

SAFETY DATA SHEET

info@deffner-johann.de | +49 9723 9350-0

Die in diesem Produktdatenblatt genannten Spezifikationen dienen nur zur Produktbeschreibung und beziehen sich auf den Zeitpunkt unmittelbar nach der Produktion bzw. Import des Produktes. Sie entsprechen den Angaben des Herstellers. Eine rechtsverbindliche Zusicherung bestimmter Eigenschaften oder der Eignung für einen bestimmten Einsatzzweck kann hieraus nicht abgeleitet werden. Durch unsachgemäßen Transport und / oder unsachgemäße Lagerung können sich Änderungen ergeben. Die Angaben in diesem Produktdatenblatt entbinden den Verarbeiter nicht von eigener Prüfung der Eigenschaften des Produktes und dessen Eignung für die vorgesehene Verwendung.

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)

2303000 Dimethylformamide

Page 1

Revised edition: 21.10.2019

Version: 7.0

Printed: 26.10.2020

1. Identification of the Substance/Mixture and of the Company/Undertaking

1.1. Product Identifier

Product Name: Dimethylformamide

Article No.: 2303000

1.2. Relevant identified Uses of the Substance or Mixture and Uses advised against

Identified uses:

*Industrial application
Manufacture of rubber goods.*

Uses advised against:

1.3. Details of the Supplier of the Safety Data Sheet (Producer/Importer)

Company: Deffner & Johann GmbH

Address: Mühlackerstraße 13, D-97520 Röthlein, Germany

Tel./Fax.: +49 9723 9350-0 / +49 9723 9350-25

Internet:

E-Mail: info@deffner-johann.de

Importer:

1.4. Emergency No. +49 9723 9350-0 (Mo. - Fr.: 8:00 - 15:00 Uhr)

Emergency No.:

1.4.2 Poison Center:

2. Hazards Identification

2.1. Classification of the Substance or Mixture

*Classification according to Regulation
(EC) No. 1272/2008 (CLP/GHS)*

*Flammable liquids, hazard category 3
Acute toxicity (dermal), hazard category 4
Serious eye damage, hazard category 2
Acute toxicity (inhalation), hazard category 4
Reproductive toxicity, hazard category 1B*

H226 Flammable liquid and vapour.

Cat.: 3

H312 Harmful in contact with skin.

Cat.: 4

H319 Causes serious eye irritation.

Cat.: 2

H332 Harmful if inhaled.

Cat.: 4

H360D May damage the unborn child.

Cat.: Repr. 1B

Possible Environmental Effects:

See Section 12.

2.2. Label Elements

Classification according to Regulation

next page: 2

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)

2303000 Dimethylformamide

Page 2

Revised edition: 21.10.2019

Version: 7.0

Printed: 26.10.2020

(EC) No. 1272/2008 (CLP/GHS)

Hazard designation:



GHS02-2



GHS07



GHS08

Signal word:

Danger

Hazard designation:

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

Safety designation:

P201	Obtain special instructions before use.
P210	Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P280	Wear protective gloves/ clothing/ eye/ face protection.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses and continue rinsing.
P308+P313	If exposed or concerned: Get medical advice/attention.

Hazardous components for labelling:

N,N-Dimethylformamide

2.3. Other Hazards

The results of the PBT and vPvB evaluation can be found in section 12.5.

3. Composition/Information on Ingredients

3.1. Substance

This product is a substance: see details under 3.2.

3.2. Mixture

Chemical Characterization:

Information on Components / Hazardous Ingredients:

N,N-Dimethylformamide (H226-312-319-332-

next page: 3

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)

2303000 Dimethylformamide

Page 3

Revised edition: 21.10.2019

Version: 7.0

Printed: 26.10.2020

360D); REACH Reg. No. 01-2119475605-32-xxxx	100 %	CAS-Nr: 68-12-2
		EINECS-Nr: 200-679-5
		EC-Nr: 616-001-00-X

Additional information:

This product contains a substance which is on the candidate list according to Article 59 of the REACH Regulation 1907/2006 (1, 10) in a concentration ≥ 0.1 % (w/w).

4. First Aid Measures

4.1. Description of the First Aid Measures

General information:

*First aiders have to protect themselves.
Take person away from hazardous area.
Give artificial respiration in case breathing is not regular or if it has stopped.
Remove contaminated clothes immediately.
Intoxication symptoms may occur after several hours, therefore a 48 hour medical observation is necessary.*

After inhalation:

*Supply fresh air and keep patient calm.
Oxygen therapy in case of impaired breathing.
In case of unconsciousness place patient stable in side position for transportation.
Consult physician immediately.*

After skin contact:

*Remove contaminated clothing immediately. Wash off immediately with plenty of water and soap.
Get medical attention.*

After eye contact:

*Rinse open eyes with plenty of water for at least 15 minutes.
Consult physician.*

After ingestion:

*Do NOT induce vomiting. Consult a doctor.
Rinse mouth with plenty of water and consult physician.*

4.2. Most important Symptoms and Effects, both Acute and Delayed

Symptoms:

Severe eye irritation.

Effects:

*Harmful in contact with skin.
Harmful by inhalation.*

4.3. Indication of any Immediate Medical Attention and special Treatment needed

Treatment:

Treat symptomatically.

5. Fire-Fighting Measures

next page: 4

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)

2303000 Dimethylformamide

Page 4

Revised edition: 21.10.2019

Version: 7.0

Printed: 26.10.2020

5.1. Extinguishing Media

Suitable extinguishing media:

Foam, carbon dioxide, extinguishing powder, water, water mist.

Unsuitable extinguishing media:

Water with full jet.

5.2. Special Hazards arising from the Substance or Mixture

Special hazards:

The vapor is heavier than air, spreads along the ground and distant ignition is possible.

May cause explosive vapor-air-mixtures.

In case of fire: formation of other toxic decomposition products are also possible.

5.3. Advice for Firefighters

Protective equipment:

Wear self-contained respiratory protective device and protective clothing.

Further information:

Cool closed containers exposed to fire with water mist.

Collect contaminated extinguishing water and debris separately; avoid contamination of sewage system.

6. Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Personal precautions:

Wear protective clothing.

Ensure adequate ventilation.

Keep away from sources of heat and ignition.

Avoid contact with skin, eyes and clothing. Do not ingest or inhale.

6.2. Environmental Precautions

Environmental precautions:

Prevent contamination of soils, drains and surface water.

Contact local authorities if product pollutes soil or vegetation.

6.3. Methods and Material for Containment and Cleaning Up

Methods and material:

Contain with inert absorbent material (dry sand, vermiculite, active charcoal) and dispose as hazardous waste.

6.4. Reference to other Sections

Protective clothing, see Section 8.

7. Handling and Storage

7.1. Precautions for Safe Handling

Instructions on safe handling:

Keep containers tightly closed.

A nearby eyewash facility should be available for emergencies.

Provide adequate ventilation.

Avoid contact with eyes and skin.

next page: 5

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)

2303000 Dimethylformamide

Page 5

Revised edition: 21.10.2019

Version: 7.0

Printed: 26.10.2020

Hygienic measures:

*Keep away from foodstuffs and drinks. Do not eat, drink or smoke during work. Wash hands before breaks and at the end of work.
Take off contaminated clothing immediately. Store working clothing separately.
Do not inhale gas/fumes/vapours/aerosols.
Avoid contact with eyes and skin.
Pregnant women and women of childbearing age should avoid contact with this product.*

7.2. Conditions for Safe Storage, including any Incompatibilities

Storage conditions:

Store in tightly sealed containers in a cool and well ventilated location.

Requirements for storage areas and containers:

*Store in a place which is only accessible to authorized staff.
Store in a room with a solvent-proof floor.
Store the product in the original container.
Suitable container material: stainless steel.
Unsuitable container material: plastics*

Information on fire and explosion protection:

*Combustible liquid.
Vapors may form an explosive mixture with air. Vapor is heavier than air and spreads along the ground.
Keep away from sources of ignition - do not smoke.
Take measures to prevent electrostatic discharge.
Do not store together with combustible and self-ignitable products.
Do not store together with: oxidants.
Do not store together with: foodstuffs, beverages and feed.*

Storage class:

3; Flammable liquids (TRGS 510)

Further Information:

*Storage temperature: < 50°C
For long-term storage it is recommended to store the product under nitrogen.*

7.3. Specific End Use(s)

Further information:

8. Exposure Controls/Personal Protection

8.1. Parameters to be Controlled

Parameters to be controlled (DE):

*TRGS 900, AGW:
TLV (DE): 15 mg/m³, 5 ppm (2)
Can be absorbed by the skin.
A risk of fetal damage cannot be eliminated even when the TLV and BEL will be complied to.*

next page: 6

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)

2303000 Dimethylformamide

Page 6

Revised edition: 21.10.2019

Version: 7.0

Printed: 26.10.2020

Parameters to be controlled:

Threshold Limit Value (TWA): 15 mg/m³, 5 ppm
Short Term Exposure Limit (STEL): 30 mg/m³, 10 ppm
Can be absorbed by the skin.

Derived No-Effect Level (DNEL):

15 mg/m³ (worker/consumer, inhalation, long-term exposure - systemic effects)
3.31 mg/kg bw/d (worker, skin contact, long-term exposure - systemic effects)
1.98 mg/kg bw/d (consumer, skin contact/swallowing, long-term exposure - systemic effects)

Predicted No-Effect Concentration (PNEC):

Fresh water: 30 mg/l
Seawater: 3 mg/l
Fresh water sediment: 25.05 mg/kg
Soil: 16.24 mg/l
Sewage treatment system (STP): 123 mg/kg
Sporadic release: 30 mg/l

Additional Information:

Biological limit value (TRGS 903):
N-Methylformamide: 35 mg/l (creatinine in urine; end of exposure/shift)

8.2. Exposure Controls

Technical protective measures:

Provide adequate ventilation.
No further measures, see Section 7 and 8.

Personal Protection

General protective measures:

Remove contaminated clothing immediately.
Keep away from foodstuffs and drinks. Do not eat, drink or smoke during work. Wash hands before breaks and at the end of work.
Do not inhale gas/fumes/vapor/aerosol.

Respiratory protection:

Respiratory equipment required in case of insufficient ventilation, filter combination type A-P2.

Hand protection:

Protective gloves. The glove material has to be impermeable and resistant to the product / substance / preparation.

Protective glove material:

Butyl rubber (480 min; 0.5 mm).
Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek advice from glove suppliers.

Eye protection:

Tightly fitting safety goggles (EN 166).

next page: 7

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)

2303000 Dimethylformamide

Page 7

Revised edition: 21.10.2019

Version: 7.0

Printed: 26.10.2020

Body protection:

Protective clothing.

Environmental precautions:

*Prevent contamination of open water ways and sewage system.
Avoid contamination of ground water.
Contact local authorities if large spillages cannot be contained.*

9. Physical and Chemical Properties

9.1. Information on Basic Physical and Chemical Properties

<i>Form:</i>	<i>liquid</i>
<i>Color:</i>	<i>colorless</i>
<i>Odor:</i>	<i>weak</i>
<i>Odor threshold:</i>	<i>No information available.</i>
<i>pH-Value:</i>	<i>7 (200 g/l; 20°C)</i>
<i>Melting temperature:</i>	<i>-61°C</i>
<i>Boiling temperature:</i>	<i>152 - 153°C (DIN 53171)</i>
<i>Flash point:</i>	<i>57.5°C (DIN 51755)</i>
<i>Evaporation rate:</i>	<i>No information available.</i>
<i>Flammability (solid, gas):</i>	<i>not available</i>
<i>Upper explosion limit:</i>	<i>16.0 Vol.-%</i>
<i>Lower explosion limit:</i>	<i>2.2 Vol.-%</i>
<i>Vapor pressure:</i>	<i>3.77 hPa (20°C)</i>
<i>Vapor density:</i>	<i>No information available.</i>
<i>Density:</i>	<i>0.94 g/cm³ (20°C)</i>
<i>Solubility in water:</i>	<i>completely miscible</i>
<i>Coefficient of variation (n-Octanol/Water):</i>	<i>-0,85 logKOW (25°C)</i>
<i>Auto-ignition temperature:</i>	<i>410°C (DIN 51794)</i>
<i>Decomposition temperature:</i>	<i>No data available.</i>
<i>Viscosity, dynamic:</i>	<i>0.86 mPa.s (20°C) 50 mPa.s (< -10°C)</i>
<i>Explosive properties:</i>	<i>Product does not present an explosion hazard.</i>
<i>Oxidizing properties:</i>	<i>not oxidizing</i>

next page: 8

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)

2303000 Dimethylformamide

Page 8

Revised edition: 21.10.2019

Version: 7.0

Printed: 26.10.2020

Bulk density:

not determined

9.2. Further Information

Solubility in solvents:

Viscosity, kinematic:

Burning class:

Solvent content:

Solid content:

Particle size:

Other information:

Molecular weight: 73.09 g/mol

10. Stability and Reactivity

10.1. Reactivity

No decomposition if used according to specifications.

10.2. Chemical Stability

The product is chemically stable.

10.3. Possibility of Hazardous Reactions

Reacts with oxidizing agents, halogenated compounds and alkali metals.

Formation of explosive vapor-air-mixtures is possible.

10.4. Conditions to Avoid

Conditions to avoid:

Avoid contact with heat, sparks and open fire.

Avoid direct sunlight.

Thermal decomposition:

Avoid heat.

10.5. Incompatible Materials

Keep away from strong oxidizing agents, nitrates, sodium.

10.6. Hazardous Decomposition Products

Formaldehyde, dimethylamine.

In case of fire: formation of carbon oxides, nitrogen oxides (NOx)

10.7. Further Information

11. Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

LD50, oral:

3010 mg/kg (rat, m/f; OECD 401)

NOAEL: 238 mg/kg (rat (m/f), oral, 28d; 5 day/week; OECD 407)

LD50, dermal:

Harmful after skin contact.

LC50, inhalation:

Harmful if inhaled.

next page: 9

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)

2303000 Dimethylformamide

Page 9

Revised edition: 21.10.2019

Version: 7.0

Printed: 26.10.2020

Primary effects

Irritant effect on skin:

Non irritating (rabbit)
Has skin-degreasing effects.

Irritant effect on eyes:

Irritating effect (rabbit).

Inhalation:

No information available.

Ingestion:

No information available

Sensitization:

Non sensitizing (guinea pig; OECD 406).

Mutagenicity:

No mutagenic effects observed in animal tests. Tests with bacteria or mammal cell cultures did not show any mutagenic effects.

Reproductive toxicity:

Animal studies showed no adverse effect on the fertility.

Carcinogenicity:

No cancerogenic effect (in animal studies).

Teratogenicity:

Animal studies showed teratogenic effects.

Specific target organ toxicity (STOT):

Single exposure: no information available.
Repeated exposure: repeated exposure can cause liver damage.

Additional toxicological information:

Risk of skin absorption.
Eye contact: irritating.
Gastrointestinal disorders.
Aspiration hazard: no data available

12. Ecological Information

12.1. Aquatic Toxicity

Fish toxicity:

LC50: 7100 mg/l (96h, *Lepomis macrochirus*)

Daphnia toxicity:

EC50: 13100 mg/l (48h, *Daphnia magna*; OECD 202)
NOEC: 1500 mg/l (21d, *Daphnia magna*)

Bacteria toxicity:

EC50: 12300 - 17500 mg/l (*Vibrio fisheri*; 5 min)

Algae toxicity:

EC50: > 1000 mg/l (72h, *Desmodesmus subspicatus*)

12.2. Persistency and Degradability

No significant hydrolysis.

next page: 10

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)

2303000 Dimethylformamide

Page 10

Revised edition: 21.10.2019

Version: 7.0

Printed: 26.10.2020

100 % (21d); readily biodegradable (OECD 301E)

95 % (7d); readily biodegradable (OECD 302B)

12.3. Bioaccumulation

Bioconcentration factor: 0.3 - 1.2 (*Cyprinus carpio* (carp); 56d; 0.020 mg/l)

Bioaccumulation is not to be expected.

log KOW: -0.85 (25°C)

12.4. Mobility

Does not evaporate from the surface of the water to the atmosphere.

Adsorption to solid soil phase is not expected.

12.5. Results of PBT- und vPvP Assessment

This substance is not classified as PBT (persistent, bioaccumulative, toxic), nor as vPvB (very persistent, very bioaccumulative).

12.6. Other Adverse Effects

Water hazard class:

2 (German Regulation) (Assessment by list): hazardous.

Behaviour in sewage systems:

Further ecological effects:

Do not let product enter waterways or sewage system.

AOX Value:

13. Disposal Considerations

13.1. Waste Treatment Methods

Product:

Must be taken to a special waste incineration plant after consulting with the local authorities and after pre-treatment.

European Waste Code (EWC):

Uncleaned packaging:

Contaminated packaging must be disposed like the substance.

Waste Code No.:

14. Transport Information

14.1. UN Number

ADR, IMDG, IATA

2265

14.2. UN Proper Shipping Name

ADR/RID:

N,N-DIMETHYLFORMAMID

IMDG/IATA:

N,N-DIMETHYLFORMAMIDE

14.3. Transport Hazard Classes

ADR Class:

3

Hazard no.:

3

Classification code:

F1

next page: 11

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)

2303000 Dimethylformamide

Page 11

Revised edition: 21.10.2019

Version: 7.0

Printed: 26.10.2020

	<i>Tunnel restriction code:</i>	<i>D/E</i>
	<i>IMDG Class (sea):</i>	<i>3</i>
	<i>Hazard no.:</i>	<i>3</i>
	<i>EmS No.:</i>	<i>F-E, S-D</i>
	<i>IATA Class:</i>	<i>3</i>
	<i>Hazard no.:</i>	<i>3</i>
14. 4.	Packaging Group	
	<i>ADR/RID:</i>	<i>III</i>
	<i>IMDG:</i>	<i>III</i>
	<i>IATA:</i>	<i>III</i>
14. 5.	Environmental Hazards	
		<i>Labelling according 5.2.1.8 ADR/RID: no</i>
		<i>Labelling according 5.2.1.6.3 IMDG: no</i>
		<i>Classification as environmentally hazardous according 2.9.3</i>
		<i>IMDG: no</i>
		<i>Labelled with "P" according 2.10 IMDG: no</i>
14. 6.	Special Precautions for User	
		<i>not applicable</i>
14. 7.	Transportation in Bulk according to Annex II of MARPOL 73/78 and IBC-Code	
		<i>IMDG: not applicable</i>
14. 8.	Further Information	

15. Regulatory Information

15. 1. Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

Water hazard class:

2, hazardous for water (according to the German Regulation AwSV)

Local regulations on chemical accidents:

Underlies the Accident Ordinance P5c (This applies for normal storage conditions. For storage conditions under pressure or high temperatures, please follow P5a and P5b).

Seveso-III Directive (2012/18/EU):

Flammable liquids (P5c): Amount 1: 5000 t; Amount 2: 50000 t

Employment restrictions:

The employment restrictions for expectant and nursing mothers are to be observed (§§11 and 12 MuSchRiv).

The employment restrictions for young workers in accordance with the Youth Employment Protection Law (§ 22 JArbSchG) are to be observed.

Restriction and prohibition of application:

EC. REACH, Section XVII, Restrictions on the Manufacture, Placing on the Market and Use of Certain Dangerous Substances, Preparations and Articles, Registered no. 30, 3, 40

EU. REACH, Section XVII, App. 6, Reg. No. 30: 200-679-5;

next page: 12

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)

2303000 Dimethylformamide

Page 12

Revised edition: 21.10.2019

Version: 7.0

Printed: 26.10.2020

Reproduction Toxicity, Category 1B

Restricted to professional users!

Technical instructions on air quality:

15.2. Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this product.

15.3. Further Information

EINECS (200-679-5), TSCA, AICS (AUS), DSL, INV (CA), ENCS/DCS/JEX/ISHL (JP)(2)-680, KECI (KR) KE-11411, PICCS (PH), NZ CLSC

EC. REACH, Annex XIV, Candidate List of Substances of very High Concern (SVHC): Reproduction toxicity; Decision Number: ED/169/2012

EU. Cosmetics Directive, Annex II: Reference Number: 743, 355; Registered

Regulation (EC) 649/2012 concerning the export and import of dangerous chemicals: Not applicable

16. Other Information

This product should be stored, handled and used in accordance with good hygiene practices and in conformity with any legal regulations. This information contained herein is based on the present state of knowledge and is intended to describe our product from the point of view of safety requirements. It should be therefore not be construed as guaranteeing specific properties.