SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: Magnesium 21 FS R2

As part of the kits 1 4649 XX XX XXX
(The positions X code different packages.)

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

General use: Reagent for in-vitro diagnostics in human samples.
For professional use only.

1.3 Details of the supplier of the safety data sheet

Company name: DiaSys Diagnostic Systems GmbH
Street/POB-No.: Alte Strasse 9
Postal Code, city: DE-65558 Holzheim
WWW: http://www.diasys.de
E-mail: mail@diasys.de
Telephone: +49 (0) 6432-9146-0
Telefax: +49 (0) 6432-9146-32

Department responsible for information:
Corporate headquarters, Telephone: +49 (0) 6432-9146-0, Email: mail@diasys.de

1.4 Emergency telephone number

Infraserv, Telephone: +49 (0) 69-305-6418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to EC regulation 1272/2008 (CLP)

Skin Corr. 1B; H314 Causes severe skin burns and eye damage.
STOT SE 3; H335 May cause respiratory irritation.

2.2 Label elements

Labelling (CLP)

Signal word: **Danger**

Hazard statements:	H314	Causes severe skin burns and eye damage.
	H335	May cause respiratory irritation.
Precautionary statements:	P260	Do not breathe mist/vapours/spray.
	P280	Wear protective gloves/protective clothing/eye protection.
	P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
	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/doctor.

Special labelling

Text for labelling: Contains Ethanolamine.

2.3 Other hazards

Special danger of slipping by leaking/spilling product.

Endocrine disrupting properties, Results of PBT and vPvB assessment:

No data available

SECTION 3: Composition/information on ingredients

3.1 Substances: not applicable

3.2 Mixtures

Chemical characterisation: Aqueous solution

Hazardous ingredients:

Identifiers	Designation Classification	Content
EC No. 205-483-3 CAS 141-43-5	Ethanolamine Acute Tox. 4; H302. Acute Tox. 4; H312. Acute Tox. 4; H332. Skin Corr. 1B; H314. STOT SE 3; H335. Aquatic Chronic 3; H412. Specific concentration limits (SCL): STOT SE 3; H335: C ≥ 5 %	10 - 15 %

Full text of H- and EUH-statements: see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information: First aider: Pay attention to self-protection!
If medical advice is needed, have product container or label at hand. Take off immediately all contaminated clothing and wash it before reuse.

In case of inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention.

Following skin contact: Immediately clean with water and soap followed by thorough rinsing. In case of skin reactions, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently seek the immediate attention of an ophthalmologist.

After swallowing: Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do not induce vomiting. Immediately get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Causes severe skin burns and eye damage. May cause respiratory irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Extinguishing is to be in accordance with the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Fires in the immediate vicinity may cause the development of dangerous vapours.
In case of fire may be liberated: nitrogen oxides (NOx), carbon monoxide and carbon dioxide.

5.3 Advice for firefighters

Special protective equipment for firefighters:

Use a breathing apparatus independent of the ambient air (isolated apparatus) and a full protection outfit (suit) against chemicals.

Additional information:

Use fine water spray to cool endangered containers.
Do not allow fire water to penetrate into surface or ground water.
Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Do not breathe mist/vapours/spray.
Avoid contact with skin, eyes, and clothing. Wear appropriate protective equipment. Take off immediately all contaminated clothing and wash it before reuse. Keep unprotected people away. If possible, eliminate leakage.

6.2 Environmental precautions

Do not allow to enter into ground-water, surface water or drains.
If necessary notify appropriate authorities.

6.3 Methods and material for containment and cleaning up

Soak up with absorbent materials such as sand, siliceus earth, acid- or universal binder. Store in special closed containers and dispose of according to ordinance. Final cleaning.
Never return spills in original containers for re-use.

Additional information:

Special danger of slipping by leaking/spilling product.

6.4 Reference to other sections

Refer additionally to section 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advices on safe handling:

Provide adequate ventilation, and local exhaust as needed. Do not breathe mist/vapours/spray.
Do not get in eyes, on skin, or on clothing. Wear appropriate protective equipment.
Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.
Take off immediately all contaminated clothing and wash it before reuse.
Work place should be equipped with a shower and an eye rinsing apparatus.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Keep containers tightly closed and at a temperature between 2 °C and 8 °C.
Keep container in a well-ventilated place.
Store containers in upright position. Protect from heat and direct sunlight.

Hints on joint storage:

Do not store together with acids, oxidizing agents or metals.
Keep away from food, drink and animal feedingstuffs.

Storage class:

8B = Non-combustible corrosive substances

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
141-43-5	Ethanolamine	Europe: IOELV: STEL	7,6 mg/m³; 3 ppm (may be absorbed through the skin)
		Europe: IOELV: TWA	2,5 mg/m³; 1 ppm (may be absorbed through the skin)
		Germany: TRGS 900 Kurzzeit	0,5 mg/m³; 0,2 ppm (Aerosol and vapour, may be absorbed through the skin)
		Germany: TRGS 900 Langzeit	0,5 mg/m³; 0,2 ppm (Aerosol and vapour, may be absorbed through the skin)

8.2 Exposure controls

Provide good ventilation and/or an exhaust system in the work area.

Personal protection equipment

Occupational exposure controls

Respiratory protection: Respiratory protection must be worn whenever the WEL levels have been exceeded.
Use filter type A (= against vapours of organic substances) according to EN 14387.

Hand protection: Protective gloves according to EN 374.
Glove material: Nitrile rubber - Layer thickness: 0,11 mm.
Breakthrough time: >480 min.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: Tightly sealed goggles according to EN 166.

Body protection: Wear suitable protective clothing.

General protection and hygiene measures:
Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing.
Contaminated work clothing should not be allowed out of the workplace. Take off immediately all contaminated clothing and wash it before reuse.
Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.
Work place should be equipped with a shower and an eye rinsing apparatus.

Environmental exposure controls

Refer to "6.2 Environmental precautions".

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state at 20 °C and 101.3 kPa	liquid
Colour:	clear, blue
Odour:	sulfur-like
Odour threshold:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flammability:	No data available
Upper/lower flammability or explosive limits:	No data available
Flash point/flash point range:	No data available
Decomposition temperature:	No data available
pH:	at 25 °C: approx. 11,0
Viscosity, kinematic:	No data available
Water solubility:	at 20 °C: completely miscible
Partition coefficient: n-octanol/water:	No data available

Vapour pressure:	No data available
Density:	at 20 °C: 1,0055 g/mL
Vapour density:	No data available
Particle characteristics:	Not applicable

9.2 Other information

Explosive properties:	No data available
Oxidizing characteristics:	No data available
Auto-ignition temperature:	No data available
Evaporation rate:	No data available
Additional information:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

refer to 10.3

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4 Conditions to avoid

Protect from frost, heat and sunlight.

10.5 Incompatible materials

Acids, oxidizing agents, metals, rubber.
Information about Ethanolamine:
With nitrosic agents (such as nitric salts or nitric oxides) under special conditions may form nitrosamines.

10.6 Hazardous decomposition products

No hazardous decomposition products when regulations for storage and handling are observed.

Thermal decomposition: No data available

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicological effects:

The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral): Based on available data, the classification criteria are not met.
ATEmix (calculated): ATE > 5000 mg/kg.

Acute toxicity (dermal): Based on available data, the classification criteria are not met.
ATEmix (calculated): ATE > 5000 mg/kg.

Acute toxicity (inhalative): Based on available data, the classification criteria are not met.
ATEmix (calculated): ATE > 20 mg/L.

Skin corrosion/irritation: Skin Corr. 1B; H314 = Causes severe skin burns and eye damage.

Serious eye damage/irritation: Lack of data.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Lack of data.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): STOT SE 3; H335 = May cause respiratory irritation.

Specific target organ toxicity (repeated exposure): Lack of data.

Aspiration hazard: Lack of data.

11.2 Information on other hazards

Endocrine disrupting properties: No data available

Other information:

Information about Ethanolamine:
LD50 Rat, oral: 1089 mg/kg
LD50 Rabbit, dermal: 1015 mg/kg
With nitrosic agents (such as nitric salts or nitric oxides) under special conditions may form nitrosamines. In animal experiments nitrosamines were carcinogenic.

Symptoms

Information about Ethanolamine:

In case of inhalation: Mucous membrane irritation, bronchitis, cough and shortage of breath.
In case of ingestion: Burns in the mouth, pharynx, oesophagus, and gastrointestinal tract.
Risk of perforation in the oesophagus and stomach.
After contact with skin: The product is skin resorptive
After eye contact: Danger of loss of sight!

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity: Harmful effects on water organisms by modification of pH-value.

Information about Ethanolamine:
Harmful to aquatic life with long lasting effects.
Algae toxicity:
EC50 Desmodesmus subspicatus (green algae): 2,8 mg/L/72 h
Bacterial toxicity:
EC50 Activated sludge: 110 mg/L/17 h
Daphnia toxicity:
EC50 Daphnia magna (Big water flea): 65 mg/L/48 h
Fish toxicity:
LC50 Cyprinus carpio (Common Carp): 150 mg/L/96 h

Water Hazard Class: 2 = obviously hazardous to water

12.2 Persistence and degradability

Further details: Information about Ethanolamine:
Biodegradability: > 70 %/ 28 d (OECD 301 F). Readily degradable.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water:
No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

General information: Do not allow to enter undiluted resp. in large quantities into surface water or into drains.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste key number: 16 05 06* = Laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals
* = Evidence for disposal must be provided.

Recommendation: Special waste. Dispose of waste according to applicable legislation.

Package

Waste key number: 15 01 02 = Plastic packaging

Recommendation: Dispose of waste according to applicable legislation.
Non-contaminated packages may be recycled.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID, ADN, IMDG, IATA-DGR:
UN 2491

14.2 UN proper shipping name

ADR/RID, ADN, IMDG, IATA-DGR:
UN 2491, ETHANOLAMINE SOLUTION

14.3 Transport hazard class(es)

ADR/RID, ADN:	Class 8, Code: C7
IMDG:	Class 8, Subrisk -
IATA-DGR:	Class 8

14.4 Packing group

ADR/RID:	III

14.5 Environmental hazards

Dangerous for the environment:	Substance/mixture is not environmentally hazardous according to the criteria of the UN model regulations.
Marine pollutant - IMDG:	no

14.6 Special precautions for user

Land transport (ADR/RID)

Warning board:	ADR/RID: Kemmler-number 80, UN number UN 2491
Hazard label:	8
Limited quantities:	5 L
EQ:	E1
Package - Instructions:	P001 IBC03 LP01 R001
Special provisions for packing together:	MP19
Portable tanks - Instructions:	T4
Portable tanks - Special Provisions:	TP1
Tank coding:	L4BN
Tunnel restriction code:	E

Inland waterway craft (ADN)

Hazard label:	8
Limited quantities:	5 L
EQ:	E1
Transport permitted:	T
Equipment necessary:	PP - EP

Sea transport (IMDG)

EmS:	F-A, S-B
Special Provisions:	223
Limited quantities:	5 L
Excepted quantities:	E1
Package - Instructions:	P001, LP01
Package - Provisions:	-
IBC - Instructions:	IBC03
IBC - Provisions:	-
Tank instructions - IMO:	-
Tank instructions - UN:	T4
Tank instructions - Provisions:	TP1
Stowage and handling:	Category A.
Segregation:	SG35
Properties and observations:	Colourless. Miscible with water. Corrosive to copper, copper compounds, copper alloys and rubber. Reacts violenty with acids. Liquid and vapour cause burns to skin, eyes and mucous membranes.
Segregation group:	18

Air transport (IATA)

Hazard label:	Corrosive
Excepted Quantity Code:	E1
Passenger and Cargo Aircraft: Ltd.Qty.:	Pack.Instr. Y841 - Max. Net Qty/Pkg. 1 L
Passenger and Cargo Aircraft:	Pack.Instr. 852 - Max. Net Qty/Pkg. 5 L
Cargo Aircraft only:	Pack.Instr. 856 - Max. Net Qty/Pkg. 60 L
Special Provisions:	A3 A803
Emergency Response Guide-Code (ERG):	8L

14.7 Maritime transport in bulk according to IMO instruments

No data available

SECTION 15: Regulatory information

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

National regulations - Germany

Storage class: 8B = Non-combustible corrosive substances

Water Hazard Class: 2 = obviously hazardous to water

Information on working limitations:

Observe employment restrictions for young people.
Observe employment restrictions for expectant or nursing mothers.

Further regulations, limitations and legal requirements:

No data available

National regulations - EC member states

Further regulations, limitations and legal requirements:

No data available

15.2 Chemical Safety Assessment

For this mixture a chemical safety assessment is not required.

SECTION 16: Other information

Wording of the H-phrases under paragraph 2 and 3:

H302 = Harmful if swallowed.
H312 = Harmful in contact with skin.
H314 = Causes severe skin burns and eye damage.
H332 = Harmful if inhaled.
H335 = May cause respiratory irritation.
H412 = Harmful to aquatic life with long lasting effects.

Reason of change: Changes in section 15: Water hazard class
General revision

Date of first version: 7.12.2017

Department issuing data sheet: see section 1: Department responsible for information

Abbreviations and acronyms:

Acute Tox.: Acute toxicity
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
Aquatic Chronic: Hazardous to the aquatic environment - chronic
AS/NZS: Australian Standards/New Zealand Standards
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
EC: European Community
EC50: Effective Concentration 50%
EN: European Standard
EQ: Excepted quantities
EU: European Union
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
LC50: Median lethal concentration
LD50: Lethal dose 50%
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
OEL: Occupational Exposure Limit Value
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
Skin Corr.: Skin corrosion
STOT SE: Specific target organ toxicity - single exposure
TLV: Threshold Limit Value
TRGS: Technical Rules for Hazardous Substances
UN: United Nations
vPvB: Very persistent and very bioaccumulative
WEL: Workplace Exposure Limit

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.