

Revision date: 28.02.2020
Replacement of version 0014 of 07.01.2019

Version: 0015



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

1.1 Product identifier

Trade name **Tris Glycine SDS Sample Buffer
(4x Concentrate)**

Product number anam0028
Item code TG05008
Formulation TG4X PP
Formulation number 11/05

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

Appropriate use:
The product is used for electrophoresis in analytical laboratories.

1.3 Details of the supplier of the safety data sheet

anamed Elektrophorese GmbH
Ringstraße 4
D-64401 Gross-Bieberau
Telephone: +49-6162-809840
e-mail-address of the competent person responsible for this Safety Data Sheet:
urban-finking.gefstoff@t-online.de

Technical contact:

anamed Elektrophorese GmbH
Frau Dr. Vera Kreis
Telephone +49-6162-809840
Fax +49-6162-8098420

1.4 Emergency telephone number

Poison Control Center Mainz (Giftinformationszentrum Mainz) or local poison centers
Telephone +49-6131 19 2 40

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

The mixture does not meet the criteria for a classification as hazardous in accordance with the current version of Regulation (EC) No 1272/2008.

2.2 Label elements

Hazard pictogram(s):	No pictogram
Signal word(s):	No signal word
Product identifier:	Not required
Hazard statements:	Not required
Precautionary statements:	Not required

Supplemental hazard information:

According to Annex II Part 2 section 2.10 of the Regulation (EC) No 1272/2008 the label on the packaging of **mixtures not intended for the general public** shall bear the statement:

EUH210 – "Safety data sheet available on request".

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2.3 Other hazards

Possible health hazard if not used correctly.

Irritant effect on skin and eyes cannot be ruled out.

The product is classified as obviously hazardous to water.

The mixture does not contain any substances classified as PBT/vPvB in a concentration of 0.1% or more.

SECTION 3: Composition/information on ingredients**3.2 Mixtures**

REACH registration number:

- Trometamol: 01-2119957659-16-XXXX

3.2.1 Characterisation

Buffer solution (concentrate) for tris tricine applications.

It is an aqueous mixture based on several special substances.

3.2.2 Substances presenting a health/environmental hazard within the meaning of Regulation (EC) No 1272/2008

CAS No	EC No	Identification	% by weight	Classification
151-21-3	205-788-1	sodium dodecyl sulphate	5 - < 10	Flam. Sol. 2; H228 Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam.1; H318 Acute Tox. 4; H332 STOT SE 3; H335 Aquatic Chronic 3; H412

See subsection 2.2 for further details. Full text of the hazard statements see subsection 16.2.

3.2.3 Substances for which Union workplace exposure limits have been assigned and which are not already included under point 3.2.2 (see also Section 8.)

No substances.

3.2.4 Additional information

Specific concentration limits for sodium dodecyl sulphate in accordance with C&L Inventory of the European Chemicals Agency ECHA¹:

Eye Irrit. 2: 10% ≤ C < 20%

Eye Dam. 1: C ≥ 20%

The product contains 35 – 45% glycerol.

National occupational exposure limit values for various EU member states and/or DNEL/PNEC values have been assigned for this substance (see subsection 8.1).

The product contains 1 – 5% trometamol.

DNEL/PNEC values have been assigned for this substance (see subsection 8.1).

SECTION 4: First aid measures**4.1 Description of first aid measures****4.1.1 General information**

Change contaminated clothing and wash before reuse.

Emergency eyewash should be provided in the immediate working surroundings.

4.1.2 In case of inhalation

Remove the casualty into fresh air.

In the event of symptoms take medical treatment.

4.1.3 In case of contact with skin

In case of contact with skin rinse thoroughly with plenty of water.

4.1.4 In case of contact with eyes

In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Remove contact lenses, if present and easy to do.

4.1.5 In case of ingestion

If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting.

Let water be swallowed in little sips (dilution effect). Put victim at rest. Take medical treatment immediately.

4.2 Most important symptoms and effects, both acute and delayed

Irritant effect on skin and eyes cannot be ruled out.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

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SECTION 5: Firefighting measures

- 5.1 Extinguishing media**
- 5.1.1 Suitable extinguishing media**
Water spray jet, carbon dioxide, dry powder, foam.
- 5.1.2 Unsuitable extinguishing media**
Full water jet.
- 5.2 Special hazards arising from the substance or mixture**
In the event of fire the following can be released: hydrocarbons, carbon oxides, nitrogen oxides, sulfur oxides, sodium oxide, acrolein. Risk of formation of toxic pyrolysis products.
- 5.3 Advice for firefighters**
Wear self-contained breathing apparatus. Do not inhale explosion and combustion gases.
Cool endangered containers with water spray jet.
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.
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SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures**
- 6.1.1 For non-emergency personnel**
Ensure adequate ventilation. Use personal protective clothing.
Use respiratory protection if exposed to vapours.
Keep away from unprotected people.
- 6.1.2 For emergency responders**
For suitable fabric for personal protective clothing see Section 8.
- 6.2 Environmental precautions**
Do not discharge into the drains, the aquatic environment and soil.
- 6.3 Methods and material for containment and cleaning up**
Pick up with suitable material. Dispose of absorbed material in accordance with the regulations.
Send in suitable containers for recovery or disposal.
Flush away residues with plenty of water.
- 6.4 Reference to other sections**
For personal protective equipment see also Section 8.
For disposal considerations see also Section 13.
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SECTION 7: Handling and storage

- 7.1 Precautions for safe handling**
- 7.1.1 Advice on safe handling**
The normal safety precautions for handling of chemicals must be observed.
Avoid contact with eyes and skin.
Comply with the minimum standards in accordance with TRGS 500¹.
- 7.1.2 Advice on general occupational hygiene**
Do not inhale vapours. Avoid contact with eyes and skin.
At work do not eat, drink, smoke or take drugs.
Change contaminated clothing and wash before reuse.
Wash hands before breaks and after work.
Use barrier skin cream.
Emergency eyewash should be provided in the immediate working surroundings.
- 7.2 Conditions for safe storage, including any incompatibilities**
- 7.2.1 Advice on protection against fire and explosion**
None.
- 7.2.2 Requirements for storage rooms and vessels**
Keep container tightly closed. Keep in a cool place.
- 7.2.3 Advice on storage compatibility**
Do not store together with strong oxidising agents.
The information about joint storage given in Table 2 of TRGS 510¹ must be observed.
- 7.2.4 Further information on storage conditions**
None.
- 7.2.5 Storage class (for Germany only)**
LGK 12 (non-combustible liquids) in accordance with TRGS 510¹.
- 7.3 Specific end use(s)**
The product is only intended for the uses mentioned under subsection 1.2.
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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

CAS No	Identification	Limit values	Remarks
56-81-5	glycerol, mist		National limit values – eight hours
		10 mg/m ³	Belgium
		10 mg/m ³	Czech Republic
		10 mg/m ³	Estonia
		20 mg/m ³	Finland
		10 mg/m ³	France
		200 mg/m ³ - inhalable fraction	Germany
		10 mg/m ³	Ireland
		10 mg/m ³	Poland
		10 mg/m ³	Slovakia
		10 mg/m ³	Spain
		50 mg/m ³ - inhalable aerosol	Switzerland
		10 mg/m ³	United Kingdom
			National limit values – short term
		15 mg/m ³	Czech Republic
		400 mg/m ³ - inhalable fraction	Germany
		100 mg/m ³ - inhalable aerosol	Switzerland

DNEL values

Additional limit values for trometamol in accordance with the registration dossier:

worker, long-term exposition: inhalation, systemic effect:	117.5 mg/m ³
worker, long-term exposition: dermal, systemic effect:	166.7 mg/kg _{bw} /d
general population, long-term exposition: inhalation, systemic effect:	29 mg/m ³
general population, long-term exposition: dermal, systemic effect:	83.3 mg/kg _{bw} /d
general population, long-term exposition: oral, systemic effect:	8.3 mg/kg _{bw} /d

Additional values for glycerol in accordance with the registration dossier:

worker, long-term exposition: inhalation, local effects:	56 mg/m ³
general population, long-term exposition: inhalation, local effects:	33 mg/m ³
general population, long-term exposition: oral, systemic effects:	229 mg/kg _{bw} /d

Additional limit values for sodium dodecyl sulphate in accordance with the registration dossier:

worker, long-term exposition: inhalation, systemic effect:	285 mg/m ³
worker, long-term exposition: dermal, systemic effect:	4060 mg/kg _{bw} /d
general population, long-term exposition: inhalation, systemic effect:	85 mg/m ³
general population, long-term exposition: dermal, systemic effect:	2440 mg/kg _{bw} /d
general population, long-term exposition: oral, systemic effect:	24 mg/kg _{bw} /d

PNEC values

Additional limit values for trometamol in accordance with the registration dossier:

aquatic, sewage treatment plant:	300 mg/l
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Additional values for glycerol in accordance with the registration dossier:

aquatic, fresh water:	0.885 mg/l
aquatic, marine water:	0.088 mg/l
aquatic, sewage treatment plant (STP):	1000 mg/l
sediment, fresh water:	3.3 mg/kg _{dw}
sediment, marine water:	0.33 mg/kg _{dw}
soil environment:	0.141 mg/kg _{dw}

Additional limit values for sodium dodecyl sulphate in accordance with the registration dossier:

aquatic, fresh water:	0.176 mg/l
aquatic, marine water:	0.018 mg/l
aquatic, sewage treatment plant:	1.35 mg/l
sediment, fresh water:	6.97 mg/kg _{dw}
sediment, marine water:	0.697 mg/kg _{dw}
soil environment:	1.29 mg/kg _{dw}

The methods for measuring chemical agents in workplace atmosphere must meet the general requirements of EN 481, EN 482 and EN 689.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See also subsection 7.1. The effectiveness of suitable protective measures must be controlled.

Suitable assessment methods are described in the German TRGS 402¹.

8.2.2 Individual protection measures, such as personal protective equipment

Personal protective equipment needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. In the cases of special applications, it is recommended to check the chemical resistance with the manufacturer/supplier of the personal protective equipment.

8.2.2.1 Eye/face protection

Tightly fitting safety glasses in accordance with EN 166 (i.e. safety glasses with side shields).

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8.2.2.2 Skin protection**Hand protection:**

In case of operations where skin contact is possible, wear suitable protective gloves.

Chemical protective gloves needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. Information on appropriate protective gloves is currently not available. In the cases of special applications, it is recommended to check the chemical resistance with the manufacturer of the gloves. The protective gloves to be used must comply with the specifications of the standard EN 374.

Body protection:

Closed work clothing.

8.2.2.3 Respiratory protection

With correct and proper use, and adequate ventilation of the working place, respiratory protection is not required.

In case of inadequate ventilation, and in case of formation of vapours/aerosols, wear respiratory protection.

Information on appropriate respirator protection is currently not available.

The limitations in wearing time according to the the DGUV Regel 112-190² (rule of the German employers' liability insurance association) for the use of respirators have to observed.

8.2.2.4 Thermal hazards

Not relevant.

8.2.3 Environmental exposure controls

See Section 6.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

Physical state:	liquid
Colour:	blue
Odour:	odorless
Odour threshold:	no relevant
pH (as supplied):	6.8 – 7.2
pH (of an aqueous solution):	not determined
Melting point/freezing point (°C):	not determined
Boiling point and boiling range (°C):	not determined
Flash point (°C), closed cup:	not relevant
Evaporation rate:	no data available
Flammability (solid, gas):	not relevant
Upper flammability or explosive limit:	not relevant
Lower flammability or explosive limit:	not relevant
Vapour pressure (20°C) (mbar):	no data available
Vapour density (20°C):	no data available
Density (g/cm ³):	not determined
Relative density:	not determined
Solubility in water:	miscible
Soluble in:	not determined
Partition coefficient: n-octanol/water:	- 2.03 (20°C) (sodium dodecyl sulphate) (OECD Test Guideline 107) - 1.75 (25°C) (glycerol) (OECD Test Guideline 107) - 2.3 (20°C) (trometamol) (registration dossier)
Auto-ignition temperature (°C):	no data available
Decomposition temperature (°C):	no data available
Viscosity:	no data available
Explosive properties:	not explosive
Oxidising properties:	not relevant

9.2 Other information

None.

SECTION 10: Stability and reactivity**10.1 Reactivity**

No data available for the mixture.

10.2 Chemical stability

The product is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Reaction with strong oxidising agents possible.

10.4 Conditions to avoid

No information available for the product.

10.5 Incompatible materials

Reaction with strong oxidising agents possible.

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10.6 Hazardous decomposition products

When used as intended, no hazardous decomposition products known.
For hazardous combustion products see subsection 5.2.

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

The mixture has not been tested.

11.1.1 Acute toxicity

LD50 rat, oral	(mg/kg)	1200	(sodium dodecyl sulphate)	(OECD Test Guideline 402)
		12600	(glycerol)	(RTECS)
		> 5000	(trometamol)	(OECD Test Guideline 425)
LD50 rat, dermal	(mg/kg)	> 2000	(sodium dodecyl sulphate)	(OECD Test Guideline 402)
		> 18700	(glycerol)	(IUCLID)
		> 5000	(trometamol)	(OECD Test Guideline 402)
LC50 rat, inhalation	(mg/l/4h)	No data available.		

11.1.2 Skin corrosion/irritation

Irritant effect on skin (rabbit)	Irritations	(sodium dodecyl sulphate)	(OECD Test Guideline 404)
	Not irritating	(glycerol)	(registration dossier)
	Not irritating	(trometamol)	(OECD Test Guideline 404)

11.1.3 Serious eye damage/irritation

Irritant effect on eyes (rabbit)	Irreversible effects	(sodium dodecyl sulphate)	(OECD Test Guideline 405)
	Not irritating	(glycerol)	(registration dossier)
	Not irritating	(trometamol)	(OECD Test Guideline 405)

11.1.4 Respiratory or skin sensitisation

No data available for the product.

Skin sensitisation (guinea pig)	Not sensitising	(sodium dodecyl sulphate)	(OECD Test Guideline 406)
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11.1.5 Germ cell mutagenicity

The mixture does not contain substances classified as germ cell mutagens.

11.1.6 Carcinogenicity

The mixture does not contain substances classified as carcinogenic.

11.1.7 Reproductive toxicity

The mixture does not contain substances classified as toxic for the reproduction.

11.1.8 Specific target organ toxicity (STOT)-single exposure

The mixture contains substances classified as being a specific target organ toxicant after single exposure below generic concentration limits triggering a classification.

11.1.9 Specific target organ toxicity (STOT)-repeated exposure

The mixture does not contain substances classified as being a specific target organ toxicant after repeated exposure.

11.1.10 Aspiration hazard

The mixture does not contain aspiration toxicants.

11.1.11 Symptoms related to the physical, chemical and toxicological characteristics

Irritant effect on eyes and skin cannot be ruled out if the product is not used correctly.

11.1.12 Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritant effect on eyes and skin cannot be ruled out if the product is not used correctly.

SECTION 12: Ecological information**12.1 Toxicity****Aquatic toxicity:**

96 h LC50	(fish)	29 mg/l	(Pimephales promelas; fathead minnow)	(OECD Test Guideline 203)
		885 mg/l	(sodium dodecyl sulphate)	(registration dossier)
			(glycerol)	(registration dossier)
48 h LC/EC50	(daphnia)	3.15 mg/l	(Artemia salina)	(registration dossier)
		> 980 mg/l	(sodium dodecyl sulphate)	(registration dossier)
			(Daphnia magna)	(OECD Test Guideline 202)
			(trometamol)	(OECD Test Guideline 202)
		1955 mg/l	(Daphnia magna)	(registration dossier)
			(glycerol)	(registration dossier)
72 h EC50	(algae)	> 120 mg/l	(Desmodesmus subspicatus)	(DIN 38412, part 9)
		397 mg/l	(sodium dodecyl sulphate)	(DIN 38412, part 9)
			(Pseudokirchneriella subcapitata)	(OECD Test Guideline 201)
			(trometamol)	(OECD Test Guideline 201)

Behaviour in sewage works:

Treat by state-of-the-art technology before discharging into drains.

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12.2 Persistence and degradability

The product has not been tested.

Sodium dodecyl sulfate:

biodegradation 95%, exposure time 28 days (OECD Test Guideline 301 B); readily biodegradable.

Glycerol:

Readily biodegradable (registration dossier).

Trometamol:

biodegradation 100.7%, exposure time 28 days (OECD Test Guideline 301 F); readily biodegradable.

Chemical oxygen demand (COD) No data available.

Biochemical oxygen demand (BOD5) No data available.

AOX-hint Not to apply.

12.3 Bioaccumulative potential

Partition coefficient n-octanol/water:

- 2.03 (20°C) (sodium dodecyl sulphate)	(OECD Test Guideline 107)
- 1.75 (25°C) (glycerol)	(OECD Test Guideline 107)
- 2.3 (20°C) (trometamol)	(registration dossier)

Bioaccumulation is not expected.

12.4 Mobility in soil

The product has not been tested.

12.5 Results of PBT and vPvB assessment

The mixture does not contain any substances classified as PBT/vPvB in a concentration of 0.1% or more.

12.6 Other adverse effects

Ozone depletion potential No data available.

Photochemical ozone creation potential No data available.

Global warming potential No data available.

The product is classified as obviously hazardous to water.

Contains according to the formulation following heavy metals and compounds of EC-Directives 2006/11/EC and 80/68/EEC:

None.

SECTION 13: Disposal considerations**13.1 Waste treatment methods**

Waste disposal according to official state regulations.

Consult the local waste disposal expert about waste disposal.

Sewage disposal must be avoided.

Disposal operations/recovery operations according to Directive 2008/98/EC

Disposal operations: D 9 Physico-chemical treatment

Recovery operations: R 3 Recycling/reclamation of organic substances which are not used as solvents

Properties of waste which render it hazardous in accordance with Annex III of Directive 2008/98/EC

Not relevant.

13.1.1 Product / unused product

Waste disposal corresponding to European Waste Catalogue. Wastes must be classified with respect to their origin and depending on different processing steps. The waste codes mentioned as follows are only constituted as our recommendations. Referring to the particular case they should be completed or revised.

EC waste code: 16 05 06

Waste notation: Laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals

13.1.2 Contaminated packaging

Recommendation: Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

Recommended cleansing agent: Water

Packaging that cannot be cleaned:

EC waste code: 15 01 06

Waste notation: Mixed packaging

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SECTION 14: Transport information

- 14.1 UN number**
No dangerous good in accordance with the UN Model Regulations (ADR/RID/ADN/IMDG/ICAO/IATA).
- 14.2 UN proper shipping name**
Not relevant.
- 14.3 Transport hazard class(es)**
Not relevant.
- 14.4 Packing group**
Not relevant.
- 14.5 Environmental hazards**
Not relevant.
- 14.6 Special precautions for user**
Not relevant.
- 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code**
Not relevant.

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- 15.1.1 Information regarding relevant Union safety, health and environmental provisions**
Regulation (EC) No 1907/2006: The mixture does not contain substances classified as substances of very high concern (SVHC) in accordance with Article 57 of the regulation.
- 15.1.2 Information regarding national laws/national measures that may be relevant (for Germany only)**
Restriction of occupation: Not relevant
Major-accident Ordinance: Not relevant
Fire and explosion hazards: Not relevant
Regulation on clean air (TA Luft): Not relevant
Water hazard class: WGK 2 – obviously hazardous to water (deduction of the WGK according to Annex 1 No 5.2 AwSV)³
The German Ordinance on facilities for handling substances that are hazardous to water (AwSV) has to be observed
- German Ordinance on Hazardous substances (in accordance with EC-Directive 98/24/EC): Article 6 must be observed
Articles 7, 8 and 14 must be observed as required
- Technical Rules for Hazardous Substances¹: TRGS 400, 500, 510, 900
Rules of the employers' liability insurance association²: DGUV Regel 112-190, 112-192, 112-195
- 15.2 Chemical safety assessment**
No chemical safety assessment has been carried out for a substance in the product.

SECTION 16: Other information

- 16.1 Keeping (restrictions)**
Supply: Not relevant
University (college, academy), industry consumer
- 16.2 Full text of the hazard statements referred to under subsection 2.1 and point 3.2.2 of the Safety Data Sheet**
H228: Flammable solid.
H302: Harmful if swallowed.
H315: Causes skin irritation.
H318: Causes serious eye damage.
H332: Harmful if inhaled.
H335: May cause respiratory irritation.
H412: Harmful to aquatic life with long lasting effects.

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16.3 Key to abbreviations and acronyms used in the safety data sheet

ADN:	Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
ADR:	Accord européen relatif au transport international des marchandises dangereuses par route
AOX:	adsorbable organically bound halogens
AwSV:	Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (Ordinance on facilities for handling substances that are hazardous to water)
DNEL:	Derived No-Effect Level
ICAO/IATA:	International Civil Aviation Organisation/International Air Transport Association-Dangerous Goods Regulations
IMDG-Code:	International Maritime Dangerous Goods-Code
IUCLID:	International Uniform Chemical Information Database
KBwS:	Commission for the Evaluation of substances hazardous to waters (Kommission Bewertung wassergefährdende Stoffe)
LGK:	Lagerklasse (storage class)
OECD:	Organisation for Economic Co-operation and Development
PBT:	persistent, bioaccumulative and toxic
PNEC:	Predicted No-Effect Concentration
RID:	Règlement international concernant le transport des marchandises dangereuses par chemin de fer
RTECS:	Registry of Toxic Effects of Chemical Substances
TRGS:	Technische Regeln für Gefahrstoffe (Technical Rules for Hazardous Substances)
vPvB:	very persistent and very bioaccumulative

16.4 Literature references and sources for data

- ¹ <http://www.baua.de>
- ² <http://www.arbeitssicherheit.de>
- ³ <http://www.umweltbundesamt.de>
- ⁴ <http://echa.europa.eu/de/information-on-chemicals/cl-inventory-database>

16.5 Method used for the classification of the mixture

The product does not meet the criteria for a classification as hazardous in accordance with the current version of Regulation (EC) No 1272/2008.

16.6 Changes which have been made to the previous version of the safety data sheet

Revised sections: 1.3, 3.2.1, 8.1, 9.1, 11.1.1, 11.1.2, 11.1.3, 11.1.4, 12.1, 12.2, 12.3, 15.1.1, 15.1.2, 16.4

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