

Information about Compilation of Safety Data Sheets

Product: SureLINK™ Fluorescein-X (FAM-X) Labeling Kit
Company: SeraCare Life Sciences
Article number: 5610-0021

All components of the aforementioned kit had been classified according to Regulation (EC) No. 1907/2006 (REACH) and to Regulation (EC) No. 1272/2008 (GHS/CLP).

For all kit components, SureLINK™ FAM-X (article numbers: 82-02-00, 82-02-01), Borate Buffer (1X) (article number 82-02-02), and Anhydrous DMF (article number 82-01-03), Safety Data Sheets had been compiled (enclosure).

When handling the kit components, the general and specific safety precautions for laboratories and the corresponding directives have to be followed.

Date of issue: February 2018

medac

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**Safety data sheet
according to 1907/2006/EC, Article 31**

Printing date 13.02.2018

Version number 2

Revision: 13.02.2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier****Trade name:** SureLINK™ FAM-X**Article number:** 82-02-01, 82-02-00**CAS Number:**

148356-00-7

EINECS Number:

N/A

Registration number

A registration number is not available for this substance as the substance or its use are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Relevant identified uses:

RUO (Research Use Only).

Uses advised against:

For in vitro diagnosis.

Sector of Use SU24 Scientific research and development**Product category** PC21 Laboratory chemicals**Process category** PROC15 Use as laboratory reagent**1.3 Details of the supplier of the safety data sheet****Manufacturer/Distributor:**

Manufacturer:

SeraCare Life Sciences (KPL)

910 Clopper Road

Gaithersburgh, Maryland 20878, USA

Distributor:

medac GmbH

Theaterstrasse 6

22880 Wedel, Germany

phone: +49 4103 8006-0

Informing department:

Product Safety

productsafety@medac.de

1.4 Emergency telephone number:

Giftinformationszentrum-Nord, Phone: ++49 551 19 240 (service in German and English, 24 hours permanently accessible).

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

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

The substance is classified and labelled according to the CLP regulation.

Hazard pictograms

GHS07

Signal word Warning

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Hazard-determining components of labelling:

6-(fluorescein-5-carboxamido)hexanoic acid, succinimidyl ester (5-SFX) *single isomer*

Hazard statements

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Precautionary statements

P280 Wear protective gloves / protective clothing / eye protection

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.

Additional information:

Labelling information:

Due to its small quantity the product is not subject to the labelling and packaging requirements of Art. 17 (please refer to Annex I, Number 1.5.2, Regulation (EC) No 1272/2008 (CLP)).

2.3 Other hazards Void.**Results of PBT and vPvB assessment****PBT:** Substance(s) does/do not meet the criteria for PBT according to Regulation (EC) No 1907/2006, Annex XIII.**vPvB:** Substance(s) does/do not meet the criteria for vPvB according to Regulation (EC) No 1907/2006, Annex XIII.**SECTION 3: Composition/information on ingredients****CAS No. Designation:**

148356-00-7 6-(fluorescein-5-carboxamido)hexanoic acid, succinimidyl ester (5-SFX) *single isomer*

Identification number(s):**EC number:** N/A**SVHC** Not applicable.**SECTION 4: First aid measures****4.1 Description of first aid measures****General information** First aider: Take care of self-protection.**After inhalation**

Supply fresh air.

In case of symptoms call a physician.

After skin contact

Remove contaminated clothes.

Instantly clean with much water and soap.

In case of symptoms call a physician.

After eye contact

Rinse eyes cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

Consult ophthalmologist.

After swallowing

Let rinse out mouth and then drink plenty of water.

In case of symptoms call a physician.

4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.**Information for doctor**

Show Safety Data Sheet.

Treatment according to symptoms.

Danger No further relevant information available.

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4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing agents** Product itself does not burn. Use fire fighting measures that suit the environment.**For safety reasons unsuitable extinguishing agents**

For this substance no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

For these small quantities no further relevant information available.

5.3 Advice for firefighters**Protective equipment:**

In case of burning of a larger amount:

Stay in the danger area only with self-contained breathing apparatus.

Prevent skin and eye contact by keeping a safe distance or by wearing suitable protective clothing.

Additional information

Collect contaminated fire fighting water separately. It must not enter drains.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel:

Avoid substance contact with skin and eyes.

Provide sufficient ventilation.

Advice for emergency responders: Protective equipment: see Section 8.

6.2 Environmental precautions: Do not empty into drains.**6.3 Methods and material for containment and cleaning up:**

Collect carefully.

Afterwards clean with water and cleansing agent.

Dispose of the material collected according to respective national regulations.

Ensure adequate ventilation.

6.4 Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Keep containers tightly sealed.

Open and handle container with care.

Information about protection against explosions and fires: No special measures required if handled correctly.**7.2 Conditions for safe storage, including any incompatibilities****Storage****Requirements to be met by storerooms and containers:**

Store container tightly closed.

Store dry.

Protected from light.

Store at -20 °C.

Information about storage in one common storage facility: Because of the small quantities not required.**Further information about storage conditions:** This product is hygroscopic.

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Storage class

Storage class 13 according to the German "Technical Rules for Hazardous Substances (TRGS) 510": Non-combustible solid substances.

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****Additional information about design of technical systems:** No further data; see Section 7.**8.1 Control parameters****Components with critical values that require monitoring at the workplace:****DNELs** No further relevant information available.**PNECs** No further relevant information available.**Additional information:** The official lists that were valid during the compilation were used as basis.**8.2 Exposure controls**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See Section 7.

Personal protective equipment**General protective and hygienic measures**

The usual precautionary measures should be adhered to in handling the chemicals.

Avoid contact with the eyes and skin.

Remove contaminated clothing immediately.

Do not eat or drink while working.

Keep away from food and beverages.

Wash hands during breaks and at the end of the work.

Breathing equipment: No special precautions are necessary if handled correctly.**Protection of hands:**

Protective gloves (AQL 1.5).

The breakthrough times stated below base on laboratory test methods which cannot fully simulate working conditions. It is the responsibility of the enduser to choose the appropriate gloves for his application. If working with substances or mixtures harmful in contact with skin, check the gloves beforehand for holes and fissures.

Material of gloves

Natural rubber, NR

Nitrile rubber, NBR

Thickness 0.11 mm.

Product quality must comply with standard EN 374.

Penetration time of glove material Penetration time > 120 min.**For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**

Product has not been designed for permanent contact.

For the permanent contact gloves made of the following materials are suitable:

Product has not been designed for permanent contact.

For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:

Product has not been designed for permanent contact.

As protection from splashes gloves made of the following materials are suitable:

Natural rubber, NR

Nitrile rubber, NBR

Thickness: 0.11 mm.

Eye protection: Safety glasses (standard EN 166).**Body protection:** Protective work clothing.**Limitation and supervision of exposure into the environment** Do not empty into drains.**Risk management measures** Void.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form:	Solid
Colour:	orange yellow
Smell:	No information available.
Odour threshold:	No information available.

pH-value: Not applicable.

Change in condition

Melting point/freezing point:	130-135 °C
Initial boiling point and boiling range:	Not applicable.

Flash point:	No information available.
Inflammability (solid, gaseous)	No information available.
Ignition temperature:	No information available.
Decomposition temperature:	No information available.
Self-inflammability:	No information available.
Explosive properties:	No further relevant information available.
Critical values for explosion:	
Lower:	Not applicable. No relevant information available.
Upper:	Not applicable. No relevant information available.
Oxidising properties	No information available.
Steam pressure:	No information available.
Density	No information available.
Relative density	No information available.
Vapour density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water:	Soluble
Partition coefficient: n-octanol/water:	No information available.
Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
Organic solvents:	0.0 %
Solids content:	100.0 %

9.2 Other information No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity No further relevant information available.

10.2 Chemical stability The product is chemically stable under the indicated storage conditions.

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

10.3 Possibility of hazardous reactions No relevant information available.

10.4 Conditions to avoid:

Warming.
Moisture.
Exposure to light.

10.5 Incompatible materials: No further relevant information available.

10.6 Hazardous decomposition products: In case of burning of larger amounts: See Section 5.

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Additional information: No further relevant information available.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met.

Specific symptoms in biological assay: No further relevant information available.

Primary irritant effect:

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/irritation

Causes serious eye irritation.

after swallowing: Mucosal irritations in mouth, pharynx and oesophagus possible.

after inhalation: Irritations possible.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

Other information (about experimental toxicology): No further relevant information available.

Subacute to chronic toxicity: No further relevant information available.

Additional toxicological information: No further relevant information available.

Toxicokinetics, metabolism and distribution No relevant information available.

Acute effects (acute toxicity, irritation and corrosivity) No acute toxicity information available for this product.

Sensitisation No sensitising effect known.

Repeated dose toxicity No further relevant information available.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction) No relevant information available.

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity Based on available data, the classification criteria are not met.

Reproductive toxicity Based on available data, the classification criteria are not met.

STOT-single exposure

May cause respiratory irritation.

STOT-repeated exposure Based on available data, the classification criteria are not met.

Aspiration hazard Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1 Toxicity No information available.

Aquatic toxicity: No relevant information available.

12.2 Persistence and degradability No relevant information available.

Other information: No further relevant information available.

Behaviour in environmental systems:

Components: No relevant information available.

12.3 Bioaccumulative potential No relevant information available.

12.4 Mobility in soil No relevant information available.

Ecotoxicological effects:

Remark: No further relevant information available.

Additional ecological information:

General notes:

Void.

Do not let enter drains.

12.5 Results of PBT and vPvB assessment

PBT: PBT assessment not available as chemical safety assessment not required/not conducted.

vPvB: vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects No relevant information available.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product residues have to be disposed of according to the Waste Framework Directive as well as national and regional regulations in each of the latest versions.

Uncleaned packagings:

Recommendation: Uncleaned packagings have to be disposed of in the same manner as the product residues.

SECTION 14: Transport information

14.1 UN-Number
ADR, ADN, IMDG, IATA

-

14.2 UN proper shipping name
ADR, ADN, IMDG, IATA

-

14.3 Transport hazard class(es)

 ADR, ADN, IMDG, IATA
Class

-

14.4 Packing group
ADR, IMDG, IATA

-

14.5 Environmental hazards:
Marine pollutant:

No

14.6 Special precautions for user

Not applicable.

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

Not applicable.

Transport/Additional information:

Not classified as dangerous in the meaning of transport regulations as issued in the latest version.
The transport regulations are cited according to international regulations and in the form applicable in Germany (GGVSE). Possible national deviations in other countries are not considered.

UN "Model Regulation":

-

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Labelling according to Regulation (EC) No 1272/2008 See Section 2.

Directive 2012/18/EU
Named dangerous substances - ANNEX I Substance is not listed.

National regulations
Information about limitation of use:

Take note of the directive on the protection of young people at work in the latest version.

Take note of the directive on the safety and health at work for pregnant and breast feeding mothers and workers of childbearing age in the latest version.

Water hazard class: Void.

15.2 Chemical safety assessment: A chemical safety assessment has not been carried out.

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SECTION 16: Other information

All information and recommendations are believed to be correct as of the date of this Safety Data Sheet but shall not be taken to be all inclusive and shall be used only as a guide. All chemicals and preparations may present unknown hazards and should be used with caution. medac shall not be held liable for any damage resulting from handling or from contact with the above product.

Department issuing data specification sheet: Product Safety

Contact: productsafety@medac.de

Replaces version from: 25.04.2014

Reason for alteration:

Update of the classification.

Change of manufacturer's address and of article number(s).

Change of contact address.

General editorial revision.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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**Safety data sheet
according to 1907/2006/EC, Article 31**

Printing date 09.02.2018

Version number 1

Revision: 25.01.2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier****Trade name:** Borate Buffer (1X)**Article number:** 82-02-02**Registration number**

This product is a mixture (see chapter 3). Registration number(s) is/are not available for this substance/these substances as the substance(s) or its/their use are exempted from registration according to Article 2 REACH Regulation (EC) No. 1907/2006, the annual tonnage does not require registration or the registration is envisaged for a later registration deadline.

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

Relevant identified uses:

RUO (Research Use Only).

Uses advised against:

For in vitro diagnosis.

Sector of Use SU24 Scientific research and development**Product category** PC21 Laboratory chemicals**Process category** PROC15 Use as laboratory reagent**1.3 Details of the supplier of the safety data sheet****Manufacturer/Distributor:**

Manufacturer:

SeraCare Life Sciences (KPL)

910 Clopper Road

Gaithersburgh, Maryland 20878, USA

Distributor:

medac GmbH

Theaterstrasse 6

22880 Wedel, Germany

phone: +49 4103 8006-0

Informing department:

Product Safety

productsafety@medac.de

1.4 Emergency telephone number:

Giftinformationszentrum-Nord, Phone: ++49 551 19 240 (service in German and English, 24 hours permanently accessible).

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008** The product is classified according to CLP regulation.**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labeled in accordance with Regulation (EC) No 1272/2008 (GHS/CLP).

Additional information:

Safety data sheet available on request.

Labelling of packages where the contents do not exceed 125 ml Safety Data Sheet available on request.**2.3 Other hazards** Void.**Results of PBT and vPvB assessment****PBT:** Substance(s) does/do not meet the criteria for PBT according to Regulation (EC) No 1907/2006, Annex XIII.**vPvB:** Substance(s) does/do not meet the criteria for vPvB according to Regulation (EC) No 1907/2006, Annex XIII.**SECTION 3: Composition/information on ingredients****3.1. Chemical characterisation: substances** Not applicable. Product is a mixture.

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Safety data sheet according to 1907/2006/EC, Article 31

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Version number 1

Revision: 25.01.2018




Trade name: Borate Buffer (1X)

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3.2 Chemical characterisation: Mixtures

Description: Water based solution

Dangerous components:

CAS: 1303-96-4 EINECS: 215-540-4 Index number: 005-011-01-1 RTECS: VZ 2275000 Reg.nr.: 01-2119490790-32-XXXX	disodium tetraborate decahydrate	 Repr. 1B, H360FD  Eye Irrit. 2, H319	1 - < 2%
CAS: 10043-35-3 EINECS: 233-139-2 Index number: 005-007-00-2 RTECS: ED 4550000 Reg.nr.: 01-2119486683-25-XXXX	boric acid	 Repr. 1B, H360FD	1.2%

SVHC

1303-96-4	disodium tetraborate decahydrate
10043-35-3	boric acid

Additional information For the wording of the listed H-phrases please refer to Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information First aider: Take care of self-protection.

After inhalation

Supply fresh air.

Seek medical treatment in case of complaints.

After skin contact

Remove contaminated clothes.

Wash with copious amounts of water.

In case of symptoms call a physician.

After eye contact

Rinse eyes cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

In case of onset of symptoms consult doctor.

After swallowing

Let rinse out mouth and then drink plenty of water.

In case of disorders consult doctor.

4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.

Information for doctor

Show Safety Data Sheet.

Treatment according to symptoms.

Danger No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents Product itself does not burn. Use fire fighting measures that suit the environment.

For safety reasons unsuitable extinguishing agents For this mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture No further relevant information available.

5.3 Advice for firefighters

Protective equipment:

In case of burning of a larger amount:

Stay in the danger area only with self-contained breathing apparatus.

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Prevent skin and eye contact by keeping a safe distance or by wearing suitable protective clothing.

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Additional information

Collect contaminated fire fighting water separately. It must not enter drains.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel:

Avoid reagent contact with eyes and skin.

Provide sufficient ventilation.

Advice for emergency responders: Protective equipment: see Section 8.

6.2 Environmental precautions: Do not empty into drains.**6.3 Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Afterwards clean with water and cleansing agent.

Dispose of the material collected according to respective national regulations.

6.4 Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling No special precautions necessary if handled correctly.**Information about protection against explosions and fires:** No special measures required.**7.2 Conditions for safe storage, including any incompatibilities** No further relevant information available.**Storage****Requirements to be met by storerooms and containers:** Store at +2 °C to +8 °C.**Information about storage in one common storage facility:** Not required.**Further information about storage conditions:** The indications are valid for the whole package.**Storage class** 10-13 (VC).**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

Additional information about design of technical systems: No further data; see Section 7.**8.1 Control parameters****Components with critical values that require monitoring at the workplace:****DNELs** No further relevant information available.**PNECs** No further relevant information available.**Ingredients with biological limit values:** Void.

CAS No.	Designation of material	%	Type	Value	Unit
No data available.					

Additional Occupational Exposure Limit Values for possible hazards during processing: Not applicable.**Additional information:** The official lists that were valid during the compilation were used as basis.**8.2 Exposure controls**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See Section 7.

Personal protective equipment**General protective and hygienic measures**

The usual precautionary measures should be adhered to in handling the chemicals.

Avoid contact with the eyes and skin.

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Trade name: Borate Buffer (1X)

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Remove contaminated clothing immediately.

Keep away from food and beverages.

Do not eat or drink while working.

Wash hands during breaks and at the end of the work.

Breathing equipment: Not required.

Protection of hands: Disposable medical gloves (AQL 1.5).

Material of gloves

Natural rubber, NR

Nitrile rubber, NBR

Thickness 0.11 mm.

The product quality has to comply with DIN EN 455.

Penetration time of glove material Penetration time > 120 min.

For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:

Product has not been designed for permanent contact.

For the permanent contact gloves made of the following materials are suitable:

Product has not been designed for permanent contact.

For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:

Product has not been designed for permanent contact.

As protection from splashes gloves made of the following materials are suitable:

Natural rubber, NR

Nitrile rubber, NBR

Thickness: 0.11 mm.

Eye protection: Safety glasses (standard EN 166).

Body protection: Protective work clothing.

Limitation and supervision of exposure into the environment Do not empty into drains.

Risk management measures Void.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information
Appearance:

Form:	liquid
Colour:	colourless
Smell:	Odourless
Odour threshold:	Not determined.

pH-value at 20 °C: 8.2-8.6

Change in condition

Melting point/freezing point:	Ca. 0°C
Initial boiling point and boiling range:	ca. 100 °C

Flash point:	Not applicable.
Inflammability (solid, gaseous)	Not applicable.
Ignition temperature:	Not available.
Decomposition temperature:	No information available.
Self-inflammability:	Not self-inflammable.
Explosive properties:	Not explosive.
Critical values for explosion:	
Lower:	Not applicable.
Upper:	Not applicable.
Oxidising properties	No information available.
Steam pressure at 20 °C:	23 hPa
Density at 20 °C	1.0126 g/cm ³
Relative density	No information available.
Vapour density	No information available.
Evaporation rate	No information available.

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Solubility in / Miscibility with

Water:	Fully miscible.
Partition coefficient: n-octanol/water:	No information available.
Viscosity:	
dynamic at 20 °C:	0.952 mPas
kinematic:	No information available.
Solvent content:	
Organic solvents:	0 %
Water:	96.8 %
Solids content:	< 3.2 %

9.2 Other information No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity For this mixture no relevant information available.

10.2 Chemical stability The product is chemically stable under the indicated storage conditions.

Thermal decomposition / conditions to be avoided: No decomposition if used and stored according to specifications.

10.3 Possibility of hazardous reactions No dangerous reactions known.

10.4 Conditions to avoid: No further relevant information available.

10.5 Incompatible materials: For these concentrations no further relevant information available.

10.6 Hazardous decomposition products:

For this/these concentration/s no dangerous products of decomposition known.

Additional information: No further relevant information available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met.

LD/LC50 values that are relevant for classification:**1303-96-4 disodium tetraborate decahydrate**

Oral	LD ₅₀	>2,500 mg/kg (rat)
Dermal	LD ₅₀	>2,000 mg/kg (rabbit)

10043-35-3 boric acid

Oral	LD ₅₀	2,660 mg/kg (rat)
Dermal	LD ₅₀	>2,000 mg/kg (rabbit)

Specific symptoms in biological assay: No further relevant information available.

Primary irritant effect:

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Serious eye damage/irritation Based on available data, the classification criteria are not met.

after swallowing: Slight mucosal irritations in mouth, pharynx and oesophagus possible.

after inhalation: Slight irritations possible.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

Other information (about experimental toxicology): No further relevant information available.

Subacute to chronic toxicity: No further relevant information available.

Additional toxicological information: No further relevant information available.

Toxicokinetics, metabolism and distribution No relevant information available.

Acute effects (acute toxicity, irritation and corrosivity) No acute toxicity information available for this product.

Sensitisation No sensitising effect known.

Repeated dose toxicity No further relevant information available.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Germ cell mutagenicity Based on available data, the classification criteria are not met.

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Carcinogenicity Based on available data, the classification criteria are not met.
Reproductive toxicity Based on available data, the classification criteria are not met.
STOT-single exposure Based on available data, the classification criteria are not met.
STOT-repeated exposure Based on available data, the classification criteria are not met.
Aspiration hazard Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

1303-96-4 disodium tetraborate decahydrate

Oral	EC50/48 h	1,085-1,402 mg/l (Daphnia magna)
------	-----------	----------------------------------

10043-35-3 boric acid

Oral	EC50/48 h	133 mg/l (Daphnia magna)
------	-----------	--------------------------

12.2 Persistence and degradability No further relevant information available.

Other information: No further relevant information available.

Behaviour in environmental systems:

Components: No relevant information available.

12.3 Bioaccumulative potential No relevant information available.

12.4 Mobility in soil No relevant information available.

Ecotoxicological effects:

Remark: No further relevant information available.

Additional ecological information:

General notes:

Void.

Do not let enter drains.

12.5 Results of PBT and vPvB assessment

PBT: PBT assessment not available as chemical safety assessment not required/not conducted.

vPvB: vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects No relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product residues have to be disposed of according to the Waste Framework Directive as well as national and regional regulations in each of the latest versions.

Uncleaned packagings:

Recommendation: Uncleaned packagings have to be disposed of in the same manner as the product residues.

SECTION 14: Transport information

14.1 UN-Number

ADR, ADN, IMDG, IATA

-

14.2 UN proper shipping name

ADR, ADN, IMDG, IATA

-

14.3 Transport hazard class(es)

ADR, ADN, IMDG, IATA

Class

-

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**14.4 Packing group
ADR, IMDG, IATA**

-

14.5 Environmental hazards:

Not applicable.

14.6 Special precautions for user

Not applicable.

**14.7 Transport in bulk according to Annex II of Marpol
and the IBC Code**

Not applicable.

Transport/Additional information:

Not classified as dangerous in the meaning of transport regulations as issued in the latest version.
The transport regulations are cited according to international regulations and in the form applicable in Germany (GGVSE). Possible national deviations in other countries are not considered.

UN "Model Regulation":

-

SECTION 15: Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Labelling according to Regulation (EC) No 1272/2008** See Section 2.

Directive 2012/18/EU
Named dangerous substances - ANNEX I Contains none of the listed substances.

National regulations
Information about limitation of use:

Take note of the directive on the protection of young people at work in the latest version.

Take note of the directive on the safety and health at work for pregnant and breast feeding mothers and workers of childbearing age in the latest version.

Water hazard class: Void.

Other regulations, limitations and prohibitive regulations
Substances of very high concern (SVHC) according to REACH, Article 57

1303-96-4	disodium tetraborate decahydrate
-----------	----------------------------------

10043-35-3	boric acid
------------	------------

15.2 Chemical safety assessment: A chemical safety assessment has not been carried out.

SECTION 16: Other information

All information and recommendations are believed to be correct as of the date of this Safety Data Sheet but shall not be taken to be all inclusive and shall be used only as a guide. All chemicals and preparations may present unknown hazards and should be used with caution. medac shall not be held liable for any damage resulting from handling or from contact with the above product.

Relevant phrases

H319 Causes serious eye irritation.

H360FD May damage fertility. May damage the unborn child.

Department issuing data specification sheet: Product Safety

Contact: productsafety@medac.de

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

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Trade name: Borate Buffer (1X)

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DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Repr. 1B: Reproductive toxicity – Category 1B

GB

**Safety data sheet
according to 1907/2006/EC, Article 31**

Printing date 09.02.2018

Version number 3

Revision: 09.02.2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier****Trade name:** Anhydrous DMF**Article number:** 82-01-03**CAS Number:**

68-12-2

EC number:

200-679-5

Index number:

616-001-00-X

Registration number 01-2119475605-32-XXXX**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses:

RUO (Research Use Only).

Uses advised against:

For in vitro diagnosis.

Sector of Use SU24 Scientific research and development**Product category** PC21 Laboratory chemicals**Process category** PROC15 Use as laboratory reagent**1.3 Details of the supplier of the safety data sheet****Manufacturer/Distributor:**

Manufacturer:

SeraCare Life Sciences (KPL)

910 Clopper Road

Gaithersburgh, Maryland 20878, USA

Distributor:

medac GmbH

Theaterstrasse 6

22880 Wedel, Germany

phone: +49 4103 8006-0

Informing department:

Product Safety

productsafety@medac.de

1.4 Emergency telephone number:

Giftinformationszentrum-Nord, Phone: ++49 551 19 240 (service in German and English, 24 hours permanently accessible).

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Flam. Liq. 3 H226 Flammable liquid and vapour.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Eye Irrit. 2 H319 Causes serious eye irritation.

Repr. 1B H360D May damage the unborn child.

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

The substance is classified and labelled according to the CLP regulation.

Hazard pictograms

GHS02 GHS07 GHS08

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Trade name: Anhydrous DMF

(Contd. of page 1)

Signal word Danger**Hazard-determining components of labelling:**

N,N-dimethylformamide

Hazard statements

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 statements

P201 Obtain special instructions before use.
 P280 Wear protective gloves / protective clothing / eye protection
 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.
 P405 Store locked up.
 Restricted to professional users.

Reduced labelling:

Labelling of packages where the contents do not exceed 125 ml**Hazard pictograms**

GHS02 GHS07 GHS08

Signal word Danger**Hazard-determining components of labelling:**

N,N-dimethylformamide

Hazard statements

Restricted to professional users.
 H360D May damage the unborn child.

Precautionary statements

P201 Obtain special instructions before use.
 P308+P313 IF exposed or concerned: Get medical advice/attention.
 P405 Store locked up.

2.3 Other hazards No further relevant information available.**Results of PBT and vPvB assessment****PBT:** Substance(s) does/do not meet the criteria for PBT according to Regulation (EC) No 1907/2006, Annex XIII.**vPvB:** Substance(s) does/do not meet the criteria for vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

SECTION 3: Composition/information on ingredients

3.1. Chemical characterisation: substances Organic solvent**CAS No. Designation:**

68-12-2 N,N-dimethylformamide

Identification number(s):**EC number:** 200-679-5**Index number:** 616-001-00-X**SVHC**

68-12-2 | N,N-dimethylformamide

SECTION 4: First aid measures

4.1 Description of first aid measures**General information** First aider: Take care of self-protection.

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After inhalation

Supply fresh air.
Consult physician.

After skin contact

Remove contaminated clothes.
Instantly clean with much water and soap.
Call in physician.

After eye contact

Rinse eyes cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
Instantly consult ophthalmologist.

After swallowing

Let rinse out mouth and then drink plenty of water.
Call doctor.

4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.

Information for doctor

Show Safety Data Sheet.
Treatment according to symptoms.

Danger Danger of skin resorption.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

Suitable extinguishing agents Product itself does not burn. Use fire fighting measures that suit the environment.

For safety reasons unsuitable extinguishing agents

For this substance no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Can be released in case of fire:

Carbon monoxide (CO)
Carbon dioxide (CO₂)
Nitrogen oxides (NO_x)

5.3 Advice for firefighters**Protective equipment:**

In case of burning of a larger amount:

Stay in the danger area only with self-contained breathing apparatus.
Prevent skin and eye contact by keeping a safe distance or by wearing suitable protective clothing.

Additional information

Collect contaminated fire fighting water separately. It must not enter drains.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel:

Avoid substance contact with skin and eyes.
Provide sufficient ventilation.

Advice for emergency responders: Protective equipment: see Section 8.

6.2 Environmental precautions: Do not empty into drains.

6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Afterwards clean with water and cleansing agent.

Dispose of the material collected according to respective national regulations.

Ensure adequate ventilation.

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Trade name: Anhydrous DMF

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6.4 Reference to other sections

See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Observe label precautions.
Open and handle container with care.
Prevent contact with skin and eyes.

Information about protection against explosions and fires: No special measures required if handled correctly.

7.2 Conditions for safe storage, including any incompatibilities**Storage****Requirements to be met by storerooms and containers:**

Store container tightly closed.
Store dry.
Store at +2 °C to +8 °C.

Information about storage in one common storage facility: Not required.

Further information about storage conditions:

Store in a locked cabinet or with access restricted to technical experts or their assistants.

Storage class Void.

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

Additional information about design of technical systems: No further data; see Section 7.

8.1 Control parameters**Components with critical values that require monitoring at the workplace:****68-12-2 N,N-dimethylformamide**

WEL	Short-term value: 30 mg/m ³ , 10 ppm
	Long-term value: 15 mg/m ³ , 5 ppm
Sk	

DNELs No further relevant information available.

PNECs No further relevant information available.

CAS No. Designation of material % Type Value Unit

Additional Occupational Exposure Limit Values for possible hazards during processing: Not applicable.

Additional information: The official lists that were valid during the compilation were used as basis.

8.2 Exposure controls

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See Section 7.

Personal protective equipment**General protective and hygienic measures**

The usual precautionary measures should be adhered to in handling the chemicals.
Avoid contact with eyes, skin and garments.
Remove contaminated clothing immediately.
Keep away from food and beverages.
Do not eat or drink while working.
Wash hands during breaks and at the end of the work.

Breathing equipment: No special precautions are necessary if handled correctly.

Protection of hands:

Protective gloves (AQL 1.5).

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The breakthrough times stated below base on laboratory test methods which cannot fully simulate working conditions. It is the responsibility of the enduser to choose the appropriate gloves for his application. If working with substances or mixtures harmful in contact with skin, check the gloves beforehand for holes and fissures.

Material of gloves

Natural rubber, NR
Nitrile rubber, NBR
Thickness 0.11 mm.

Product quality must comply with standard EN 374.

Penetration time of glove material Penetration time > 240 min.

For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:

Product has not been designed for permanent contact.

For the permanent contact gloves made of the following materials are suitable:

Product has not been designed for permanent contact.

For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:

Product has not been designed for permanent contact.

As protection from splashes gloves made of the following materials are suitable:

Natural rubber, NR
Nitrile rubber, NBR
Thickness: 0.11 mm.

Product quality must comply with standard EN 374.

Penetration time > 240 min.

Eye protection: Safety glasses (standard EN 166).

Body protection: Protective work clothing.

Limitation and supervision of exposure into the environment Do not empty into drains.

Risk management measures Void.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form:	liquid
Colour:	colourless
Smell:	Amine-like
Odour threshold:	0.329 ppm

pH-value:	7
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Change in condition

Melting point/freezing point:	-61 °C
Initial boiling point and boiling range:	152.5-153.5 °C

Flash point:	58 °C
Inflammability (solid, gaseous)	Flammable.
Ignition temperature:	410 °C
Decomposition temperature:	> 350 °C
Self-inflammability:	435 °C at 1,013 hPa (method: DIN 51794)
Explosive properties:	Product is not explosive. However, formation of explosive air/steam mixtures is possible.

Critical values for explosion:

Lower:	2.2 Vol %
Upper:	16 Vol %
Oxidising properties	Not oxidizing.
Steam pressure at 20 °C:	3.5 hPa
Density at 20 °C	0.95 g/cm ³
Relative density at 20 °C	0.94 g/cm ³
Vapour density at 20 °C	2.51 g/cm ³
Evaporation rate	No information available.

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Trade name: Anhydrous DMF

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Solubility in / Miscibility with

Water: Fully miscible.
Partition coefficient: n-octanol/water at 25 °C: -0.85 log POW
Viscosity:
dynamic at 20 °C: 0.802 mPa.s
kinematic: No information available.
Organic solvents: 100 %
Water: 0 %
Solids content: 0 %

9.2 Other information No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity No further relevant information available.

10.2 Chemical stability

Therak decomposition / conditions to be avoided: No decomposition if used and stored according to specifications.

10.3 Possibility of hazardous reactions No relevant information available.

10.4 Conditions to avoid: Heating.

10.5 Incompatible materials:

Various plastics (e.g. PVC).
Copper, copper alloys.
Tin.

10.6 Hazardous decomposition products:

In case of burning of larger amounts: See Section 5.

Ammonia
Formaldehyde

Additional information: No further relevant information available.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity**

Harmful in contact with skin or if inhaled.

LD/LC50 values that are relevant for classification:**68-12-2 N,N-dimethylformamide**

Oral	LD ₅₀	2,800 mg/kg (rat)
Dermal	LD ₅₀	1,500 mg/kg (rabbit)
Inhalative	LC ₅₀ /4 h	9-15 mg/l (rat)

Specific symptoms in biological assay: No further relevant information available.

Primary irritant effect:

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Serious eye damage/irritation

Causes serious eye irritation.

after swallowing: Mucosal irritations in mouth, pharynx and oesophagus possible.

after inhalation: Irritations possible.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

Other information (about experimental toxicology):

Specific symptoms in animal experiments:

Test for skin irritation (rabbit): No irritations (IUCLID).

Test for eye irritation (rabbit): Irritations (IUCLID).

Sensitisation test (guinea pig): Negative.

Subacute to chronic toxicity: Hepatopathy.

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Trade name: Anhydrous DMF

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Additional toxicological information: No further relevant information available.**Toxicokinetics, metabolism and distribution** No relevant information available.**Sensitisation** No sensitising effect known.**Repeated dose toxicity** No further relevant information available.**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)****Germ cell mutagenicity** Based on available data, the classification criteria are not met.**Carcinogenicity** Based on available data, the classification criteria are not met.**Reproductive toxicity**

May damage the unborn child.

STOT-single exposure Based on available data, the classification criteria are not met.**STOT-repeated exposure** Based on available data, the classification criteria are not met.**Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1 Toxicity**Aquatic toxicity:** Toxic to aquatic life.**12.2 Persistence and degradability**

Product is easily biodegradable.

Biodegradability

100 %; 21 d; aerobic

OECD test guideline 301E

Other information: No further relevant information available.**Behaviour in environmental systems:****Components:** No relevant information available.**12.3 Bioaccumulative potential**

Due to the distribution coefficient n-octanol/water an accumulation in organisms is not expected.

Distribution coefficient: n-octanol/water

log Pow: -0.85 (25 °C)

OECD Test Guideline 107

Bioconcentration factor (BCF): 0.3 - 1.2

Cyprinus carpio (carp); 56 d

OECD Test Guideline 305C

Does not easily accumulate in organisms.

12.4 Mobility in soil No relevant information available.**Ecotoxicological effects:****Remark:** No further relevant information available.**Additional ecological information:****General notes:**

Do not let enter drains.

Water hazard class 2 (Assessment by list): hazardous for water.

Do not allow product to reach ground water, water bodies or sewage system!

12.5 Results of PBT and vPvB assessment**PBT:** PBT assessment not available as chemical safety assessment not required/not conducted.**vPvB:** vPvB assessment not available as chemical safety assessment not required/not conducted.**12.6 Other adverse effects** No relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product residues have to be disposed of according to the Waste Framework Directive as well as national and regional regulations in each of the latest versions.

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GB

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Trade name: Anhydrous DMF

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Uncleaned packagings:
Recommendation: Uncleaned packagings have to be disposed of in the same manner as the product residues.

SECTION 14: Transport information

**14.1 UN-Number
ADR, IMDG, IATA**

UN2265

**14.2 UN proper shipping name
ADR
IMDG, IATA**

 2265 N,N-DIMETHYLFORMAMIDE, solution
N,N-DIMETHYLFORMAMIDE

14.3 Transport hazard class(es)
ADR

**Class
Label**

 3 (F1) Flammable liquids.
3

IMDG, IATA

**Class
Label**

 3 Flammable liquids.
3

**14.4 Packing group
ADR, IMDG, IATA**

III

14.5 Environmental hazards:

Not applicable.

14.6 Special precautions for user

Warning: Flammable liquids.

Kemler Number:

30

EMS Number:

F-E,S-D

Stowage Category

A

**14.7 Transport in bulk according to Annex II of Marpol
and the IBC Code**

Not applicable.

Transport/Additional information:

The transport regulations are cited according to international regulations and in the form applicable in Germany (GGVSE). Possible national deviations in other countries are not considered.

ADR
Limited quantities (LQ)

5L

Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

Transport category

3

Tunnel restriction code

D/E

IMDG
Limited quantities (LQ)

5L

Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

(Contd. on page 9)

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Version number 3

Revision: 09.02.2018

Trade name: Anhydrous DMF

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UN "Model Regulation":

UN2265, N,N-DIMETHYLFORMAMIDE, solution, 3, III

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Labelling according to Regulation (EC) No 1272/2008 See Section 2.

Directive 2012/18/EU**Named dangerous substances - ANNEX I** Contains none of the listed substances.**Seveso category** FLAMMABLE LIQUIDS**Qualifying quantity (tonnes) for the application of lower-tier requirements**

50 t

5,000 t

Qualifying quantity (tonnes) for the application of upper-tier requirements

200 t

50,000 t

REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 40**National regulations****Information about limitation of use:**

Take note of the directive on the protection of young people at work in the latest version.

Take note of the directive on the safety and health at work for pregnant and breast feeding mothers and workers of childbearing age in the latest version.

Class	Share in %
NK	100.0

Water hazard class: Water hazard class 2 (Assessment by list): hazardous for water.**Other regulations, limitations and prohibitive regulations****Substances of very high concern (SVHC) according to REACH, Article 57**

68-12-2 | N,N-dimethylformamide

15.2 Chemical safety assessment: A chemical safety assessment has not been carried out.

SECTION 16: Other information

All information and recommendations are believed to be correct as of the date of this Safety Data Sheet but shall not be taken to be all inclusive and shall be used only as a guide. All chemicals and preparations may present unknown hazards and should be used with caution. medac shall not be held liable for any damage resulting from handling or from contact with the above product.

Department issuing data specification sheet: Product Safety**Contact:** productsafety@medac.de**Replaces version from:** 01.06.2017**Reason for alteration:**

Change of contact address.

General editorial revision.

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

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Revision: 09.02.2018

Trade name: Anhydrous DMF

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LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Repr. 1B: Reproductive toxicity – Category 1B

GB