

Printing date: 12.11.2020 Version number 13 Revision: 12.11.2020

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

- · 1.1 Product identifier
- Trade name: Gold plating bath GP 204, 3 g Au/l Goldplattierbad GP 204, 3 g Au/l
- · Article number:

86902300 = 3 g Au/l81020416 = 3 g Au/l, 1 l

- 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:

 $Abteilung\ BASU-Bau/Arbeits sicherheit/Umwelt\ Department\ BASU-Construction\ /\ Occupational\ Safety\ /\ Environment\ sds\\ @heimerle-meule.com$ 

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

· 1.4 Emergency telephone number:

#### DEUTSCHLAND - GERMANY:

Vergiftungs-Informations-Zentrale Freiburg, ++49 761 19240 (24 h)

(Poisoning Information Center)

**GREAT BRITAIN:** 

National Poisons Information Service +44 121 507 4123

 ${\it Members of the public seeking specific information on poisons should contact:}$ 

In England and Wales: NHS 111 - dial 111 - In Scotland: NHS 24 - dial 111 ITALY:

*Istituto Superiore di Sanità* +3906499906140

KROATIA - REPUBLIKA HRVATSKA:

 $\overline{(+385)\ 01\ 2348\ 342}$ 

ESTLAND - ESTONIA:

Tervisemeti Mürgistusteabekeskuse 16662, (+342) 7914 794

LETTLAND - LATVIA:

Latvijas Vides, ģeoloģijas un meteoroloģijas centrs (+371) 670 32600

LITAUEN - LIETUVOS RESPUBLIKA:

Apsinuodijimų informacijos biuras +370 (85) 2362052

GB



Printing date: 12.11.2020 Version number 13 Revision: 12.11.2020

Trade name: Gold plating bath GP 204, 3 g Au/l Goldplattierbad GP 204, 3 g Au/l

(Contd. of page 1)

## SECTION 2: Hazards identification

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



Carc. 1B H350i May cause cancer by inhalation.



Acute Tox. 4 H332 Harmful if inhaled.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

· 2.2 Label elements

· Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

· Hazard pictograms





GHS07

GHS08

- · Signal word Danger
- · Hazard-determining components of labelling:

Potassium dicyanoaurate

Cobalt acetate cristaline 23/24 % Co

· Hazard statements

H332 Harmful if inhaled.

H350i May cause cancer by inhalation.

H412 Harmful to aquatic life with long lasting effects.

· Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

*P273* Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P405 Store locked up.

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

· Additional information:

EUH208 Contains Potassium dicyanoaurate, Cobalt acetate cristaline 23/24 % Co. May produce an allergic reaction.

Restricted to professional users.

(Contd. on page 3)



Printing date: 12.11.2020 Version number 13 Revision: 12.11.2020

Trade name: Gold plating bath GP 204, 3 g Au/l Goldplattierbad GP 204, 3 g Au/l

(Contd. of page 2)

- · Labelling of packages where the contents do not exceed 125 ml
- · Hazard pictograms





GHS07

· Signal word Danger

#### · Hazard-determining components of labelling:

Potassium dicyanoaurate

Cobalt acetate cristaline 23/24 % Co

· Hazard statements

H350i May cause cancer by inhalation.

H412 Harmful to aquatic life with long lasting effects.

· Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

P405 Store locked up.

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

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

## SECTION 3: Composition/information on ingredients

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

· Dangerous components / Information on ingredients:			
CAS: 77-92-9 EINECS: 201-069-1 RTECS: GE 7350000	citric acid; 1,2,3-Propanetricarboxylic acid, 2-hydroxy-; 2- Hydroxy-1,2,3-propanetricarboxylic acid; Citronensäure • Eye Irrit. 2, H319	1–2.5%	
CAS: 13967-50-5 EINECS: 237-748-4 Reg.nr.: 01-2120130777-52	Potassium dicyanoaurate  Acute Tox. 2, H300; Acute Tox. 2, H330  Met. Corr.1, H290; Eye Dam. 1, H318  Aquatic Acute 1, H400; Aquatic Chronic 1, H410  Skin Irrit. 2, H315; Skin Sens. 1, H317	<0.5%	
CAS: 6147-53-1 EINECS: 200-755-8 Index number: 027-006-00-6	Cobalt acetate cristaline 23/24 % Co; cobalt di(acetate); cobalt acetate; cobalt(II) acetate tetrahydrate  Resp. Sens. 1, H334; Muta. 2, H341; Carc. 1B, H350i; Repr. 1B, H360F  Aquatic Acute 1, H400 (M=10); Aquatic Chronic 1, H410 (M=10)  Skin Sens. 1, H317  Specific concentration limit: Carc. 1B; H350: C ≥ 0.01 %	0.1-<0.25%	

## ·SVHC

CAS: 6147-53-1 Cobalt acetate cristaline 23/24 % Co

#### Additional information:

The potassium goldcyanide - K[Au(CN)2] - , which is used at the preparation, has a strong complexity and is also very strong pH- buffert.

Arelease of the cyanide containing (a formation of very poisoning hydrocyanic acid) is only possible by addition of a big quantity of concentrated acids.

(Contd. on page 4)



Printing date: 12.11.2020 Version number 13 Revision: 12.11.2020

Trade name: Gold plating bath GP 204, 3 g Au/l Goldplattierbad GP 204, 3 g Au/l

(Contd. of page 3)

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.

Involve doctor immediately after a accident or unwell

- · After inhalation: Supply fresh air; consult doctor in case of complaints.
- · After skin contact: If skin irritation continues, consult a doctor.
- · After eye contact: Rinse opened eye for several minutes under running water.
- · After swallowing:

Call a doctor immediately.

Drink plenty of water and provide fresh air. Call for a doctor immediately.

A person vomiting while laying on their back should be turned onto their side.

Rinse out mouth and then drink plenty of water.

· 4.2 Most important symptoms and effects, both acute and delayed

Cyanides poisoning

Cyanosis

- · Information for doctor: Cyanides poisoning
- · 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:

CO2, 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.:

Hydrogen cyanide (HCN)

- · 5.3 Advice for firefighters
- · Protective equipment:

Mount respiratory protective device.



Wear self-contained respiratory protective device.

· Additional information

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

## SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

Use respiratory protective device against the effects of fumes/dust/aerosol.

Only handle and refill product in closed systems.

(Contd. on page 5)



Printing date: 12.11.2020 Version number 13 Revision: 12.11.2020

Trade name: Gold plating bath GP 204, 3 g Au/l Goldplattierbad GP 204, 3 g Au/l

(Contd. of page 4)

#### · 6.2 Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Dilute with plenty of water.

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).

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

Keep receptacles tightly sealed.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

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

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.

 $Observe\ of ficial\ regulations\ on\ storing\ packagings\ .$ 

Prevent any seepage into the ground.

· Information about storage in one common storage facility:

Do not store together with acids.

Store away from foodstuffs.

- · Further information about storage conditions: Keep container tightly sealed.
- · Storage class: 6.1 D
- · 7.3 Specific end use(s) No further relevant information available.

### SECTION 8: Exposure controls/personal protection

- · Additional information about design of technical facilities: No further data; see item 7.
- · 8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:		
CAS: 13967-50-5 Potassium dicyanoaurate		
	Long-term value: 5 mg/m³ as CN; Sk	
MAK (Germany)	Long-term value: 2E mg/m³ als CN	

#### Regulatory information

WEL (Great Britain): EH40/2020 MAK (Germany): MAK- und BAT-Liste

(Contd. on page 6)



Printing date: 12.11.2020 Version number 13 Revision: 12.11.2020

Trade name: Gold plating bath GP 204, 3 g Au/l Goldplattierbad GP 204, 3 g Au/l

(Contd. of page 5)

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

- · 8.2 Exposure controls
- · 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.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Do not inhale gases / fumes / aerosols.

According to EC Directive 89/686/EEC

#### · Respiratory protection:

Not necessary if room is well-ventilated.

*Use suitable respiratory protective device when high concentrations are present.* 

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

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: Combination filter B-P3

#### Protection of hands:

Acid resistant gloves

Check protective gloves prior to each use for their proper condition.



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.

### · Material of gloves

Chloroprene rubber, CR

Recommended thickness of the material:  $\geq 0.65$  mm

Nitrile rubber, NBR

Recommended thickness of the material:  $\geq 0.65$  mm

#### · Penetration time of glove material

The exact break trough 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

(Contd. on page 7)



Printing date: 12.11.2020 Version number 13 Revision: 12.11.2020

Trade name: Gold plating bath GP 204, 3 g Au/l Goldplattierbad GP 204, 3 g Au/l

(Contd. of page 6)

· Not suitable are gloves made of the following materials:

Leather gloves

Strong material gloves

· Eye protection:



Tightly sealed goggles

according to EN 166

· Body protection: Protective work clothing

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SECTION 9: Ph	vsical	and c	nemical	nroneri	705
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· 9.1 Information on basic physical and chemical properties

General Information

· Appearance:

Form: Fluid
Colour: Red-brown
Odour: Fruit-like
Odour threshold: Not determined.

• pH-value at 20°C (68°F): 4

· Change in condition

Melting point/freezing point: Undetermined.
Initial boiling point and boiling range: 100°C (212°F)

Flash point: Not applicable.Flammability (solid, gas): Not applicable.

• Decomposition temperature: Not determined.

· Auto-ignition temperature: Product is not selfigniting.

• Explosive properties: Product does not present an explosion hazard.

· Explosion limits:

Lower:Not determined.Upper:Not determined.

· Vapour pressure: Not determined.

• Density at 20°C (68°F): 1.08 g/cm³ (9.01 lbs/gal) • Relative density Not determined.

Vapour density
 Evaporation rate
 Not determined.
 Not determined.

· Solubility in / Miscibility with

water: Fully miscible.

· Partition coefficient: n-octanol/water: Not determined.

· Viscosity:

**Dynamic:** Not determined. **Kinematic:** Not determined.

(Contd. on page 8)



Printing date: 12.11.2020 Version number 13 Revision: 12.11.2020

Trade name: Gold plating bath GP 204, 3 g Au/l Goldplattierbad GP 204, 3 g Au/l

(Contd. of page 7)

· 9.2 Other information

No further relevant information available.

### 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

Contact with acids releases very toxic gases

Reacts with acids, alkalis and oxidising agents.

- · 10.4 Conditions to avoid No further relevant information available.
- · 10.5 Incompatible materials: Acids
- · 10.6 Hazardous decomposition products: Hydrogen cyanide (prussic acid)

## **SECTION 11: Toxicological information**

- · 11.1 Information on toxicological effects
- · Acute toxicity

Harmful if inhaled.

· LD/LC50	· LD/LC50 values relevant for classification:			
ATE (Acu	ATE (Acute Toxicity Estimates)			
Oral	LD50	6,576 mg/kg (Rat)		
Inhalative	LC50/4 h	11.3 mg/l		
CAS: 77-9	CAS: 77-92-9 citric acid			
Oral	LD50	6,730 mg/kg (rat)		
CAS: 1396	CAS: 13967-50-5 Potassium dicyanoaurate			
Oral	LD50	29 mg/kg (Rat)		
Inhalative	LC50/4 h	0.05  mg/l (ATE)		

- · Primary irritant effect:
- · Skin corrosion/irritation Based on available data, the classification criteria are not met.
- · Serious eye damage/irritation Based on available data, the classification criteria are not met.
- · Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
- · CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
- · Germ cell mutagenicity Based on available data, the classification criteria are not met.
- · Carcinogenicity

May cause cancer by inhalation.

- · Reproductive toxicity Based on available data, the classification criteria are not met.
- · STOT-single exposure Based on available data, the classification criteria are not met.
- · STOT-repeated exposure Based on available data, the classification criteria are not met.
- · Aspiration hazard Based on available data, the classification criteria are not met.

## 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.

(Contd. on page 9)



Printing date: 12.11.2020 Version number 13 Revision: 12.11.2020

Trade name: Gold plating bath GP 204, 3 g Au/l Goldplattierbad GP 204, 3 g Au/l

(Contd. of page 8)

- · Ecotoxical effects:
- · Remark: Harmful to fish
- · Additional ecological information:
- · General notes:

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Do not allow product to reach ground water, water course or sewage system.

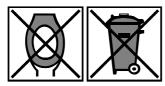
Danger to drinking water if even small quantities leak into the ground.

Harmful to aquatic organisms

- · 12.5 Results of PBT and vPvB assessment Not applicable.
- · **PBT:** Not applicable.
- · vPvB: Not applicable.
- · 12.6 Other adverse effects No further relevant information available.

## **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.

European waste catalogue

There are no uniform EC regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding laws and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste

11 00 00	WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS; NON-FERROUS HYDRO-METALLURGY
11 01 00	wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphating, alkaline degreasing, anodising)
11 01 98*	other wastes containing hazardous substances
HP6	Acute Toxicity
HP7	Carcinogenic
HP14	Ecotoxic

- · 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.

- GB



Printing date: 12.11.2020 Version number 13 Revision: 12.11.2020

Trade name: Gold plating bath GP 204, 3 g Au/l Goldplattierbad GP 204, 3 g Au/l

(Contd. of page 9)

· 14.1 UN-Number	
· ADR, IMDG, IATA	Void
· 14.2 UN proper shipping name · ADR, IMDG, IATA	Void
· 14.3 Transport hazard class(es)	
· ADR, ADN, IMDG, IATA	Void
· Class	v Olu
· 14.4 Packing group · ADR, IMDG, IATA	Void
· 14.5 Environmental hazards: · Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Transport in bulk according to Anno	ex II of
Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· IATA · Remarks:	
	24h emergency contact -
	(Dangerous goods emergency number)
	+49 172 739 6970
· UN "Model Regulation":	Void

## **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 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

· TSCA (Toxic Substances Control Act)				
CAS: 7732-18-5	water, distilled, conductivity or of similarpurity			
CAS: 77-92-9	citric acid			
CAS: 13967-50-5	Potassium dicyanoaurate			
· GADSL - Global Automotive Declarable Substance List				
CAS: 6147-53-1	Cobalt acetate cristaline 23/24 % Co	D(FI)		

- · Directive 2012/18/EU
- · Named dangerous substances ANNEX I None of the ingredients is listed.
- · REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

(Contd. on page 11)



Printing date: 12.11.2020 Version number 13 Revision: 12.11.2020

Trade name: Gold plating bath GP 204, 3 g Au/l Goldplattierbad GP 204, 3 g Au/l

(Contd. of page 10)

· DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II

None of the ingredients is listed.

- · National regulations:
- · Additional classification according to Decree on Hazardous Materials, Annex II:

Carcinogenic hazardous material group III (dangerous).

· Information about limitation of use:

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

Employment restrictions concerning juveniles must be observed.

Employment restrictions concerning pregnant and lactating women must be observed.

Employment restrictions concerning women of child-bearing age must be observed.

- · Waterhazard class: .
- · Other regulations, limitations and prohibitive regulations -
- · Substances of very high concern (SVHC) according to REACH, Article 57

CAS: 6147-53-1 | Cobalt acetate cristaline 23/24 % Co

· 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 saftey data sheet can revised according to legal guidelines.

Our current version for your reference is available on our website www.heimerle-meule.com

#### · Relevant phrases

H290 May be corrosive to metals.

H300 Fatal if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H330 Fatal if inhaled.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H341 Suspected of causing genetic defects.

H350i May cause cancer by inhalation.

H360F May damage fertility.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

#### Department issuing SDS:

Abteilung BASU - Bau/Arbeitssicherheit/Umwelt

Department BASU - Construction / Occupational Safety / Environment

sds@heimerle-meule.com

(Contd. on page 12)



Printing date: 12.11.2020 Version number 13 Revision: 12.11.2020

Trade name: Gold plating bath GP 204, 3 g Au/l Goldplattierbad GP 204, 3 g Au/l

(Contd. of page 11)

#### · Contact:

Herr Thomas Knuth

Knuth@heimerle-meule.com

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 européen sur le transport 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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Met. Corr.1: Corrosive to metals - Category 1

Acute Tox. 2: Acute toxicity - oral – Category 2

Acute Tox. 4: Acute toxicity - inhalation - Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation - Category 1

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Resp. Sens. 1: Respiratory sensitisation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

Muta. 2: Germ cell mutagenicity – Category 2

Carc. 1B: Carcinogenicity - Category 1B

Repr. 1B: Reproductive toxicity - Category 1B

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard - Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard - Category 1

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard - Category 3

\* \* Data compared to the previous version altered.

3B **-**