory protection In case of insufficient ventilation wear respirators and components tested and approved under appropriate government standards.

Hand protection Wear suitable gloves Glove material: Compatible chemical-resistant gloves.

Eye protection Tight sealing safety goggles.

Skin and Body Protection Wear laboratory coat for body protection.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls
No special environmental precautions required.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance	liquid	
Odour	No data	
Odour Threshold	No data	
Molecular Weight	No data	
Melting point / melting range	°C No data	°F No data
Boiling point / boiling range	°C 153	°F 307.4
Flash point	°C 57.5	°F 135.5
Autoignition Temperature	°C 445	°F 833
Decomposition temperature	°C No data	°F No data
Evaporation rate	No data	
Flammability (solid, gas)	Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat. HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Some may polymerize (P) explosively when heated or involved in a fire. Runoff to sewer may create fire hazard. Many liquids are lighter than water	
Upper explosion limit	No data	
Lower explosion limit	No data	
Vapour Pressure	0.36 kPa (2.7 mm Hg) [room temperature]	
Vapour density	2.5 [Air = 1]	
Relative density	0.95	
Specific gravity	No data	
Solubility	Soluble in the following materials: cold water, hot water, methanol, diethyl ether and acetone	
Partition coefficient: n-octanol/water	-1.01	
Viscosity	No data	
Explosive properties	No data	
Oxidising properties	No data	
Other information	No data.	

SECTION 10: Stability and reactivity

Reactivity	None known.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Hazardous reaction has not been reported.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
Incompatible materials	Oxidising agent.
Hazardous decomposition products	No known hazardous decomposition products.

SECTION 11: Toxicological information

Information on toxicological effects

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Dimethylformamide	= 2000 mg/kg (Rat) = 2800 mg/kg (Rat)	= 1.500 mg/kg (Rabbit)	4 h - 9 - 15 mg/l (Rat)

Principal Routes of Exposure

Skin corrosion/irritation	Data are conclusive but insufficient for classification
Serious eye damage/irritation	Irritating to eyes
Respiratory or skin sensitisation	Data are conclusive but insufficient for classification
Specific target organ toxicity (STOT) – single exposure	Data are conclusive but insufficient for classification
Specific target organ toxicity (STOT) – repeated exposure	Data are conclusive but insufficient for classification
Carcinogenicity	Data are conclusive but insufficient for classification
Germ cell mutagenicity	Data are conclusive but insufficient for classification
Reproductive Toxicity	Product is or contains a chemical which is a known or suspected reproductive hazard
Aspiration Hazard	Data are conclusive but insufficient for classification

SECTION 12: Ecological information

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Chemical Name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Microtox Data	log Pow
Dimethylformamide	Desmodesmus subspicatus EC50>500 mg/L (96 h)	Daphnia magna EC50=8485 mg/L (48 h) Daphnia magna EC50=7500 mg/L (48 h) Daphnia magna EC506800 - 13900 mg/L (48 h)	No data available	No data available	logPow-1.028

Mobility in soil No information available.

Persistence and degradability No information available.

Bioaccumulative potential No information available.

Results of PBT and vPvB assessment

No information available.

Other adverse effects

Contains a known or suspected endocrine disruptor.

Chemical Name	EU - Endocrine Disruptors Candidate List
Dimethylformamide	Group III Chemical

SECTION 13: Disposal considerations

Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in accordance with approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.

SECTION 14: Transport information

IATA / ADR / DOT-US / IMDG

Classified as dangerous in the meaning of transport regulations

UN number	2265
UN proper shipping name	N,N-dimethylformamide
Transport hazard class(es)	3
Packing group	III

Revision date 24-Jun-2020
Product code TS-20672

Page 8 / 11
Product name Dimethylformamide (DMF); 50 mL

Environmental hazards

Not Applicable

Special precautions for user

Not Applicable

Transport in bulk according to Annex II of MARPOL and the IBC Code

Not Applicable.

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture**Substances of Very High Concern**

Chemical Name	Weight-%	EU - REACH (1907/2006) - Article 59(1) - Candidate List of Substances for Eventual Inclusion in Annex XIV
Dimethylformamide	98-100	Reason for inclusion Toxic for reproduction, Article 57c

Substance subject to authorisation per REACH Annex XIV

None

Restricted substances under EC 1907/2006, Annex XVII

Chemical Name	Weight-%	EU - REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances
Dimethylformamide	98-100	Use restricted. See item 72. Use restricted. See item 30.

Substances listed under Annex I of Regulation (EC) No 689/2008

None.

Restricted substances under Annex V of Regulation (EC) No 689/2008

None.

Substances under Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC

None.

German Water hazard classes (Wassergefährdungsklassen)

Chemical Name	Weight-%	Water hazard class (WGK)
Dimethylformamide	98-100	hazard class 2 - obviously hazardous to water

Other International Inventories

Chemical Name	EINECS (European Union)	ELINCS (European List of Notified Chemical Substances)	ENCS (Japan)	PICCS (Philippines)
Dimethylformamide	Listed	-	Listed	Listed

Chemical Name	AICS (Australia)	South Korea (KECL)	Canada (DSL)	NDSL
Dimethylformamide	Listed	Listed	Listed	-

Revision date 24-Jun-2020
 Product code TS-20672

Page 9 / 11
 Product name Dimethylformamide (DMF); 50 mL

Chemical safety assessment

No Chemical safety assessment has been carried out.

SECTION 16: Other information

Reason for revision Update according to Commission Regulation (EU) No 830/2015
Revision number 3
Revision date 24-Jun-2020

References

- ECHA: <http://echa.europa.eu/>
- TOXNET: <http://toxnet.nlm.nih.gov/>
- eChemPortal: <http://www.echemportal.org/>
- LOLI database: <https://www.chemadvisor.com/loli-database>

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Flammable liquids	Category 3	Calculation method
Acute dermal toxicity	Category 4	Calculation method
Acute inhalation toxicity	Category 4	Calculation method
Serious eye damage/eye irritation	Category 2	Calculation method
Reproductive Toxicity	Category 1	Calculation method

Abbreviations and acronyms

TWA - Time-Weighted Average
OELs - Occupational Exposure Limits
STEL - Short Term Exposure Limit
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
KECL - Korean Existing and Evaluated Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
CEPA - Canadian Environmental Protection Act
EPA - Environmental Protection Agency
OSHA - Occupational Safety and Health Administration of the US Department of Labour
IATA - International Air Transport Association
DOT - Department of Transportation
IMDG - International Maritime Dangerous Goods
ACGIH - American Conference of Governmental Industrial Hygienists
NIOSH - National Institute for Occupational Safety and Health
AIHA - American Industrial Hygiene Association
HMIS - Department of Defense Hazardous Materials Information System
NTP - National Toxicology Program
IARC - International Agency for Research on Cancer

"The above information was acquired by diligent search and/or investigation and the recommendations are based on prudent application of professional judgment. The information shall not be taken as being all inclusive and is to be used only as a guide. All materials and mixtures may present unknown hazards and should be used with caution. Since the Company cannot control the actual methods, volumes, or conditions of use, the Company shall not be held liable for any damages or losses resulting from the handling or from contact with the product as described herein. THE INFORMATION IN THIS SDS DOES NOT CONSTITUTE A WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE"

Revision date 24-Jun-2020
Product code TS-20672

Page 11 / 11
Product name Dimethylformamide (DMF); 50 mL