MATERIAL SAFETY DATA SHEET

According to EC Regulation No. 2015/830

Version: 1
Date of Issue: 09.06.2019
Revision Date: 09.06.2019

www.empbiotech.com

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Identification of the product

Product name:	**Fluoro•Spin 405 Protein Labeling & Purification Kit**
Catalogue No.:	MK-D0113
REACH Registration No.:	A registration number is not available for this substance as the substance or its uses 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

Identified use:	Laboratory chemical, Manufacture of substances
Uses advised against:	Not known.

1.3 Detail of the supplier of the safety data sheet

Company:	emp Biotech GmbH Robert-Roessle-Str. 10 D-13125 Berlin
Telefone: Telefax: E-mail:	+49-30-9489-2201 (Monday-Friday, 9:00 am-5:00 pm) +49-30-9489-3201 info@empbiotech.com

1.4 Emergency Number

INFOTRAC: **+1-352-323-3500** (Phone) or in the **US 800-535-5053** (toll-free), 24 hours/day, 7 days/week

2. HAZARDOUS IDENTIFICATION

2.1 Classification of the substance or mixture

Hazard classes and Hazard categories	Hazard Statements
Eye Dam. 1	H318

(For the full text of the listed hazard classes, hazard categories and hazard statements see section 16)

2.2 Label elements

Pictograms

GHS05

Signal Word

Danger

Hazard Statements

H318	Causes serious eye damage.

Precautionary statements

P280	Wear protective gloves/protective clothing/eye protection/face 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.
P310	Immediately call a POISON CENTER or doctor/physician.

Supplemental Hazard information (EU)

None.

Additional labelling

None

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Refer to component MSDS.

4. FIRST AID MEASURES

Refer to component MSDS.

5. FIRE-FIGHTING MEASURES

Refer to component MSDS.

6. ACCIDENTAL RELEASE MEASURES

Refer to component MSDS.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Handling corresponding to laboratory safety guidelines.

7.2 Conditions for safe storage, including any incompatibilities

Store at room temperature (15 – 20 °C). For longer storage columns must be stored at 4°C. Store away from foodstuffs. Store in cool, dry conditions in well sealed receptacles. Air and light sensitive.

7.3 Specific end uses

No data available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Refer to component MSDS.

9. PHYSICAL AND CHEMICAL PROPERTIES

Refer to component MSDS.

10. STABILITY AND REACTIVITY

Refer to component MSDS.

11. TOXICOLOGICAL INFORMATION

Refer to component MSDS.

12. ECOLOGICAL INFORMATION

Refer to component MSDS.

13. DISPOSAL CONSIDERATIONS

Refer to component MSDS.

14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: IMDG: IATA:

14.2 UN proper shipping name

ADR/RID: NOT DANGEROUS GOODS.
IMDG: NOT DANGEROUS GOODS.
IATA: NOT DANGEROUS GOODS.

14.3 Transport hazard class(es)

ADR/RID: IMDG: IATA:

14.4 Packaging group

ADR/RID: IMDG: IATA:

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

No data available

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

Not relevant.

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 2015/830.

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

No data available.

15.2 Chemical Safety Assessment

No data available.

16. OTHER INFORMATION

Kit components (chemicals):

Component 1 Succinimidyl ester of Fluoro•Spin 405 (DY-405-NHS ester), 50 nmol each vial.
Component 2 Dimethylsulfoxide (DMSO), anhydrous, 1.5 mL each vial.
Component 3 Sodium bicarbonate, 84 mg each vial.

Abbrevations and acronyms

Eye Dam. 1 Serious eye damage, Categorie 1

Text of H-code(s) mentioned in Section 2

H318 Causes serious eye damage.

Additional information

This information is given without any warranty or representation. It is believed to be correct but does not claim to be all inclusive and shall be used only as a guide. emp Biotech GmbH shall not be held liable for any damage resulting from handling or contact with the above product. It is offered solely for your consideration, investigation and verification.

For research and development use only. Not for drug, household or other uses.

Separate MSDS of kit component 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Identification of the product

Product name:	**DY-405-NHS ester, Component 1**
Catalogue No.:	MK-D0113
REACH Registration No.:	A registration number is not available for this substance as the substance or its uses 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

Identified use:	Laboratory chemical, Manufacture of substances
Uses advised against:	Not known.

1.3 Detail of the supplier of the safety data sheet

Company:	emp Biotech GmbH Robert-Roessle-Str. 10 D-13125 Berlin
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2. HAZARDOUS IDENTIFICATION

2.1 Classification of the substance or mixture

Hazard classes and Hazard categories	Hazard Statements
Eye Dam. 1	H318

(For the full text of the listed hazard classes, hazard categories and hazard statements see section 16)

2.2 Label elements

Pictograms

GHS05

Signal Word

Danger

Hazard Statements

H318	Causes serious eye damage.

Precautionary statements

P280	Wear protective gloves/protective clothing/eye protection/face 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.
P310	Immediately call a POISON CENTER or doctor/physician.

Supplemental Hazard information (EU)

None.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Main component of the substance

Substance Name:	DY-405-NHS ester
Synonyms:	DY-405-SE
Formula:	$C_{28}H_{23}N_2O_{15}S_3Na_3$
Molecular Weight:	792.66 g/mol
Index No.:	None.
EC No.:	None.
REACH Registration No.:	A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
CAS No.:	not known

Hazardous ingredients

Component	Classification	Concentration
DY-405-NHS ester CAS-No. not known	Eye Dam. 1; H318	<= 100 %

Impurities, stabilizing additives or individual constituents

No components need to be disclosed according to the applicable regulations.

(For the full text of the listed hazard classes and hazard categories, hazard statements and hazard symbol code(s) see section 16)

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice:

Consult a physician. Show this safety data sheet to the doctor in attendance.

After inhalation:

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

After skin contact:

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

After eye contact:

Rinse thoroughly with plenty of water for at least 15 minutes. Call an opthalmologist!

After swallowing:

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2.2 and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

no data available

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, carbon dioxide, dry chemical or foam.

Extinguishing media not to be used

No data available

5.2 Special hazards arising from the substance or mixture

Carbon oxides, nitrogen oxides (NOx), sulphur oxides

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Additional information

no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection, see section 8.

6.2 Environmental precautions

Do not allow to enter sewage system.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Recommended long-termed storage at -20°C. Tightly closed. Keep dry. Protect material from light, especially in solution! Never allow product to get in contact with water during storage.

Light sensitive. Hygroscopic. Store under inert gas.

7.3 Specific end uses

A part from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

No occupational exposure limits established.

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protection equipment

Respiratory protection:	Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Eye protection:	Safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Hand protection:	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
Skin and body protection:	Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hygiene measures:	When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Keep working clothes separately.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Important health, safety and environmental information

a) Physical state:	solid
b) Odour:	odourless
c) Odour Threshold:	no data available
d) pH value:	no data available
e) Melting point:	no data available
f) Boiling point:	no data available
g) Flash point:	no data available
h) Evaporation rate:	no data available
i) Flammability (solid, gas):	no data available
j) Explosion limits:	lowest no data available highest no data available
k) Vapour pressure (20 °C):	no data available
l) Vapour density:	no data available
m) Relative density (20°C):	no data available
n) Solubility in water:	soluble
o) Partition coefficient: n-octanol/water	no data available
p) Autoignition temperature:	no data available
q) Decomposition temperature:	no data available
r) Viscosity:	no data available
s) Explosive properties:	no data available
t) Oxidizing properties:	no data available

9.2 Other safety information

No data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

no data available

10.2 Chemical stability

Stable under normal conditions of use and storage. Slow decomposition with high humidity and/or in presence of water. Sensitivity to light.

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

Product is light sensitive and may decompose upon exposure to light. Avoid heat and/or strong oxidizing agents. Protect from high humidity.

10.5 Incompatible materials

Water.

10.6 Hazardous decomposition products

Incomplete combustion can generate hazardous carbon oxides (CO and CO_2) and nitrogen oxides (NO and NO_2). In the event of fire: see section 5

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11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

No data available.

Skin corrosion/irritation

No data available.

Serious eye damage/eye irritation

No data available.

Respiratory or skin sensitization

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available.

Specific target organ toxicity - single exposure

No data available.

Specific target organ toxicity - repeated exposure

No data available.

Aspiration hazard

No data available.

Potential health effects

Inhalation	No data available.
Ingestion	No data available.
Skin	No data available.
Eyes	Causes serious eye damage.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Other information

RTECS: Not available.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No data available.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

No data available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all Federal, State, and Local Regulations.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: IMDG: IATA:

14.2 UN proper shipping name

ADR/RID: NOT DANGEROUS GOODS.
IMDG: NOT DANGEROUS GOODS.
IATA: NOT DANGEROUS GOODS.

14.3 Transport hazard class(es)

ADR/RID: IMDG: IATA:

14.4 Packaging group

ADR/RID: IMDG: IATA:

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

No data available

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

Not relevant.

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of EU Regulation No. 2015/830.

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

No data available.

15.2 Chemical Safety Assessment

No data available.

16. OTHER INFORMATION

Used abbreviations and acronyms can be looked up under www.wikipedia.de

***Full text** of the listed hazard classes and hazard categories in section 2 to 15*

Eye Dam. 1	Serious eye damage (Category 1)
H318	Causes severe skin burns and eye damage.

Additional information

This information is given without any warranty or representation. It is believed to be correct but does not claim to be all inclusive and shall be used only as a guide. emp Biotech GmbH shall not be held liable for any damage resulting from handling or contact with the above product. It is offered solely for your consideration, investigation and verification.

Separate MSDS of kit component 2

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Identification of the product

Product name: **Dimethylsulfoxide, Component 2**

Catalogue No.: MK-D0125

REACH Registration No.: A registration number is not available for this substance as the substance or its uses 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

Identified use: Laboratory chemical, Manufacture of substances

Uses advised against: Not known.

1.3 Detail of the supplier of the safety data sheet

Company: emp Biotech GmbH
Robert-Roessle-Str. 10
D-13125 Berlin

Telefone: +49-30-9489-2201 (Monday-Friday, 9:00 am-5:00 pm)
Telefax: +49-30-9489-3201
E-mail: info@empbiotech.com

1.4 Emergency Number

INFOTRAC: **+1-352-323-3500** (Phone) or in the **US 800-535-5053** (toll-free), 24 hours/day, 7 days/week

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2. HAZARDOUS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a dangerous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

The product does not need to be labelled in accordance with EC directives or respective national laws.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Main component of the substance

Substance Name: dimethylsulfoxide
Synonyms: DMSO, Methyl sulfoxide
Formula: C_2H_6OS
Molecular Weight: 78.13 g/mol
Index No.: None.
EC No.: 200-664-3
REACH Registration No.: A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
CAS No.: 67-68-5

Impurities, stabilizing additives or individual constituents

No components need to be disclosed according to the applicable regulations.

(For the full text of the listed hazard classes and hazard categories, hazard statements and hazard symbol code(s) see section 16)

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice:

Consult a physician. Show this safety data sheet to the doctor in attendance.

After inhalation:

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

After skin contact:

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

After eye contact:

Rinse thoroughly with plenty of water for at least 15 minutes. Call an opthalmologist!

After swallowing:

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2.2 and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, carbon dioxide, dry chemical or foam.

Extinguishing media not to be used

No data available

5.2 Special hazards arising from the substance or mixture

Carbon oxides, sulphur oxides.

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Additional information

No data available.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid breathing vapours, mist or gas. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store under inert gas. Hygroscopic. Storage class (TRGS 510): Combustible liquids.

7.3 Specific end uses

A part from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

No occupational exposure limits established.

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protection equipment

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Eye protection: Safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Hand protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0,2 mm
Break through time: 38 min
Material tested:Dermatril® P (KCL 743 / Aldrich Z677388, Size M)
Data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de
Test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Skin and body protection:	Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hygiene measures:	When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Keep working clothes separately.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Important health, safety and environmental information

a) Physical state:	liquid, clear, colourless
b) Odour:	sulphurous
c) Odour Threshold:	no data available
d) pH value:	not applicable
e) Melting point:	16-19 °C
f) Boiling point:	189 °C
g) Flash point:	87 °C – closed cup
h) Evaporation rate:	no data available
i) Flammability (solid, gas):	no data available
j) Explosion limits:	lowest 42% highest 3.5%
k) Vapour pressure (20 °C):	0.6 hPa
l) Vapour density:	2,70 - (Air = 1.0)
m) Relative density (20°C):	1.1 g/cm^3
n) Solubility in water:	completely miscible
o) Partition coefficient: n-octanol/water	log Pow: -1,349
p) Autoignition temperature:	300 - 302 °C
q) Decomposition temperature:	> 190 °C
r) Viscosity:	no data available
s) Explosive properties:	Not explosive
t) Oxidizing properties:	The substance or mixture is not classified as oxidizing.

9.2 Other safety information

No data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available.

10.2 Chemical stability

Stable under normal conditions of use and storage.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents, Strong reducing agents.

10.6 Hazardous decomposition products

Other decomposition products - No data available.
In the event of fire: see section 5.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD_{50} Oral (rat): 14,500 mg/kg
LD_{50} Dermal (rabbit): 40,000 mg/kg
LC_{50} Inhalation (rat): 40,250 ppm / 4 h

Skin corrosion/irritation

No data available.

Serious eye damage/eye irritation

No data available.

Respiratory or skin sensitization

No data available.

Germ cell mutagenicity

Mouse
Lymphocyte
Cytogenetic analysis

Mouse
Lymphocyte
Mutation in mammalian somatic cells.

Rat
Cytogenetic analysis

Mouse
DNA damage

Carcinogenicity

Carcinogenicity - Rat – Oral
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages: Other: Tumors.

Carcinogenicity - Mouse – Oral
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Leukaemia Skin and Appendages: Other: Tumors.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

Reproductive toxicity - Rat – Intraperitoneal
Effects on Fertility: Abortion.

Reproductive toxicity - Rat – Intraperitoneal
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Reproductive toxicity - Rat – Subcutaneous
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).
Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).

Reproductive toxicity - Mouse – Oral
Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

Developmental Toxicity - Mouse – Intraperitoneal
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

Specific target organ toxicity - single exposure

No data available.

Specific target organ toxicity - repeated exposure

No data available.

Aspiration hazard

No data available.

Potential health effects

Inhalation No data available.
Ingestion No data available.
Skin No data available.
Eyes Causes serious eye damage.

Signs and Symptoms of Exposure

Effects due to ingestion may include: Nausea, Fatigue, Headache.
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Other information

RTECS: PV6210000

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Fish: LC50 - Pimephales promelas (fathead minnow) - 34.000 mg/l - 96 h
LC50 - Oncorhynchus mykiss (rainbow trout) - 35.000 mg/l - 96 h
Daphnia: EC50 - Daphnia pulex (Water flea) - 27.500 mg/l
Algae: EC50 - Lepomis macrochirus (Bluegill) - > 400.000 mg/l - 96 h

12.2 Persistence and degradability

Biodegradability Result: 31 % - According to the results of tests of biodegradability this product is not readily biodegradable. (OECD Test Guideline 301D)

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Stability in water - 0,12 - 1,2 h at 30 °C
Remarks: Hydrolyses readily.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all Federal, State, and Local Regulations.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID:	IMDG:	IATA:

14.2 UN proper shipping name

ADR/RID: NOT DANGEROUS GOODS.
IMDG: NOT DANGEROUS GOODS.
IATA: NOT DANGEROUS GOODS.

14.3 Transport hazard class(es)

ADR/RID:	IMDG:	IATA:

14.4 Packaging group

ADR/RID:	IMDG:	IATA:

14.5 Environmental hazards

ADR/RID: no	IMDG Marine pollutant: no	IATA: no

14.6 Special precautions for user

No data available

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

Not relevant.

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of EU Regulation No. 2015/830.

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

No data available.

15.2 Chemical Safety Assessment

No data available.

16. OTHER INFORMATION

Additional information

This information is given without any warranty or representation. It is believed to be correct but does not claim to be all inclusive and shall be used only as a guide. emp Biotech GmbH shall not be held liable for any damage resulting from handling or contact with the above product. It is offered solely for your consideration, investigation and verification.

Separate MSDS of kit component 3

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Identification of the product

Product name:	**Sodium bicarbonate, Component 3**
Catalogue No.:	MK-D0125
REACH Registration No.:	A registration number is not available for this substance as the substance or its uses 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

Identified use:	Laboratory chemical, Manufacture of substances
Uses advised against:	Not known.

1.3 Detail of the supplier of the safety data sheet

Company:	emp Biotech GmbH Robert-Roessle-Str. 10 D-13125 Berlin
Telefone:	+49-30-9489-2201 (Monday-Friday, 9:00 am-5:00 pm)
Telefax:	+49-30-9489-3201
E-mail:	info@empbiotech.com

1.4 Emergency Number

INFOTRAC: **+1-352-323-3500** (Phone) or in the **US 800-535-5053** (toll-free), 24 hours/day, 7 days/week

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2. HAZARDOUS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a dangerous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

The product does not need to be labelled in accordance with EC directives or respective national laws.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Main component of the substance

Substance Name:	sodium bicarbonate
Synonyms:	sodium hydrogen carbonate
Formula:	$CHNaO_3$
Molecular Weight:	84.01 g/mol
Index No.:	None.
EC No.:	205-633-8
REACH Registration No.:	01-2119457606-32-XXXX
CAS No.:	144-55-8

Impurities, stabilizing additives or individual constituents

No components need to be disclosed according to the applicable regulations.

(For the full text of the listed hazard classes and hazard categories, hazard statements and hazard symbol code(s) see section 16)

4. FIRST AID MEASURES

4.1 Description of first aid measures

After inhalation:

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

After skin contact:

Wash off with soap and plenty of water.

After eye contact:

Flush eyes with water as a precaution.

After swallowing:

Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2.2 and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media not to be used

No data available

5.2 Special hazards arising from the substance or mixture

Carbon oxides, sodium oxides.

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Additional information

No data available.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing vapours, mist or gas. For personal protection, see section 8.

6.2 Environmental precautions

No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non Combustible Solids.

7.3 Specific end uses

A part from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

No occupational exposure limits established.

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protection equipment

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Eye protection: Safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Hand protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested:Dermatril® P (KCL 740 / Aldrich Z677272, Size M)

Data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de
Test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Skin and body protection:	Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hygiene measures:	When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Keep working clothes separately.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Important health, safety and environmental information

a) Physical state:	solid
b) Odour:	no data available
c) Odour Threshold:	no data available
d) pH value:	not applicable
e) Melting point:	300 °C
f) Boiling point:	no data available
g) Flash point:	no data available
h) Evaporation rate:	no data available
i) Flammability (solid, gas):	no data available
j) Explosion limits:	lowest no data available highest no data available
k) Vapour pressure (20 °C):	no data available
l) Vapour density:	no data available
m) Relative density (20°C):	2.16 g/cm^3
n) Solubility in water:	50 g/l
o) Partition coefficient: n-octanol/water	no data available
p) Autoignition temperature:	no data available
q) Decomposition temperature:	no data available
r) Viscosity:	no data available
s) Explosive properties:	no data available
t) Oxidizing properties:	no data available

9.2 Other safety information

No data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available.

10.2 Chemical stability

Stable under normal conditions of use and storage.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

Exposure to moisture.

10.5 Incompatible materials

Strong acids, strong oxidizing agents.

10.6 Hazardous decomposition products

Other decomposition products - No data available.
In the event of fire: see section 5.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD_{50} Oral (rat): 4,220 mg/kg

Skin corrosion/irritation

Skin – Human
Result: Mild skin irritation - 3 d

Serious eye damage/eye irritation

Eyes – Rabbit
Result: Mild eye irritation - 30 s

Respiratory or skin sensitization

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available.

Specific target organ toxicity - single exposure

No data available.

Specific target organ toxicity - repeated exposure

No data available.

Aspiration hazard

No data available.

Potential health effects

Inhalation	No data available.
Ingestion	No data available.
Skin	No data available.
Eyes	No data available.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Other information

RTECS: No data available.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No data available.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

No data available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Observe all Federal, State, and Local Regulations.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: IMDG: IATA:

14.2 UN proper shipping name

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14.3 Transport hazard class(es)

ADR/RID: IMDG: IATA:

14.4 Packaging group

ADR/RID: IMDG: IATA:

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

No data available

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

Not relevant.

15. REGULATORY INFORMATION

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15.2 Chemical Safety Assessment

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