

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

Printing date: 21.12.2022

Version number 7 (replaces version 6)

Revision: 21.12.2022

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

· **1.1 Product identifier**

· **Trade name:** Rhodium sulphate ZM, 80 g Rh/l  
Rhodiumsulfat ZM 80,0 g Rh/l

· **Article number:** 81012160

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
Not approved for private consumers.

· **Application of the substance / the mixture** Galvanic bath

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Heimerle + Meule GmbH  
Dennigstrasse 16  
D-75179 Pforzheim

Telefon +49 (0) 7231 940-0  
Telefax +49 (0) 7231 940-2199  
www.heimerle-meule.com

· **Further information obtainable from:**

Abteilung BASU - Bau/Arbeitssicherheit/Umwelt  
Department BASU - Construction / Occupational Safety / Environment  
sds@heimerle-meule.com

IATA - 24h Emergency Contact - IATA - 24h Emergency Contact -  
(Dangerous goods emergency number)  
+49 172 739 6970

· **1.4 Emergency telephone number:**

DEUTSCHLAND - GERMANY:  
Vergiftungs-Informationen-Zentrale Freiburg, ++49 761 19240 (24 h)  
(Poisoning Information Center)

GREAT BRITAIN:  
National Poisons Information Service +44 121 507 4123  
Members of the public seeking specific information on poisons should contact:  
In England and Wales: NHS 111 - dial 111 - In Scotland: NHS 24 - dial 111

IRELAND  
+353 1 809 2166 (7 Days 8 am -10 pm)  
Healthcare Professionals: +353 1 809 2566

ITALY:  
Istituto Superiore di Sanità (ISS) +3906499906140  
Centro Antiveneni

Bergamo: +39 800 883300

Firenze +39 055 794 7819

Milano: +39 055 794 7819

Roma +39 06 68593726

Roma +39 06 49978000

Roma +39 06 3954343

KROATIA - REPUBLIKA HRVATSKA:  
(+385) 01 2348 342

ESTLAND - ESTONIA:  
Tervisemeti Mürgistustabekeskuse

National (24/7): 16662

(+372) 7943 794

LETTLAND - LATVIA:  
Valsts Toksikoloģijas centrs, Saindēšanās un zāļu informācijas centrs,  
(24h) 112

(Contd. on page 2)

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

Printing date: 21.12.2022

Version number 7 (replaces version 6)

Revision: 21.12.2022

**Trade name: Rhodium sulphate ZM, 80 g Rh/l**  
**Rhodiumsulfat ZM 80,0 g Rh/l**

(Contd. of page 1)

(24h) +371 67042473

LITAUEN - LIETUVOS RESPUBLIKA:

Poison Information Bureau (24/7), Tel.: +8 5 236 20 52

Apsinuodijimų informacijos biuras

## SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008



health hazard

Muta. 2 H341 Suspected of causing genetic defects.



corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

- 2.2 Label elements
- Labelling according to Regulation (EC) No 1272/2008
- The product is classified and labelled according to the GB CLP regulation.
- Hazard pictograms



GHS05



GHS08

- Signal word *Danger*
- Hazard-determining components of labelling:  
Dirrhodiumtrisulphate  
sulphuric acid
- Hazard statements  
H314 Causes severe skin burns and eye damage.  
H341 Suspected of causing genetic defects.

- Precautionary statements

P260 Do not breathe dusts or mists.

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.

P321 Specific treatment (see on this label).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 3)

## Safety data sheet

### according to 1907/2006/EC, Article 31

Printing date: 21.12.2022

Version number 7 (replaces version 6)

Revision: 21.12.2022

**Trade name: Rhodium sulphate ZM, 80 g Rh/l**  
**Rhodiumsulfat ZM 80,0 g Rh/l**

(Contd. of page 2)

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous components / Information on ingredients:**

CAS: 10489-46-0 EINECS: 234-014-5	Dirhodiumtrisulphate ----- ☠ Muta. 2, H341 ☠ Met. Corr.1, H290; Skin Corr. 1A, H314; Eye Dam. 1, H318	25–50%
CAS: 7664-93-9 EINECS: 231-639-5 Index number: 016-020-00-8 Reg.nr.: 01-2119453338-20	sulphuric acid; sulfuric acid ----- ☠ Met. Corr.1, H290; Skin Corr. 1A, H314 Specific concentration limits: Skin Corr. 1A; H314: C ≥ 15 % Skin Irrit. 2; H315: 5 % ≤ C < 15 % Eye Irrit. 2; H319: 5 % ≤ C < 15 %	7–10%

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**  
 Personal protection for the First Aider.  
 Take affected persons out of danger area and lay down.  
 Immediately remove any clothing soiled by the product.
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**  
 Do not induce vomiting; call for medical help immediately.  
 Drink plenty of water and provide fresh air. Call for a doctor immediately.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Hazards** Danger of gastric perforation.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
 No further relevant information available.

### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
 CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**  
 Under certain fire conditions, traces of other toxic gases cannot be excluded, e.g.:  
 Sulphur dioxide (SO<sub>2</sub>)

(Contd. on page 4)

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

Printing date: 21.12.2022

Version number 7 (replaces version 6)

Revision: 21.12.2022

**Trade name: Rhodium sulphate ZM, 80 g Rh/l**  
**Rhodiumsulfat ZM 80,0 g Rh/l**

(Contd. of page 3)

- **5.3 Advice for firefighters**
- **Protective equipment:**



*Wear self-contained respiratory protective device.*

### **SECTION 6: Accidental release measures**

- **6.1 Personal precautions, protective equipment and emergency procedures**  
*Wear protective equipment. Keep unprotected persons away.*
- **6.2 Environmental precautions:** *Do not allow to enter sewers/ surface or ground water.*
- **6.3 Methods and material for containment and cleaning up:**  
*Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Use neutralising agent.  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.*
- **6.4 Reference to other sections**  
*See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.*

### **SECTION 7: Handling and storage**

- **7.1 Precautions for safe handling**  
*When diluting always pour product into water and not vice versa.  
Keep receptacles tightly sealed.  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.  
The usual precautionary measures are to be adhered to when handling chemicals.  
Prevent formation of aerosols.  
Wear suitable respiratory protective device when decanting larger quantities without extractor facilities.  
Do not dry clean dust covered objects and floors. Wash thoroughly with plenty of water.*
- **Information about fire - and explosion protection:** *Keep respiratory protective device available.*
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
*Observe official regulations on storing packagings .  
Observe official regulations on storing packagings .  
Prevent any seepage into the ground.*
- **Information about storage in one common storage facility:**  
*Store away from foodstuffs.*
- **Further information about storage conditions:**  
*Keep container tightly sealed.  
Store under lock and key and out of the reach of children.*
- **Storage class:** 8 B
- **7.3 Specific end use(s)** *No further relevant information available.*

GB

(Contd. on page 5)

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

Printing date: 21.12.2022

Version number 7 (replaces version 6)

Revision: 21.12.2022

**Trade name: Rhodium sulphate ZM, 80 g Rh/l**  
**Rhodiumsulfat ZM 80,0 g Rh/l**

(Contd. of page 4)

## SECTION 8: Exposure controls/personal protection

### · 8.1 Control parameters

#### · **Ingredients with limit values that require monitoring at the workplace:**

**CAS: 7664-93-9 sulphuric acid**

WEL (Great Britain)	Long-term value: 0.05* mg/m <sup>3</sup> *mist: defined as thoracic fraction
IOELV (European Union)	Long-term value: 0.05 mg/m <sup>3</sup>
AGW (Germany)	Long-term value: 0.1 E mg/m <sup>3</sup> I(I);DFG, EU, Y

#### · **Regulatory information**

WEL (Great Britain): EH40/2020

IOELV (European Union): (EU) 2019/1831

AGW (Germany): TRGS 900

· **Additional information:** The lists valid during the making were used as basis.

### · 8.2 Exposure controls

· **Appropriate engineering controls** No further data; see item 7.

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

According to EC Directive 89/686/EEC

· **Respiratory protection:**

Not necessary if room is well-ventilated.

Beware: Filter masks provide protection for a short period of time only. They should only be used in exceptional cases, that is if a small amount of the substance has spilled out or in order to fight spillages and fire.

according EN 14387

according to EN 143

· **Recommended filter device for short term use:** Filter P2

· **Hand protection**



Protective gloves

according to EN 374

To avoid skin problems reduce the wearing of gloves to the required minimum.

Only use chemical-protective gloves with CE-labelling of category III.

Sensibilisation by the components in the glove materials is possible.

Check the permeability prior to each anewed use of the glove.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Prior to working with gloves the rubbing in with tanniferous skin-protecting agents for the avoidance of skin softening due to perspiration is recommended.

(Contd. on page 6)

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

Printing date: 21.12.2022

Version number 7 (replaces version 6)

Revision: 21.12.2022

**Trade name: Rhodium sulphate ZM, 80 g Rh/l**  
**Rhodiumsulfat ZM 80,0 g Rh/l**

(Contd. of page 5)

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

The determined penetration times according to EN 16523-1:2015 are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.

For the mixture of chemicals mentioned below the penetration time has to be at least 480 minutes (Permeation according to EN 374 Part 3: Level 3).

Value for the permeation: Level  $\leq 3$

· **Not suitable are gloves made of the following materials: Leather gloves**

· **Eye/face protection**



Tightly sealed goggles

according to EN 166

· **Body protection: Protective work clothing**

**SECTION 9: Physical and chemical properties**

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Physical state**

Fluid

· **Colour:**

Dark orange colour

· **Odour:**

Odourless

· **Odour threshold:**

Not determined.

· **Melting point/freezing point:**

Undetermined.

· **Boiling point or initial boiling point and boiling range**

100°C (212°F)

· **Flammability**

Not applicable.

· **Lower and upper explosion limit**

· **Lower:**

Not determined.

· **Upper:**

Not determined.

· **Flash point:**

Not applicable.

· **Decomposition temperature:**

Not determined.

· **pH at 20°C (68°F)**

1

· **Viscosity:**

· **Kinematic viscosity**

Not determined.

· **Dynamic:**

Not determined.

· **Solubility**

· **water:**

Fully miscible.

· **Partition coefficient n-octanol/water (log value)**

Not determined.

· **Vapour pressure:**

Not determined.

· **Density and/or relative density**

· **Density at 20°C (68°F):**

1.22 g/cm<sup>3</sup> (10.18 lbs/gal)

· **Relative density**

Not determined.

(Contd. on page 7)

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

Printing date: 21.12.2022

Version number 7 (replaces version 6)

Revision: 21.12.2022

**Trade name: Rhodium sulphate ZM, 80 g Rh/l**  
**Rhodiumsulfat ZM 80,0 g Rh/l**

(Contd. of page 6)

· Vapour density	Not determined.
<b>· 9.2 Other information</b>	
· Appearance:	
· Form:	Fluid
· Important information on protection of health and environment, and on safety.	
· Auto-ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product does not present an explosion hazard.
· Change in condition	
· Evaporation rate	Not determined.
<b>· Information with regard to physical hazard classes</b>	
· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Void
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	Void
· Desensitised explosives	Void

### SECTION 10: Stability and reactivity

- 10.1 Reactivity No further relevant information available.
- 10.2 Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- 10.3 Possibility of hazardous reactions Reacts with light alloys to form hydrogen.
- 10.4 Conditions to avoid No further relevant information available.
- 10.5 Incompatible materials: No further relevant information available.
- 10.6 Hazardous decomposition products: No dangerous decomposition products known.

### SECTION 11: Toxicological information

- 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008
- Skin corrosion/irritation Causes severe skin burns and eye damage.
- Serious eye damage/irritation Causes serious eye damage.
- Germ cell mutagenicity Suspected of causing genetic defects.
- 11.2 Information on other hazards

· Endocrine disrupting properties

None of the ingredients is listed.

GB

(Contd. on page 8)

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

Printing date: 21.12.2022

Version number 7 (replaces version 6)

Revision: 21.12.2022

**Trade name: Rhodium sulphate ZM, 80 g Rh/l**  
**Rhodiumsulfat ZM 80,0 g Rh/l**

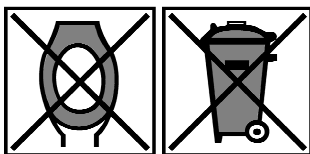
(Contd. of page 7)

### SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment** Not applicable.
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**  
The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Additional ecological information:**
- **General notes:** Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**



Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Contact manufacturer for recycling information.

- **Waste disposal key:**  
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.
- **Uncleaned packaging:**
- **Recommendation:**  
Disposal must be made according to official regulations.  
Packaging which is uncleaned or soiled with product remains is to be treated like the product itself  
Packaging free of product remains is to be supplied refuse for recycling. Only if no adequate collecting system is available, they may be disposed of through the domestic rubbish
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

### SECTION 14: Transport information

- |                                       |   |
|---------------------------------------|---|
| · <b>14.1 UN number or ID number</b>  |   |
| · <b>ADR, IMDG, IATA</b>              | UN3264  |
| · <b>14.2 UN proper shipping name</b> |   |
| · <b>ADR</b>                          | UN3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (SULPHURIC ACID, Dirhodiumtrisulphate) |
| · <b>IMDG, IATA</b>                   | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (SULPHURIC ACID, Dirhodiumtrisulphate)        |

(Contd. on page 9)



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

Printing date: 21.12.2022

Version number 7 (replaces version 6)

Revision: 21.12.2022

**Trade name: Rhodium sulphate ZM, 80 g Rh/l**  
**Rhodiumsulfat ZM 80,0 g Rh/l**

(Contd. of page 8)

· **14.3 Transport hazard class(es)**

· **ADR, IMDG, IATA**



· **Class** 8 Corrosive substances.  
· **Label** 8

· **14.4 Packing group**

· **ADR, IMDG, IATA** II

· **14.5 Environmental hazards:**

· **Marine pollutant:** No

· **14.6 Special precautions for user**

· **Hazard identification number (Kemler code):** Warning: Corrosive substances.  
80  
· **EMS Number:** F-A,S-B  
· **Segregation groups** (SGG1) Acids  
· **Stowage Category** B  
· **Stowage Code** SW2 Clear of living quarters.

· **14.7 Maritime transport in bulk according to IMO instruments**

Not applicable.

· **Transport/Additional information:**

· **ADR**

· **Limited quantities (LQ)** 1L  
· **Excepted quantities (EQ)** Code: E2  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 500 ml  
· **Transport category** 2

· **IMDG**

· **Limited quantities (LQ)** 1L  
· **Excepted quantities (EQ)** Code: E2  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 500 ml

· **IATA**

· **Remarks:**

24h emergency contact -  
(Dangerous goods emergency number)  
  
+49 172 739 6970

· **UN "Model Regulation":**

UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC,  
N . O . S . ( S U L P H U R I C A C I D ,  
DIRHODIUMTRISULPHATE), 8, II

**SECTION 15: Regulatory information**

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

COUNCIL DIRECTIVE 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from

(Contd. on page 10)

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

Printing date: 21.12.2022

Version number 7 (replaces version 6)

Revision: 21.12.2022

**Trade name: Rhodium sulphate ZM, 80 g Rh/l**  
**Rhodiumsulfat ZM 80,0 g Rh/l**

(Contd. of page 9)

the risks related to chemical agents at work (fourteenth individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC)

DIRECTIVE 2012/18/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC

· **GADSL - Global Automotive Declarable Substance List**

None of the ingredients is listed.

· **National regulations:**

· **Waterhazard class:** .

· **Other regulations, limitations and prohibitive regulations -**

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Reasons for revise**

If necessary, this safety data sheet can be revised according to legal guidelines.

Our current version for your reference is available on our website  
[www.heimerle-meule.com](http://www.heimerle-meule.com)

· **Relevant phrases**

H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.  
H318 Causes serious eye damage.  
H341 Suspected of causing genetic defects.

· **Department issuing SDS:**

Abteilung BASU - Bau/Arbeitssicherheit/Umwelt  
Department BASU - Construction / Occupational Safety / Environment

[sds@heimerle-meule.com](mailto:sds@heimerle-meule.com)

· **Contact:**

Herr Thomas Knuth  
[thomas.knuth@heimerle-meule.com](mailto:thomas.knuth@heimerle-meule.com)  
[sds@heimerle-meule.com](mailto:sds@heimerle-meule.com)

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)  
ICAO: International Civil Aviation Organisation  
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)  
AwSV: Ordinance on facilities for handling water-polluting substances (German regulation).  
TRGS: Technical rules for hazardous substances (German regulation)  
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
PBT: Persistent, Bioaccumulative and Toxic

(Contd. on page 11)

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

Printing date: 21.12.2022

Version number 7 (replaces version 6)

Revision: 21.12.2022

**Trade name: Rhodium sulphate ZM, 80 g Rh/l**  
**Rhodiumsulfat ZM 80,0 g Rh/l**

(Contd. of page 10)

vPvB: very Persistent and very Bioaccumulative  
Met. Corr. 1: Corrosive to metals – Category 1  
Skin Corr. 1A: Skin corrosion/irritation – Category 1A  
Eye Dam. 1: Serious eye damage/eye irritation – Category 1  
Muta. 2: Germ cell mutagenicity – Category 2  
· \* **Data compared to the previous version altered.**

GB