



elma korrosionsschutzzusatz (elma-KS)

Print date 02.12.2022
Revision date 20.09.2022
Version 3.5 (en)
replaces version of 25.11.2020 (3.4)

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

*** 1.1 Product identifier**

Trade name/designation elma korrosionsschutzzusatz (elma-KS)
Unique Formula Identifier UFI: CF30-E0CY-7006-9AGF
Product category PC-TEC-OTH Other products for chemical or technical processes

Hazard components
2-(2-aminoethoxy)ethanol

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

Sector of uses [SU]
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
SU3 Industrial uses

Use of the substance/mixture
Anticorrosion additive for aqueous neutral and alkaline cleaning and rinsing bathes. The product does not contain secondary amines according to the recipe. Recommended application: about 0.1%.

1.3 Details of the supplier of the safety data sheet

Supplier
Elma Schmidbauer GmbH
Gottlieb-Daimler-Str. 17
D-78224 Singen (Htwl.)
Telephone +49 7731 882-0
Telefax +49 7731 882-266
E-mail info@elma-ultrasonic.com
Website www.elma-ultrasonic.com

Department responsible for information:
Chemie/Labor: Email: chemlab@elma-ultrasonic.com

*** 1.4 Emergency telephone number**

Vergiftungs-Informations-Zentrale Freiburg (Sprache/Language: DE, +49 761 19240
EN)

*** SECTION 2: Hazards identification**

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP] Classification procedure

Eye Dam. 1, H318 On basis of test data.

Hazard statements for health hazards
H318 Causes serious eye damage.

Remark
Classification procedure for skin corrosion/irritation: On basis of test data.

*** 2.2 Label elements**

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms



GHS05



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Signal word

Danger

Hazard statements

H318 Causes serious eye damage.

Precautionary statements

P102 Keep out of reach of children.

P280 Wear eye/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 doctor.

P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P311 Call a POISON CENTER/doctor.

* **Other labelling**

Labelling for contents according to regulation (EC) No. 648/2004:

≥ 30% soap

* **2.3 Other hazards**

* **Adverse human health effects and symptoms**

Acute Tox. 5 (oral + dermal) H303 + H313: May be harmful if swallowed or in contact with skin.

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

* **Adverse environmental effects**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

Results of PBT and vPvB assessment

The product does not contain any PBT-/vPvB-substances according to the recipe.

SECTION 3: Composition / information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

Hazardous ingredients

CAS No.	EC No.	Substance name	Concentration	Classification according to Regulation (EC) No 1272/2008 [CLP]	SCL/ M/ ATE
102-71-6	203-049-8	triethanolamine [2,2',2''-nitrilotriethanol]	20 < 30 weight-%		
929-06-6	213-195-4	2-(2-aminoethoxy)ethanol	10 - 20 weight-%	Skin Corr. 1B; H314 Eye Dam. 1; H318	

REACH No.	Substance name
01-2119486482-31	triethanolamine [2,2',2''-nitrilotriethanol]
01-2119520701-52	2-(2-aminoethoxy)ethanol

Additional information

Aqueous alkaline mixture from aminocompounds and fatty acids.



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* **SECTION 4: First aid measures**

* **4.1 Description of first aid measures**

General information

Remove contaminated, saturated clothing immediately.
In the event of persistent symptoms receive medical treatment.

* **Following skin contact**

In case of contact with skin wash off with water.

After eye contact

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Following ingestion

Give activated charcoal.
Do NOT induce vomiting.
If swallowed seek medical advice immediately and show the doctor packing or label.
If swallowed, immediately drink:
Water
Medical treatment necessary.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms

No further informations available.

4.3 Indication of any immediate medical attention and special treatment needed

Notes for the doctor

No further informations available.

* **SECTION 5: Firefighting measures**

5.1 Extinguishing media

Suitable extinguishing media

Water
Foam
Carbon dioxide (CO₂)

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

In the event of fire the following can be released:
Nitrogen oxides (NO_x)
Carbon monoxide

* **5.3 Advice for firefighters**

* **Special protective equipment for firefighters**

Do not inhale explosion and combustion gases.
In case of fire: Wear self-contained breathing apparatus.

* **Additional information**

Fire class
B (Fires of liquids or liquid turning substances).

* **SECTION 6: Accidental release measures**

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Use personal protection equipment.
Special danger of slipping by leaking/spilling product.



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For emergency responders

Personal protection equipment
Use personal protection.
Forms slippery surfaces with water.
Special danger of slipping by leaking/spilling product.

6.2 Environmental precautions

Do not allow to enter into surface water or drains.

6.3 Methods and material for containment and cleaning up

For containment

Suitable material for taking up:
Sand
Sawdust
Universal binder
Flush away residues with water.
After taking up the material dispose according to regulation.

* **6.4 Reference to other sections**

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

* **SECTION 7: Handling and storage**

* **7.1 Precautions for safe handling**

*

Protective measures

Handle and open container with care.
Do not inhale aerosols
Avoid contact with eyes and skin.
Usual measures for fire prevention.
The product is:
Not readily flammable.

Advices on general occupational hygiene

Make available sufficient washing facilities
Keep away from food and drink.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep/Store only in original container.

Storage class

10 Combustible liquids that cannot be assigned to any of the above storage classes

Materials to avoid

Do not store together with:
Acid
Oxidising agent

Further information on storage conditions

Keep locked up and out of reach of children.
Protect from heat and direct solar radiation.
Do not keep at temperatures below -5°C.
Do not keep at temperatures above 30°C.
Storage time: 5 years.
At storage brownish discolouration.

7.3 Specific end use(s)

Recommendation

Care for thoroughly room ventilation for higher bath temperatures.



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*** SECTION 8: Exposure controls/personal protection**

*** 8.1 Control parameters**

Occupational exposure limit values

CAS No.	EC No.	Substance name	occupational exposure limit value
102-71-6	203-049-8	Triethanolamine	5 [mg/m ³] (IE)

*** DNEL worker**

CAS No.	Substance name	DNEL value	DNEL type	Remark
929-06-6	2-(2-aminoethoxy)ethanol	0.15 mg/m ³	long-term inhalative (local)	Assessment factor 75
929-06-6	2-(2-aminoethoxy)ethanol	16.8 mg/m ³	long-term inhalative (systemic)	Assessment factor 25
929-06-6	2-(2-aminoethoxy)ethanol	4.8 mg/kg bw/day	long-term dermal (systemic)	Assessment factor 100
102-71-6	triethanolamine [2,2',2''-nitrilotriethanol]	1 mg/m ³	long-term inhalative (local)	
102-71-6	triethanolamine [2,2',2''-nitrilotriethanol]	7.5 mg/kg bw/day	long-term dermal (systemic)	Assessment factor 50

*** PNEC**

CAS No.	Substance name	PNEC Value	PNEC type	Remark
102-71-6	triethanolamine [2,2',2''-nitrilotriethanol]	0.32 mg/L	aquatic, freshwater	Assessment factor 50
102-71-6	triethanolamine [2,2',2''-nitrilotriethanol]	10 mg/L	sewage treatment plant (STP)	Assessment factor 100

8.2 Exposure controls

Personal protection equipment

Eye/face protection
tightly fitting goggles

Hand protection
chemical-resistant gloves
Glove material specification [make/type, thickness]: FKM, 0.4mm.
Glove material specification [make/type, thickness]: NBR, 0.35mm.

Environmental exposure controls

Technical measures to prevent exposure
Avoid penetration into the subsoil/soil.
Do not discharge into surface waters.

Additional information

Occupational exposure limits of 2-(2-aminoethoxy)ethanol.
Occupational exposure limits for triethanolamine.

*** SECTION 9: Physical and chemical properties**

9.1 Information on basic physical and chemical properties

Physical state
liquid

Colour
light yellow up to light brown

Odour
like:
Amines



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Safety relevant basis data

	Value	Method	Source, Remark
Odour threshold:			not determined
Melting point/freezing point	solidifying range < -5 °C		
Boiling point or initial boiling point and boiling range	≥ 149 °C		
flammability	solid		not applicable
flammability	gaseous		not applicable
Lower and upper explosion limit	Upper explosion limit 15.5 Vol-%		Value of 2-(2-aminoethoxy)ethanol.
Lower and upper explosion limit	Lower explosion limit 2 Vol-%		Value of 2-(2-aminoethoxy)ethanol.
Flash point			No flash point up to 100 °C.
Auto-ignition temperature	324 °C		Value of triethanolamine.
Decomposition temperature	> 100 °C		
pH	in delivery state 9- 9.5 (20°C) Concentration 10 g/L		
Viscosity	dynamic 370- 820 mPa*s (22.5°C)		
Viscosity	kinematic 132 mm ² /s (40°C)		
Solubility(ies)	Water solubility		miscible
Partition coefficient n-octanol/water (log value)	-1.89		Value of 2-(2-aminoethoxy)ethanol.
Vapour pressure	0.014 hPa (20°C)		Value of 2-(2-aminoethoxy)ethanol.
Density and/or relative density	approx. 1.07 g/cm ³ (20°C)		
Relative vapour density	3.62		Value of 2-(2-aminoethoxy)ethanol.
particle characteristics			not applicable (liquid).

* **9.2 Other information**

* **Information with regard to physical hazard classes**

* **Explosives**

* **Assessment/classification**

The mixture does not contain any explosive substances (CLP I 2.1.4.3 a).
CLP I 2.1.4.3 a: The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with explosive properties.

* **flammable gases**

* **Assessment/classification**

not applicable (liquid).

* **Aerosols**

* **Assessment/classification**

not relevant - no aerosol.
The classification criteria for this hazard class are not met by definition.



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* **Oxidising gas**

* **Assessment/classification**
not applicable (liquid).

* **Gases under pressure**

* **Assessment/classification**
not applicable (liquid - no dissolved gas).

* **flammable liquids**

Safety characteristics

	Value	Method, Result	Source, Remark
Flash point (°C)	> 100 °C		

* **Assessment/classification**
The mixture is not classified as flammable liquids.

* **flammable solids**

* **Assessment/classification**
not applicable (liquid).

* **Self-reactive substances and mixtures**

* **Assessment/classification**
The mixture does not contain any self-reactive substances (CLP I 2.8.4.2 a).
CLP I 2.8.4.2 a: There are no chemical groups present in the molecule associated with explosive or self reactive properties.

* **Pyrophoric liquids**

* **Assessment/classification**
The mixture does not contain any pyrophoric substances - not spontaneously flammable (CLP I 2.9.4.1).
CLP I 2.9.4.1: The classification procedure for pyrophoric liquids need not be applied when experience in manufacture or handling shows that the substance or mixture does not ignite spontaneously on coming into contact with air at normal temperatures (i.e. the substance is known to be stable at room temperature for prolonged periods of time (days)).

* **Pyrophoric solids**

* **Assessment/classification**
not applicable (liquid).

* **self-heating substances and mixtures**

* **Assessment/classification**
The mixture does not contain any self-heating substances.

* **Substances or mixtures which, in contact with water, emit flammable gases**

* **Assessment/classification**
not relevant - in contact with water releases no flammable gases (CLP I 2.12.4.1).
CLP I 2.12.4.1: The classification procedure for this class need not be applied if: (a) the chemical structure of the substance or mixture does not contain metals or metalloids; or (b) experience in production or handling shows that the substance or mixture does not react with water, e.g. the substance is manufactured with water or washed with water; or (c) the substance or mixture is known to be soluble in water to form a stable mixture.

* **Oxidising liquids**

* **Assessment/classification**
The mixture does not contain any oxidising substances.

* **Oxidising solids**

* **Assessment/classification**
not applicable (liquid).



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* **Organic peroxides**

* **Assessment/classification**

The mixture does not contain any organic peroxides.

* **Corrosive to metals**

* **Assessment/classification**

The mixture does not contain any substances corrosive to metals.
Based on available data, the classification criteria are not met.

* **Desensitised explosives**

* **Assessment/classification**

The mixture does not contain any desensitised explosive substances.

Other safety characteristics

	Value	Method	Source, Remark
Evaporation rate			Water: 0.36 (ASTM D3539).
Solvent content	0 %		
Explosive properties			none
Oxidising properties			none

* **Other information**

No further relevant informations available.

* **SECTION 10: Stability and reactivity**

* **10.1 Reactivity**

Exothermic reaction with:
Acid
No further hazardous reactions known if used as directed.

10.2 Chemical stability

Stable at ambient temperature.

10.3 Possibility of hazardous reactions

Reactions with acids.
Reactions with oxidising agents.

10.4 Conditions to avoid

Heat and direct solar radiation.

10.5 Incompatible materials

Acid
Oxidising agent
Nitric acid
Acid chlorides, inorganic

10.6 Hazardous decomposition products

No decomposition if used as directed.



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*** SECTION 11: Toxicological information**

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

*** Acute toxicity**

*** Animal data**

	Effective dose	Method, Evaluation	Source, Remark
Acute oral toxicity	2900- 3000 mg/kg	ATE: Acute Toxicity Estimate	The acute oral toxicity is corresponding to GHS-category 5.
Acute dermal toxicity	CAS No.929-06-6 2-(2-aminoethoxy)ethanol LD50: 2558 mg/kg Species Rat 2800- 3000 mg/kg	ATE: Acute Toxicity Estimate	The acute dermal toxicity is corresponding to GHS-category 5.
Acute inhalation toxicity	CAS No.929-06-6 2-(2-aminoethoxy)ethanol LD50: > 3000 mg/kg Species Rabbit Acute inhalation toxicity (vapour)		not relevant

*** Assessment/classification**

May be harmful if swallowed or in contact with skin.

Skin corrosion/irritation

Animal data

Result / Evaluation	Method	Source, Remark
slightly irritant but not relevant for classification. Species Rabbit	OECD 404	

Serious eye damage/irritation

Animal data

Result / Evaluation	Method	Source, Remark
Risk of serious damage to eyes.	OECD 437	

*** Sensitisation to the respiratory tract**

*** Assessment/classification**

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

Skin sensitisation

Animal data

Result / Evaluation	Dose / Concentration	Method	Source, Remark
The mixture is not classified as skin sensitiser.		Calculation method.	

*** Germ cell mutagenicity**

*** Assessment/classification**

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

*** Carcinogenicity**

*** Assessment/classification**

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



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* **Reproductive toxicity**

* **Assessment/classification**

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

* **Overall Assessment on CMR properties**

The mixture is not classified as mutagen / not classified as carcinogen / not classified as reproductive toxicant.

* **STOT-single exposure**

* **STOT SE 1 and 2**

* **Assessment/classification**

The mixture is not classified as specific target organ toxicant (single exposure).
Based on available data, the classification criteria are not met.

* **STOT SE 3**

* **Irritation to respiratory tract**

* **Assessment/classification**

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

* **Narcotic effects**

* **Assessment/classification**

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

* **STOT-repeated exposure**

* **Assessment/classification**

The mixture is not classified as specific target organ toxicant (repeated exposure).
Based on available data, the classification criteria are not met.

* **Aspiration hazard**

* **Assessment/classification**

The mixture is not classified as aspiration hazardous.
Based on available data, the classification criteria are not met.

11.2 Information on other hazards

Symptoms related to the physical, chemical and toxicological characteristics

	Effective dose	Method,Evaluation	Source, Remark
Endocrine disrupting properties			This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

* **SECTION 12: Ecological information**

* **12.1 Toxicity**

Aquatic toxicity

	Effective dose	Method,Evaluation	Source, Remark
Acute (short-term) fish toxicity	LC50: 217 mg/L	calculated.	
Chronic (long-term) fish toxicity	not determined		
Acute (short-term) toxicity to crustacea	EC50 153 mg/L	calculated.	
Chronic (long-term) toxicity to aquatic invertebrate	not determined		
Acute (short-term) toxicity to algae and cyanobacteria	EC50 128 mg/L	calculated.	



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	Effective dose	Method, Evaluation	Source, Remark
Chronic (long-term) toxicity to aquatic algae and cyanobacteria	not determined		
Toxicity to other aquatic plants/organisms	not determined		
Toxicity to microorganisms	not determined		

* **Assessment/classification**

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

12.2 Persistence and degradability

	Value	Method	Source, Remark
Biodegradation	Degradation rate > 80 %	OECD 301B/ ISO 9439/ EEC 92/69/V, C.4-C	Readily biodegradable (according to OECD criteria).
Biodegradation	Degradation rate 100 %	Neutralization, pH-measurement	
Biodegradation	Degradation rate 96 % Test duration 19 d	OECD 301E/ EEC 92/69/V, C.4-B	CAS No.102-71-6 triethanolamine [2,2',2''-nitrilotriethanol]
Biodegradation	Degradation rate 84 % Test duration 28 d	OECD 302B/ ISO 9888/ EEC 92/69/V, C.9	CAS No.929-06-6 2-(2-aminoethoxy)ethanol

12.3 Bioaccumulative potential

Assessment/classification

2-(2-aminoethoxy)ethanol: Accumulation in organisms is not expected (log Pow: -1.89).
triethanolamine: Accumulation in organisms is not expected (BCF: <0,4).

12.4 Mobility in soil

Assessment/classification

2-(2-aminoethoxy)ethanol: Adsorption on soil is not expected.
triethanolamine: Adsorption on soil is not expected (Koc: 10).

12.5 Results of PBT and vPvB assessment

The product does not contain any PBT-/vPvB-substances according to the recipe.

12.6 Endocrine disrupting properties

	Effective dose	Method, Evaluation	Source, Remark
Endocrine disrupting properties			This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7 Other adverse effects

	Value	Method	Source, Remark
Ozone depletion potential (ODP):			Based on available data, the classification criteria are not met.

Additional ecotoxicological information

	Value	Method	Source, Remark
Chemical oxygen demand (COD) AOX	2018 mgO ₂ /g	calculated.	
			The product does not contain any organically bound halogens according to the recipe.



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Additional information

The surfactants in our product meet the criteria for biodegradation as laid down in Annex III of the Regulation (EC) No 648/2004 on detergents.

The mixture is not classified as acute/chronic hazardous to the aquatic environment.

Do not allow uncontrolled discharge of product into the environment.

No further relevant informations available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste codes/waste designations according to EWC/AVV

Waste code product	Waste name
200129 *	detergents containing hazardous substances

Appropriate disposal / Product

Do not dispose with household waste.

Suitable for neutralization are acetic acid (60%, liquid) or citric acid (solid powder, crystallized) if a stainless steel bath is used.

Dispose of waste according to applicable legislation.

Appropriate disposal / Package

Non-contaminated packages may be recycled.

SECTION 14: Transport information

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1 UN number or ID number	-	-	-
14.2 UN proper shipping name	-	-	-
14.3 Transport hazard class(es)	-	-	-
14.4 Packing group	-	-	-
14.5 Environmental hazards	No	No	No
14.6 Special precautions for user	none		

14.7 Maritime transport in bulk according to IMO instruments

not relevant

Land transport (ADR/RID)

Remark

Not classified for this transport carrier.

Sea transport (IMDG)

Remark

No hazardous material as defined by the prescriptions.

Air transport (ICAO-TI / IATA-DGR)

Remark

No hazardous material as defined by the prescriptions.



Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

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* **SECTION 15: Regulatory information**

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

* **EU legislation**

Authorisations

not relevant

Restrictions on use

Regulation (EC) No 1907/2006 (REACH), Annex XVII No 3 - not relevant if used as directed.

Regulation (EC) No 1907/2006 (REACH), Annex XVII No 75 - not relevant if used as directed.

* **Restrictions of occupation**

Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

Other regulations (EU)

To follow:

Regulation (EC) No. 648/2004 (Detergents regulation)

Directive 2012/18/EU, Annex I: not mentioned.

Directive 2010/75/EU on industrial emissions [Industrial Emissions Directive] VOC

VOC content, delivery state 0 %

15.2 Chemical Safety Assessment

For this mixture a chemical safety assessment were not carried out.

* **SECTION 16: Other information**

* **Abbreviations and acronyms**

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

ASTM: American Society for Testing and Materials

ATE: Acute Toxicity Estimate

AVV: Waste Shipment Ordinance (DE)

DGR: Dangerous Goods Regulations (IATA)

DNEL: derived no-effect level

DOC: Dissolved Organic Carbon

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

IMDG: International Maritime Dangerous Goods

IMO: International Maritime Organization

JArbSchG: Youth Labor Protection Act (DE)

OECD: Organisation for Economic Cooperation and Development

PBT: persistent and bioaccumulative and toxic

PNEC: Predicted No Effect Concentration

RID: Dangerous goods regulations for transport by rail

TI: Technical Instruction

TRGS: Technical Rules for Hazardous Substances

VOC: Volatile organic compounds

vPvB: very persistent, very bioaccumulative

Key literature references and sources for data

Own measurements.

European Chemicals Agency, <http://echa.europa.eu/>.

Informations from our suppliers.

Additional information

National and local regulations concerning chemicals shall be observed.

These data are given according to our actual knowledge about this product. This data sheet does not correspond to an assurance by virtue of a contract for properties of the product.



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Relevant H- and EUH-phrases (Number and full text)

H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.

Indication of changes

* Data changed compared with the previous version