

Version number 12 (replaces version 11) Revision: 14.12.2022 Printing date: 14.12.2022

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

- · 1.1 Product identifier
- · Trade name: Pen gold bath 204-DS, 50 g Au/l Stiftgoldbad 204-DS, 50 g Au/l
- · Article number:

86908120 = 1.5g Au/30ml86908125 = 1.0g Au/20ml $81012909 = 50.0g \, Au/l$

- · 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/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-Informations-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 Antiveleni

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 Mürgistusteabekeskuse

National (24/7): 16662

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Trade name: Pen gold bath 204-DS, 50 g Au/l

Stiftgoldbad 204-DS, 50 g Au/l

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(+372) 7943 794

LETTLAND - LATVIA:

Valsts Toksikoloģijas centrs, Saindēšanās un zāļu informācijas centrs,

(24h) 112

(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



skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed. Acute Tox. 2 H330 Fatal if inhaled.



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

Eye Dam. 1 H318 Causes serious eye damage.



Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



Skin Sens. 1 H317 May cause an allergic skin reaction.

- · 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

GHS06

GHS09

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· Signal word Danger

Hazard-determining components of labelling:

Potassium tetracyanoaurate(III)

sulphuric acid

· Hazard statements

H301 Toxic if swallowed.

H330 Fatal if inhaled.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H411 Toxic to aquatic life with long lasting effects.

· Precautionary statements

P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.

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.

P362+P364 Take off contaminated clothing and wash it before reuse.

P405 Store locked up.

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

regulations.

· Additional information:

EUH032 Contact with acids liberates very toxic gas.

- · 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.

CAS: 14263-59-3	Potassium tetracyanoaurate(III)	8.6%
	Acute Tox. 2, H300; Acute Tox. 2, H330	
	♦ STOT RE 2, H373	
	Eye Dam. 1, H318	
	Aquatic Acute 1, H400; Aquatic Chronic 1, H410	
	Skin Irrit. 2, H315; Skin Sens. 1, H317	
	EUH032	
CAS: 77-92-9	citric acid; 1,2,3-Propanetricarboxylic acid, 2-hydroxy-; 2-	2.5-<7
EINECS: 201-069-1	Hydroxy-1,2,3-propanetricarboxylic acid; Citronensäure	
	♦ Eye Irrit. 2, H319; STOT SE 3, H335	
RTECS: GE 7350000		
CAS: 7664-93-9	sulphuric acid; sulfuric acid	<1%
EINECS: 231-639-5	Met. Corr. 1, H290; Skin Corr. 1A, H314	
Index number: 016-020-00-8	Specific concentration limits: Skin Corr. 1A; H314: $C \ge 15 \%$	
Reg.nr.: 01-2119453338-20	<i>Skin Irrit. 2; H315: 5 % ≤ C < 15 %</i>	
	<i>Eye Irrit. 2; H319: 5 % ≤ C < 15 %</i>	

· Additional information:

The potassium gold(III) cyanide - [KAu(CN)4] -, which is used at the preparation, has a very strong complexity and it is also very strong pH- buffered.

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

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:

Immediately remove any clothing soiled by the product.

Remove breathing equipment only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

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 or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

· After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

· After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.

· After swallowing:

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; call for medical help 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.

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

Cyanides poisoning

Cyanosis

· 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

Formation of toxic gases is possible during heating or in case of fire.

Hydrogen cyanide (HCN)

Sulphur dioxide (SO2)

- 5.3 Advice for firefighters
- · Protective equipment:



Wear self-contained respiratory protective device.

-GB

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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.

· 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.

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:

Do not store together with acids.

Store away from foodstuffs.

· Further information about storage conditions:

Keep container tightly sealed.



Store under lock and key and with access restricted to technical experts or their assistants only.

Store under lock and key and out of the reach of children.

· Storage class: 6.1 B

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· 7.3 Specific end use(s) No further relevant information available.

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/m³ *mist: defined as thoracic fraction			
IOELV (European Union)	Long-term value: 0.05 mg/m³			
1 ' ' ' '	Long-term value: 0.1 E mg/m³ 1(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.

Store protective clothing separately.

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:

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-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.

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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

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.

Nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.38 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 ≤ 3

· Not suitable are gloves made of the following materials:

Leather gloves

Strong material 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
Colour:
Odour:
Odourless
Odour threshold:
Melting point/freezing point:
Fluid
Light blue
Odourless
Not determined.
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)

· Viscosity:

· Kinematic viscosity Not determined. · Dynamic: Not determined.

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Solubility	
water:	Fully miscible.
Partition coefficient n-octanol/water (log value)	Not determined.
Vapour pressure:	Not determined.
Density and/or relative density	
Density:	Not determined.
Relative density	Not determined.
Vapour density	Not determined.
9.2 Other information	
Appearance:	
Form:	Fluid
Important information on protection of health an	d
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.
Information with regard to physical hazard classe	25
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

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)

GR.



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SECTION 11: Toxicological information

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

Toxic if swallowed.

Fatal if inhaled.

· LD/LC50 1	· LD/LC50 values relevant for classification:		
ATE (Acut	ATE (Acute Toxicity Estimates)		
Oral	LD50	58.1 mg/kg	
Inhalative	LC50/4 h	$0.58 \ mg/l$	
CAS: 1426	CAS: 14263-59-3 Potassium tetracyanoaurate(III)		
Oral	LD50	5 mg/kg (ATE)	
Inhalative	LC50/4 h	0.05 mg/l (ATE)	
CAS: 77-92-9 citric acid			
Oral	LD50	6,730 mg/kg (rat)	
CI.	Chin compains finished in Causes around this house and and damage		

- · Skin corrosion/irritation Causes severe skin burns and eye damage.
- · Serious eye damage/irritation Causes serious eye damage.
- · Respiratory or skin sensitisation May cause an allergic skin reaction.
- · 11.2 Information on other hazards
- · Endocrine disrupting properties

None of the ingredients is listed.

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
- · Remark: Toxic for fish
- · Additional ecological information:
- · General notes:

Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

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

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

GB-



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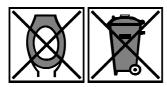
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SECTION 13: Disposal considerations

- · 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

· 14.1 UN number or ID number · ADR, IMDG, IATA	UN2922
· 14.2 UN proper shipping name · ADR	UN2922 CORROSIVE LIQUID, TOXIC, N.O.S. (Potassium tetracyanoaurate(III), SULPHURIC ACID), ENVIRONMENTALLY HAZARDOUS
· IMDG, IATA	CORROSIVE LIQUID, TOXIC, N.O.S. (Potassium tetracyanoaurate(III), SULPHURIC ACID)

- · 14.3 Transport hazard class(es)
- $\cdot ADR$





· Class· Label8 Corrosive substances.8+6.1

· IMDG



· Class 8 Corrosive substances.

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Label	8/6.1
IATA	
Class Label	8 Corrosive substances. 8 (6.1)
14.4 Packing group ADR, IMDG, IATA	II
14.5 Environmental hazards: Marine pollutant: Special marking (ADR):	Yes Symbol (fish and tree)
14.6 Special precautions for user Hazard identification number (Kemler code): EMS Number: Stowage Category Stowage Code	Warning: Corrosive substances. 86 F-A,S-B B SW2 Clear of living quarters.
14.7 Maritime transport in bulk according to IM instruments	Not applicable.
Transport/Additional information:	
ADR Limited quantities (LQ) Excepted quantities (EQ) Transport category	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml 2
IMDG Limited quantities (LQ) Excepted quantities (EQ)	1L 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 2922 CORROSIVE LIQUID, TOXIC, N.O (POTASSIUM TETRACYANOAURATE(III SULPHURIC ACID), 8 (6.1), II, ENVIRONMENTALI HAZARDOUS

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 12)



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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.

- · Directive 2012/18/EU
- · Named dangerous substances ANNEX I None of the ingredients is listed.
- · Seveso category

H2 ACUTE TOXIC

E2 Hazardous to the Aquatic Environment

- Qualifying quantity (tonnes) for the application of lower-tier requirements 50 t
- · Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t
- · 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 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.

H314 Causes severe skin burns and eye damage.

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.

H335 May cause respiratory irritation.

H373 May cause damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

EUH032 Contact with acids liberates very toxic gas.

Department issuing SDS:

Abteilung BASU - Bau/Arbeitssicherheit/Umwelt

Department BASU - Construction / Occupational Safety / Environment

sds@heimerle-meule.com

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· Contact:

Herr Thomas Knuth

thomas.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 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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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

Acute Tox. 2: Acute toxicity - Category 2

Acute Tox. 3: Acute toxicity - Category 3

Skin Corr. 1A: Skin corrosion/irritation - Category 1A

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

Skin Sens. 1: Skin sensitisation – Category 1

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

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 2: Hazardous to the aquatic environment - long-term aquatic hazard - Category 2

* Data compared to the previous version altered.

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