

## Information about Compilation of Safety Data Sheets

**Product: PermaGreen™/HRP, Ready To Use 30 ml**  
**Company: Diagnostic BioSystems, Inc.**  
**Article number: K074**

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 the kit components PermaGreen™/HRP Substrate Buffer (Component 2, article number: K 074B) and PermaGreen™/HRP Chromogen (Component 1, article number: K 074C), 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: August 2017

**medac**

Product Safety  
Safety Health Environment  
Phone: +49 (0)4103 8006 0  
Fax: +49 (0)4103 8006 100  
E-mail: productsafety@medac.de

Theaterstrasse 6  
22880 Wedel  
Germany

Attachment

Geschäftsführer:  
Jens Denker  
Dr. Rainer Dickhardt  
Jörg Hans  
Dr. Ulrich Kosciessa  
Nikolaus Graf Stolberg  
Heiner Will

Registergericht:  
Pinneberg HRB 12042 PI

Umsatzsteuer ID:  
DE 118579535

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

Printing date 18.08.2017

Version number 1

Revision: 16.08.2017

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name:** Perma Green™/HRP Component 1**Article number:** K074C Comp1**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:

For in vitro diagnosis.

Uses advised against:

No further relevant information available.

**Sector of Use** SU20 Health services**Product category** PC21 Laboratory chemicals**Process category** PROC15 Use as laboratory reagent**Application of the substance / the mixture** Immunochemical reagent for detection / auxiliary reagent**1.3 Details of the supplier of the safety data sheet****Manufacturer/Distributor:**

Manufacturer:

Diagnostic BioSystems, Inc.

6616 Owens Drive

Pleasanton, CA 94588, USA

phone: 001 925 484-3350

Distributor:

medac GmbH

Theaterstr. 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.

Repr. 1B H360FD May damage fertility. May damage the unborn child.

STOT SE 3 H335 May cause respiratory irritation.

**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).

**Hazard pictograms**

GHS07 GHS08

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

N-methyl-2-pyrrolidone

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**Trade name: Perma Green™/HRP Component 1**

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2-methoxyethanol

**Hazard statements**

H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H360FD May damage fertility. May damage the unborn child.  
 H335 May cause respiratory irritation.

**Precautionary statements**

P201 Obtain special instructions before use.  
 P202 Do not handle until all safety precautions have been read and understood.  
 P280 Wear protective gloves / protective clothing / eye protection  
 P405 Store locked up.

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

GHS07 GHS08

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

N-methyl-2-pyrrolidone  
 2-methoxyethanol

**Hazard statements**

H360FD May damage fertility. May damage the unborn child.

**Precautionary statements**

P201 Obtain special instructions before use.  
 P202 Do not handle until all safety precautions have been read and understood.  
 P280 Wear protective gloves / protective clothing / eye protection  
 P405 Store locked up.

**2.3 Other hazards****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.**3.2 Chemical characterisation: Mixtures****Description:** Immunochemical reagent / auxiliary reagent**Dangerous components:**

CAS: 872-50-4 EINECS: 212-828-1 Index number: 606-021-00-7 RTECS: UY 5790000	N-methyl-2-pyrrolidone ⚠ Repr. 1B, H360D ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	10-20%
CAS: 109-86-4 EINECS: 203-713-7 Index number: 603-011-00-4 RTECS: KL 5775000	2-methoxyethanol ⚠ Flam. Liq. 3, H226 ⚠ Repr. 1B, H360FD ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	5-7%

**SVHC**

872-50-4	N-methyl-2-pyrrolidone
109-86-4	2-methoxyethanol

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

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**Trade name: Perma Green™/HRP Component 1**

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**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; consult doctor in case of symptoms.**After skin contact**

Remove contaminated clothes.

Instantly 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.

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**

To the best of our knowledge both acute and delayed symptoms and effects due to improper handling of this preparation have not been investigated.

**Information for doctor**

Show Safety Data Sheet.

Treatment according to symptoms.

**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**

Formation of toxic gases is possible during heating or in case of fire.

In the event of fire may develop:

Carbon monoxide (CO)

Carbon dioxide (CO<sub>2</sub>)Nitrogen oxides (NO<sub>x</sub>)**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**

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:

Do not inhale vapours/aerosols.

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).

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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** Open and handle container with care.**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 tightly closed.  
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**

Storage class 12 according to the German "Technical Rules for Hazardous Substances (TRGS) 510": Noncombustible liquids.

**7.3 Specific end use(s)** Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

### SECTION 8: Exposure controls/personal protection

**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:****872-50-4 N-methyl-2-pyrrolidone**

WEL	Short-term value: 80 mg/m <sup>3</sup> , 20 ppm
	Long-term value: 40 mg/m <sup>3</sup> , 10 ppm
Sk	

**109-86-4 2-methoxyethanol**

WEL	Long-term value: 3 mg/m <sup>3</sup> , 1 ppm
Sk	

**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.

Do not inhale aerosols.

Avoid contact with the eyes and skin.

Remove contaminated clothing immediately.

Do not eat or drink while working.

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

**Breathing equipment:**

Essential if vapours/aerosols develop.

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Filter A (according to standard EN 3181) for vapours of organic compounds..

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**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**

Nitrile rubber, NBR

Natural rubber, NR

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:**

Nitrile rubber, NBR

Natural rubber, NR

Thickness: 0.11 mm.

Penetration time &gt; 120 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:**

No information available.

**Smell:**

slightly amine-like

**Odour threshold:**

No information available.

**Important information on protection of health and environment, and on safety.**

No further relevant information available.

**pH-value:**

No information available.

**Change in condition**

Not applicable.

**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**

Not applicable.

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<b>Steam pressure:</b>	No information available.
<b>Density</b>	No information available.
<b>Relative density</b>	No information available.
<b>Vapour density</b>	No information available.
<b>Evaporation rate</b>	No information available.
<b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Miscible
<b>Partition coefficient: n-octanol/water:</b>	No information available.
<b>Viscosity:</b>	
<b>dynamic:</b>	No information available.
<b>kinematic:</b>	No information available.
<b>Solvent content:</b>	
<b>Organic solvents:</b>	22.0 %
<b>Water:</b>	75.0 %
<b>Solids content:</b>	0.00 %

**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 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:** No further relevant information available.

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

**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:

##### 872-50-4 N-methyl-2-pyrrolidone

Oral	LD50	3600 mg/kg (rat)
Dermal	LD50	8000 mg/kg (rabbit)

##### 109-86-4 2-methoxyethanol

Oral	LD50	3400 mg/kg (rat)
Dermal	LD50	2000 mg/kg (rabbit)
Inhalative	LC50/4 h	1500 mg/l (rat)

**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.

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

May damage fertility. May damage the unborn child.

**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****Aquatic toxicity:** No further relevant information available.**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** Mobility in soil due to the liquid status.**Additional ecological information:****General notes:** Void.**12.5 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.**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:  
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:**

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.  
THESE TRANSPORT REGULATIONS APPLY TO THE WHOLE PACKAGE!

**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.

**Hazard pictograms** See Section 2.

**Signal word** See Section 2.

**Hazard-determining components of labelling:** See Section 2.

**Hazard statements** See Section 2.

**Precautionary statements** See Section 2.

**Chemical safety assessment** A chemical safety assessment was not carried out.

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

**REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 9d, 30

**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	22.0

**Water hazard class:** Void.

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

Not applicable.

872-50-4	N-methyl-2-pyrrolidone
109-86-4	2-methoxyethanol

**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.

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**Trade name: Perma Green™/HRP Component 1**

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**Relevant phrases**

H226 Flammable liquid and vapour.  
H302 Harmful if swallowed.  
H312 Harmful in contact with skin.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H332 Harmful if inhaled.  
H335 May cause respiratory irritation.  
H360D May damage the unborn child.  
H360FD May damage fertility. May damage the unborn child.

**Department issuing data specification sheet:** Product Safety**Contact:** productsafety@medac.de**Replaces version from:** -**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

ELINCS: European List of Notified 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

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

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

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

Repr. 1B: Reproductive toxicity – Category 1B

Repr. 1B: Reproductive toxicity – Category 1B

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

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name:** Perma Green™/HRP Component 2**Article number:** K074B Comp2**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:

For in vitro diagnosis.

Uses advised against:

No further relevant information available.

**Sector of Use** SU20 Health services**Product category** PC21 Laboratory chemicals**Process category** PROC15 Use as laboratory reagent**Application of the substance / the mixture** Immunochemical reagent for detection / auxiliary reagent**1.3 Details of the supplier of the safety data sheet****Manufacturer/Distributor:**

Manufacturer:

Diagnostic BioSystems, Inc.

6616 Owens Drive

Pleasanton, CA 94588, USA

phone: 001 925 484-3350

Distributor:

medac GmbH

Theaterstr. 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.

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STOT SE 3 H335 May cause respiratory irritation.

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

**Hazard pictograms**

GHS07 GHS08

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

N-methyl-2-pyrrolidone

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GB

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Trade name: Perma Green™/HRP Component 2

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2-methoxyethanol

**Hazard statements**

H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H360FD May damage fertility. May damage the unborn child.  
 H335 May cause respiratory irritation.

**Precautionary statements**

P201 Obtain special instructions before use.  
 P202 Do not handle until all safety precautions have been read and understood.  
 P280 Wear protective gloves / protective clothing / eye protection  
 P405 Store locked up.

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

GHS07 GHS08

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

N-methyl-2-pyrrolidone  
 2-methoxyethanol

**Hazard statements**

H360FD May damage fertility. May damage the unborn child.

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 P202 Do not handle until all safety precautions have been read and understood.  
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### SECTION 3: Composition/information on ingredients

**3.1. Chemical characterisation: substances** Not applicable. Product is a mixture.**3.2 Chemical characterisation: Mixtures****Description:** Immunochemical reagent / auxiliary reagent**Dangerous components:**

CAS: 872-50-4 EINECS: 212-828-1 Index number: 606-021-00-7 RTECS: UY 5790000	N-methyl-2-pyrrolidone ⚠ Repr. 1B, H360D ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	10-20%
CAS: 109-86-4 EINECS: 203-713-7 Index number: 603-011-00-4 RTECS: KL 5775000	2-methoxyethanol ⚠ Flam. Liq. 3, H226 ⚠ Repr. 1B, H360FD ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	5-7%

**SVHC**

872-50-4	N-methyl-2-pyrrolidone
109-86-4	2-methoxyethanol

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

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**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; consult doctor in case of symptoms.**After skin contact**

Remove contaminated clothes.

Instantly 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.

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**

To the best of our knowledge both acute and delayed symptoms and effects due to improper handling of this preparation have not been investigated.

**Information for doctor**

Show Safety Data Sheet.

Treatment according to symptoms.

**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**

Formation of toxic gases is possible during heating or in case of fire.

In the event of fire may develop:

Carbon monoxide (CO)

Carbon dioxide (CO<sub>2</sub>)Nitrogen oxides (NO<sub>x</sub>)**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**

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:

Do not inhale vapours/aerosols.

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).

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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** Open and handle container with care.**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 tightly closed.  
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**

Storage class 12 according to the German "Technical Rules for Hazardous Substances (TRGS) 510": Noncombustible liquids.

**7.3 Specific end use(s)** Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

### SECTION 8: Exposure controls/personal protection

**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:****872-50-4 N-methyl-2-pyrrolidone**

WEL	Short-term value: 80 mg/m <sup>3</sup> , 20 ppm
	Long-term value: 40 mg/m <sup>3</sup> , 10 ppm
Sk	

**109-86-4 2-methoxyethanol**

WEL	Long-term value: 3 mg/m <sup>3</sup> , 1 ppm
Sk	

**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.

Do not inhale aerosols.

Avoid contact with the eyes and skin.

Remove contaminated clothing immediately.

Do not eat or drink while working.

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

**Breathing equipment:**

Essential if vapours/aerosols develop.

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Filter A (according to standard EN 3181) for vapours of organic compounds..

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**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**

Nitrile rubber, NBR

Natural rubber, NR

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:**

Nitrile rubber, NBR

Natural rubber, NR

Thickness: 0.11 mm.

Penetration time &gt; 120 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:**

No information available.

**Smell:**

slightly amine-like

**Odour threshold:**

No information available.

**Important information on protection of health and environment, and on safety.**

No further relevant information available.

**pH-value:**

No information available.

**Change in condition**

Not applicable.

**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**

Not applicable.

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<b>Steam pressure:</b>	No information available.
<b>Density</b>	No information available.
<b>Relative density</b>	No information available.
<b>Vapour density</b>	No information available.
<b>Evaporation rate</b>	No information available.
<b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Miscible
<b>Partition coefficient: n-octanol/water:</b>	No information available.
<b>Viscosity:</b>	
<b>dynamic:</b>	No information available.
<b>kinematic:</b>	No information available.
<b>Solvent content:</b>	
<b>Organic solvents:</b>	22.0 %
<b>Water:</b>	75.0 %
<b>Solids content:</b>	0.00 %

**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 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:** No further relevant information available.

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

**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:

##### 872-50-4 N-methyl-2-pyrrolidone

Oral	LD50	3600 mg/kg (rat)
Dermal	LD50	8000 mg/kg (rabbit)

##### 109-86-4 2-methoxyethanol

Oral	LD50	3400 mg/kg (rat)
Dermal	LD50	2000 mg/kg (rabbit)
Inhalative	LC50/4 h	1500 mg/l (rat)

**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.

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

May damage fertility. May damage the unborn child.

**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****Aquatic toxicity:** No further relevant information available.**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** Mobility in soil due to the liquid status.**Additional ecological information:****General notes:** Void.**12.5 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.**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:  
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:**

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.  
THESE TRANSPORT REGULATIONS APPLY TO THE WHOLE PACKAGE!

**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.**Hazard pictograms** See Section 2.**Signal word** See Section 2.**Hazard-determining components of labelling:** See Section 2.**Hazard statements** See Section 2.**Precautionary statements** See Section 2.**Chemical safety assessment** A chemical safety assessment was not carried out.**Directive 2012/18/EU****Named dangerous substances - ANNEX I** Contains none of the listed substances.**REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 30**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	22.0

**Water hazard class:** Void.**Other regulations, limitations and prohibitive regulations****Substances of very high concern (SVHC) according to REACH, Article 57**

Not applicable.

872-50-4	N-methyl-2-pyrrolidone
109-86-4	2-methoxyethanol

**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.

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### Relevant phrases

H226 Flammable liquid and vapour.  
 H302 Harmful if swallowed.  
 H312 Harmful in contact with skin.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H332 Harmful if inhaled.  
 H335 May cause respiratory irritation.  
 H360D May damage the unborn child.  
 H360FD May damage fertility. May damage the unborn child.

**Department issuing data specification sheet:** Product Safety

**Contact:** productsafety@medac.de

**Replaces version from:** -

### 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

ELINCS: European List of Notified 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

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

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

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

Repr. 1B: Reproductive toxicity – Category 1B

Repr. 1B: Reproductive toxicity – Category 1B

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

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