

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

Revision Date: 24-oct-2012

Version No.: 3

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name/designation	N,N-Dimethylformamide
Product No.	0464 (Amresco)
Substance name	N,N-Dimethylformamide
CAS No.	68-12-2
INDEX no.	616-001-00-X
REACH registration No.	Not yet communicated down the supply chain.
other means of identification	DMF Formic acid dimethylamide Formdimethylamide

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

Relevant identified uses for laboratory use and chemical production.

1.3 Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor)

VWR International Ltd.

Street	Hunter Boulevard, Magna Park
Postal code/city	Lutterworth, LE17 4XN
country	United Kingdom
Telephone	0800 22 33 44
Telefax	01455 55 85 86
E-mail (competent person)	vwsds@eu.vwr.com

1.4 Emergency telephone

Telephone +44 (0) 1270 502894

2. Hazards identification

2.1 Classification of the substance or mixture

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

hazard classes and hazard categories	Hazard Statements	classification procedure	remark
Reproductive toxicity, category 1B	H360D		
Acute toxicity, category 4, dermal	H312		

Acute toxicity, category 4, inhalation	H332		
Eye irritation, category 2	H319		

2.1.2 Classification according to Directive 67/548/EEC or 1999/45/EC

Hazard symbols:	R-phrases
T	R61
Xn	R20/21
Xi	R36

2.2 Label elements

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



Signal word

Danger

Hazard Statements

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

Precautionary statements

P201	Obtain special instructions before use.
P281	Use personal protective equipment as required.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
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, if present and easy to do. Continue rinsing.
P309+P311	IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.

2.2.2 Labelling (67/548/EEC or 1999/45/EC)

Hazard symbols:

T

R-phrases

R61	May cause harm to the unborn child.
R20/21	Harmful by inhalation and in contact with skin.
R36	Irritating to eyes.

S-phrases

S53	Avoid exposure - obtain special instructions before use.
S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3 Other hazards

SVHC

No

3. Composition/ Information on ingredients

Molecular formula	C3H7NO
Molecular weight (g/mol)	73.1 g/mol
CAS No.	68-12-2
EC No	200-679-5
INDEX no.	616-001-00-X

4. First-aid measures

4.1 General information

IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician. If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

4.2 After inhalation

Call a POISON CENTER or doctor/physician. Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

4.3 In case of skin contact

After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. In case of skin reactions, consult a physician.

4.4 After eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

4.5 After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Do not induce vomiting. Give nothing to eat or drink.

4.6 Self-protection of the first aider

First aider: Pay attention to self-protection!

4.7 Information to physician:

Symptoms	No data available
Hazards	No data available
Treatment	No data available

5. Firefighting measures

5.1 Suitable extinguishing media

The product itself does not burn. Co-ordinate fire-fighting measures to the fire surroundings.

5.2 Extinguishing media which must not be used for safety reasons:

no restriction

5.3 Special hazards arising from the substance or mixture

In case of fire may be liberated: Carbon dioxide (CO₂) Carbon monoxide Nitrogen oxides (NO_x) Sulphur oxides

5.4 Advice for firefighters

DO NOT fight fire when fire reaches explosives. In case of fire: Wear self-contained breathing apparatus.

5.5 Additional information

Do not allow run-off from fire-fighting to enter drains or water courses. Do not inhale explosion and combustion gases. Use caution when applying carbon dioxide in confined spaces. Carbon dioxide can displace oxygen. Use water spray jet to protect personnel and to cool endangered containers.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid generation of dust. Do not breathe dust/fume/gas/mist/vapours/spray. Provide adequate ventilation. Avoid contact with skin, eyes and clothes.

6.2 Environmental precautions

Do not allow to enter into surface water or drains.

6.3 Methods and material for containment and cleaning up

Spilled product must never be returned to the original container for recycling. Clean contaminated objects and areas thoroughly observing environmental regulations. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Collect in closed and suitable containers for disposal.

6.4 Additional information

Clear spills immediately.

7. Handling and storage

7.1 Precautions for safe handling

Avoid: Inhalation. Avoid contact with skin and eyes. Use extractor hood (laboratory). If handled uncovered, arrangements with local exhaust ventilation have to be used. If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means. Protect from moisture.

7.2 Conditions for safe storage, including any incompatibilities

storage temperature

15-25°C

Keep container tightly closed in a cool, well-ventilated place. Store in a place accessible by authorized persons only.

7.3 Specific end use(s)

No data available

8. Exposure controls / Personal protection

8.1 Control parameters

Ingredient (Designation)	Limit value type (country of origin):	Limit value	Regulatory information
N,N-Dimethylformamide	TWA (EU)	5 ppm, 15 mg/m ³	2009/161/EC
N,N-Dimethylformamide	STEL (EU)	10 ppm, 30 mg/m ³	2009/161/EC

8.2 Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

8.3 Personal protective equipment

Wear suitable protective clothing. When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn.

8.3.1 Eye / face protection

Eye glasses with side protection DIN-/EN-Norms: DIN EN 166

8.3.2 Skin protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. Recommended glove articles DIN-/EN-Norms: DIN EN 374 In the case of wanting to use the gloves again, clean them before taking off and air them well.

By short-term hand contact

Suitable material:

NBR (Nitrile rubber)

Thickness of the glove material

0,425 mm

Breakthrough time (maximum wearing time)

19 min

Recommended glove articles

VWR 112-0971

By long-term hand contact

Suitable material:	PE (polyethylene)
Thickness of the glove material	-
Breakthrough time (maximum wearing time)	>480 min
Recommended glove articles	VWR 112-1009

8.3.3 Protective clothing

Wash hands before breaks and after work. Avoid contact with skin and eyes. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

8.3.4 Respiratory protection

Respiratory protection necessary at: aerosol or mist formation

Suitable respiratory protection apparatus:	Full-/half-/quarter-face masks (DIN EN 136/140)
Recommendation	VWR 111-0206
Suitable material:	A2B2E2K2P3
Recommendation	VWR 111-0059

8.4 Additional information

Wash hands before breaks and after work. Avoid contact with skin and eyes. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

(a) Appearance	
Physical state	liquid
Colour	colourless
(b) Odour	No data available
(c) Odour threshold	No data available

Safety relevant basic data

(d) pH	No data available
(e) Melting point/freezing point	-61°C
(f) Initial boiling point and boiling range	153°C (1013 hPa)
(g) Flash point	59°C
(h) Evaporation rate	No data available
(i) Flammability (solid, gas)	not applicable
(j) Upper/lower flammability or explosive limits	
Lower explosion limit (Vol-%)	2.2
Upper explosion limit (Vol-%)	16
(k) Vapour pressure	3,7 mmHg (25°C)
(l) Vapour density	2.51 (20°C)
(m) Relative density	0.949 g/cm³ (20°C)
(n) Solubility(ies)	
Water solubility (g/l)	soluble
at °C:	20
Soluble (g/l) in	No data available
(o) Partition coefficient: n-octanol/water	-1.01 (20°C)

(p) Auto-ignition temperature	410°C
(q) Decomposition temperature	No data available
(r) Viscosity	
Kinematic viscosity	No data available
Dynamic viscosity	0.82 mPa*s (20°C)
(s) Explosive properties	not applicable
(t) Oxidising properties	not applicable

9.2 Other information

Bulk density	No data available
refraction index	1.42803 (589 nm, 20°C)
dissociation constant	No data available
Surface tension	No data available
Henry constant	No data available

10. Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

No data available

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

No data available

10.7 Additional information

No data available

11. Toxicological information

11.1 Information on toxicological effects

Acute effects

Acute oral toxicity	
Effective dose	LD50: 2800 mg/kg
species:	rat
Exposure time	
remark	
source	RTECS
Acute dermal toxicity	
Effective dose	LD50: 1500 mg/kg
species:	rabbit
Exposure time	
remark	
source	IUCLID
Acute inhalation toxicity	
Effective dose	No data available
species:	No data available
Exposure time	
remark	
source	

Irritant and corrosive effects

Primary irritation to the skin
Exposure time
species:
Result

Irritation to eyes
Exposure time
species:
Result

Irritation to respiratory tract
Exposure time
species:
Result

Sensitisation

In case of skin contact	not sensitising.
After inhalation	not sensitising.

Specific target organ toxicity (single exposure)

not relevant

Specific target organ toxicity (repeated exposure)

not relevant

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Carcinogenicity

No indication of human carcinogenicity.

Germ cell mutagenicity/Genotoxicity

No indications of human germ cell mutagenicity exist.

Reproductive toxicity

May damage the unborn child.

Aspiration hazard

not relevant

11.2 Other adverse effects

No data available

11.3 Additional information

No data available

12. Ecological information

12.1 Ecotoxicity

Acute (short-term) fish toxicity

LC50: No data available
EC50
species:
Exposure time

Chronic (long-term) fish toxicity

LC50: No data available
EC50
species:
Exposure time

Acute (short-term) daphnia toxicity

LC50: No data available
EC50
species:
Exposure time

Chronic (long-term) daphnia toxicity

LC50: No data available

EC50
species:
Exposure time

Acute (short-term) algae toxicity

LC50: No data available
EC50
species:
Exposure time

Chronic (long-term) algae toxicity

LC50: No data available
EC50
species:
Exposure time

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

(o) Partition coefficient: n-octanol/water -1.01 (20°C)

12.4 Mobility in soil

No data available

12.5 Results of PBT assessment

No data available

12.6 Other adverse effects

No data available

13. Disposal considerations

13.1 Waste treatment methods

Appropriate disposal / Product

Dispose according to legislation. Consult the appropriate local waste disposal expert about waste disposal.

Waste code product 16 05 08 (discarded organic chemicals consisting of or containing dangerous substances)

Appropriate disposal / Package

13.2 Additional information

No data available

14. Transport information

14.1 Land transport (ADR/RID)

UN-No.	2265
Proper Shipping Name	N,N-DIMETHYL-FORMAMIDE
Class(es)	3
Classification code:	F1
Packing group	III
Hazard label(s)	3

14.2 Sea transport (IMDG)

UN-No.	2265
Proper Shipping Name	N,N-DIMETHYL-FORMAMIDE
Class(es)	3
Classification code:	F1
Packing group	III
Marine pollutant	
Segregation group	

14.3 Air transport (ICAO-TI / IATA-DGR)

UN-No.	2265
Proper Shipping Name	N,N-DIMETHYL-FORMAMIDE
Class(es)	3
Classification code:	F1
Packing group	III

14.4 Additional information

No data available

15. Regulatory information

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

Water hazard class (WGK)	1
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15.2 Chemical Safety Assessment

No data available

16. Other information

16.1 Relevant R-, H- and EUH-phrases (Number and full text)

R61	May cause harm to the unborn child.
R20/21	Harmful by inhalation and in contact with skin.
R36	Irritating to eyes.

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

16.2 Additional information

Indication of changes

general update

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.