

**Coloured Gold Solder cdf [Ag10Au90Cu12In10Zn10]**

Version 3.4

DE

SDS Number: 300000001212

Revision Date: 21.07.2018

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

Product identifier : Coloured Gold Solder cdf [Ag10Au90Cu12In10Zn10]  
Trade name : 750 L3 cdf; 750 L2 cdf; 750 L1 cdf; 750 L0 cdf; 585 L3 cdf;  
585 L2 cdf; 585 L1 cdf; 417 L1 cdf; 375 L1 cdf; 375 WL2 cdf  
Product code : 300000001212

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

Use of the Sub- : Industrial use  
stance/Mixture : brazing

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

Company : Allgemeine Gold- und Silberscheideanstalt  
Kanzlerstrasse 17  
75175 Pforzheim  
Germany

E-mail address of person : info.ipds@umicore.com  
responsible for the SDS

**1.4 Emergency telephone number**

**Poison Center**

Telephone : +49 30 192 40

Hours of operation : 24HRS

**Supplier**

Emergency telephone num- : For transport in Europe, Central- and South America, Israel  
ber and Africa (Non-Arabic speaking countries): +32 3 213 15 70  
For transport in the Middle East (Israel excluded) & Arabic  
speaking Africa: +32 3 213 33 79  
For transport in the USA and Canada: 1-877 986 4267  
For transport in Asian and the Pacific (China excluded): +65  
62 64 78 36  
For transport in China: (+86) 400 88 71 190

Hours of operation : This telephone number is available 24 hours per day, 7 days  
per week.

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**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

**Classification (REGULATION (EC) No 1272/2008)**

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Specific target organ toxicity - repeated exposure, Category 1

H372: Causes damage to organs through prolonged or repeated exposure.

Chronic aquatic toxicity, Category 3

H412: Harmful to aquatic life with long lasting effects.

### 2.2 Label elements

#### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements : H372 Causes damage to organs through prolonged or repeated exposure.  
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements :

#### Prevention:

- P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P273 Avoid release to the environment.

#### Response:

- P314 Get medical advice/ attention if you feel unwell.

#### Disposal:

- P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:  
indium

#### Additional Labelling

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 100 %

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Hazardous components

Chemical name	CAS-No. EC-No.	Classification	Concentration (% w/w)
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	Index-No. Registration number		
indium	7440-74-6 231-180-0 01-2120756870-48	STOT RE 1; H372 Aquatic Chronic 2; H411	<= 15
Substances with a workplace exposure limit :			
silver	7440-22-4 01-2119555669-21		<= 15

For explanation of abbreviations see section 16.

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

- General advice : Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.
- If inhaled : Move to fresh air in case of accidental inhalation of dust or  
fumes from overheating or combustion.
- In case of skin contact : If on clothes, remove clothes.  
Cover wound with sterile dressing.
- In case of eye contact : Remove contact lenses.  
Flush eyes with water as a precaution.  
Protect unharmed eye.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.

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

None known.

**4.3 Indication of any immediate medical attention and special treatment needed**

**SECTION 5: Firefighting measures**

**5.1 Extinguishing media**

- Suitable extinguishing media : Not combustible.
- Unsuitable extinguishing media : High volume water jet

**5.2 Special hazards arising from the substance or mixture**

- Specific hazards during fire-fighting : Do not allow run-off from fire fighting to enter drains or water courses.

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Hazardous combustion products : Metal oxides

### 5.3 Advice for firefighters

Special protective equipment for firefighters : No special protective equipment required.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.

### 6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.

### 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Pick up and transfer to properly labelled containers.

### 6.4 Reference to other sections

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : General industrial hygiene practice. Wash hands before breaks and at the end of workday.

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place.

Advice on common storage : No materials to be especially mentioned.

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Storage class (TRGS 510) : 6.1D, Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

Further information on storage stability : Keep in a dry place. No decomposition if stored and applied as directed.

### 7.3 Specific end use(s)

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
silver	7440-22-4	TWA	0,01 mg/m <sup>3</sup> (Silver)	2006/15/EC
Further information	Indicative			

#### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
copper	Workers	Skin contact	Acute systemic effects	273 mg/kg
		Inhalation	Acute systemic effects	18,2 mg/m <sup>3</sup>
	Consumers	Skin contact	Long-term systemic effects	137 mg/kg
		Skin contact	Acute systemic effects	273 mg/kg
		Inhalation	Acute systemic effects	18,2 mg/m <sup>3</sup>
	Consumers	Ingestion	Acute systemic effects	0,16 mg/kg
		Ingestion	Long-term systemic effects	0,16 mg/kg
silver	Workers	Inhalation	Long-term systemic effects	0,1 mg/m <sup>3</sup>
		Inhalation	Long-term systemic effects	0,04 mg/m <sup>3</sup>
	Consumers	Ingestion	Long-term systemic effects	1,2 mg/kg
zinc	Workers	Inhalation	Long-term systemic effects	5 mg/m <sup>3</sup>
		Skin contact	Long-term systemic effects	83 mg/kg
	Consumers	Inhalation	Long-term systemic effects	2,5 mg/m <sup>3</sup>
		Ingestion	Long-term systemic effects	0,83 mg/kg
		Skin contact	Long-term systemic effects	83 mg/kg

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			effects	
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### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
copper	Fresh water	0,0078 mg/l
	Marine water	0,0052 mg/l
	Fresh water sediment	87 mg/kg dry weight (d.w.)
	Soil	65,5 mg/kg dry weight (d.w.)
	Sewage treatment plant	0,23 mg/l
silver	Fresh water	0,00004 mg/l
	Marine water	0,00086 mg/l
	Fresh water sediment	438 mg/kg dry weight (d.w.)
	Marine sediment	438 mg/kg dry weight (d.w.)
	Soil	1,41 mg/kg dry weight (d.w.)
	Sewage treatment plant	0,025 mg/l
zinc	Fresh water	0,0206 mg/l
	Marine water	0,0061 mg/l
	Sewage treatment plant	0,052 mg/l
	Fresh water sediment	117,8
	Marine sediment	56,5
	Soil	35,6

## 8.2 Exposure controls

### Personal protective equipment

Eye protection : Safety glasses with side-shields conforming to EN166

Hand protection  
Material : Leather gloves

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance : massive form

Colour : yellow

Odour : odourless

Melting point/range : 775 - 835 °C

Flash point : Not applicable

Flammability (solid, gas) : The product is not flammable.

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Relative density : 14,7 - 15,1  
Density : 14,7 - 15,1 g/cm<sup>3</sup>  
Solubility(ies)  
Water solubility : insoluble

**9.2 Other information**

No data available

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**SECTION 10: Stability and reactivity**

**10.1 Reactivity**

No dangerous reaction known under conditions of normal use.

**10.2 Chemical stability**

No decomposition if stored and applied as directed.

**10.3 Possibility of hazardous reactions**

Hazardous reactions : Stable under recommended storage conditions.

**10.4 Conditions to avoid**

Conditions to avoid : None known.

**10.5 Incompatible materials**

Materials to avoid : None known.

**10.6 Hazardous decomposition products**

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**SECTION 11: Toxicological information**

**11.1 Information on toxicological effects**

**Acute toxicity**

**Product:**

Acute dermal toxicity : Remarks: No data available

**Components:**

**indium:**

Acute oral toxicity : Remarks: No data available

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: No data available

**silver:**

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- Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg  
Method: OECD Test Guideline 401  
Assessment: The substance or mixture has no acute oral toxicity
- LD50 (Rat, female): > 2.000 mg/kg  
Method: OECD Test Guideline 423
- LD50 (Mouse): > 5.000 mg/kg  
Method: OECD Test Guideline 425
- Acute inhalation toxicity : LC50 (Rat): > 5,16 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 436  
Assessment: The substance or mixture has no acute inhalation toxicity
- Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

**Skin corrosion/irritation**

**Product:**

Remarks: No data available

**Components:**

**silver:**

Species: Rabbit  
Exposure time: 72 h  
Method: OECD Test Guideline 404  
Result: No skin irritation

**Serious eye damage/eye irritation**

**Product:**

Remarks: No data available

**Components:**

**silver:**

Species: Guinea pig  
Exposure time: 72 h  
Method: OECD Test Guideline 405  
Result: No eye irritation

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**Respiratory or skin sensitisation**

**Product:**

Remarks: No data available

**Components:**

**silver:**

Exposure routes: Skin contact

Species: Guinea pig

Method: OPPTS 870.2600

Result: Does not cause skin sensitisation.

Remarks: Based on read across from structural related substance

Exposure routes: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406

Result: Does not cause skin sensitisation.

Remarks: Based on read across from structural related substance

**Germ cell mutagenicity**

**Product:**

Genotoxicity in vitro : Remarks: No data available

**Components:**

**silver:**

Genotoxicity in vitro : Test Type: Ames test  
Test system: Bacteria  
Method: OECD Test Guideline 471  
Result: negative

Test system: mammalian cells  
Method: OECD Test Guideline 476  
Result: positive  
Remarks: Based on read across from structural related substance

Test Type: Micronucleus test  
Test system: mammalian cells  
Method: OECD Test Guideline 487  
Result: negative  
Remarks: Based on read across from structural related substance

Genotoxicity in vivo : Test Type: Micronucleus test  
Species: Mammalian-Animal  
Method: OECD Test Guideline 474  
Result: negative

Germ cell mutagenicity- As- : Overall, there is no consistent evidence of induction of genetic

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assessment

toxicity with relevance to humans.

**Carcinogenicity**

**Product:**

Remarks: No data available

**Reproductive toxicity**

**Product:**

Effects on fertility : Remarks: No data available

**Components:**

**silver:**

Effects on fertility : Species: Rat, male and female  
Application Route: Oral  
Dose: 62,5; 125, 250 milligram per kilogram  
Duration of Single Treatment: 28 days  
General Toxicity - Parent: NOAEL: > 250 mg/kg body weight  
General Toxicity F1: NOAEL: > 250 mg/kg body weight  
Method: OECD Test Guideline 422  
Result: No effects on fertility and early embryonic development were detected.  
GLP: yes

Effects on foetal development : Species: Rat  
Strain: Sprague-Dawley  
Application Route: Oral  
Dose: 6,5; 19,4; 64,6 milligram per kilogram  
General Toxicity Maternal: LOAEL: 19,4 mg/kg body weight  
Developmental Toxicity: NOAEL: > 64,6 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects, Maternal toxicity  
GLP: yes  
Remarks: unit expressed as mg metal/kg  
Based on read across from structural related substance

Species: Rat  
Strain: Sprague-Dawley  
Application Route: Oral  
Dose: 6,5; 19,4; 64,6 milligram per kilogram  
General Toxicity Maternal: NOAEL: 6,5 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects  
GLP: yes  
Remarks: unit expressed as mg metal/kg  
Based on read across from structural related substance

**STOT - single exposure**

**Product:**

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Remarks: No data available

**STOT - repeated exposure**

**Product:**

Remarks: No data available

**Components:**

**indium:**

Assessment: Causes damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity**

**Components:**

**silver:**

Species: Rat  
NOAEL: 30 mg/kg  
LOAEL: 300 mg/kg  
Application Route: Oral  
Exposure time: 28 d  
Dose: 30; 300; 1000  
Method: OECD Test Guideline 407

Species: Rat  
NOAEL: 30 mg/kg  
LOAEL: 125 mg/kg  
Application Route: Oral  
Exposure time: 90 d  
Number of exposures: 1/d  
Dose: 30; 125; 500  
Method: OECD Test Guideline 408

Species: Rat, male and female  
NOAEL: 133  $\mu\text{g}/\text{m}^3$   
LOAEL: 515  $\mu\text{g}/\text{m}^3$   
Application Route: inhalation (dust/mist/fume)  
Exposure time: 6 h/d 90 d  
Number of exposures: 5/7 d  
Method: OECD Test Guideline 413

Species: Rat  
NOAEL: 9 mg/kg  
Application Route: Oral  
Exposure time: 28 d  
Dose: 2,25; 4,5; 9

**Further information**

**Product:**

Remarks: No data available

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**SECTION 12: Ecological information**

**12.1 Toxicity**

**Product:**

**Components:**

**indium:**

**Ecotoxicology Assessment**

Acute aquatic toxicity : No data available

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

**silver:**

Toxicity to fish : Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates : Remarks: No toxicity at the limit of solubility

Toxicity to fish (Chronic toxicity) : Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: No toxicity at the limit of solubility

Toxicity to soil dwelling organisms : EC10: 5,3 mg/kg  
Exposure time: 28 d  
Species: Eisenia fetida (earthworms)

NOEC: 22,5 mg/kg  
Exposure time: 28 d  
Species: Eisenia fetida (earthworms)

Plant toxicity : 0,13 mg/kg  
Test period: 17 d  
Species: Lactuca sativa (lettuce)

Sediment toxicity : NOEC: 12 mg/kg  
Duration: 10 d  
Species: Hyalella azteca  
Remarks: Fresh water

**12.2 Persistence and degradability**

No data available

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### 12.3 Bioaccumulative potential

#### Components:

##### silver:

Bioaccumulation : Bioconcentration factor (BCF): 70

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

#### Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

### 12.6 Other adverse effects

#### Product:

Additional ecological information : Harmful to aquatic life with long lasting effects.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Dispose of in accordance with the European Directives on waste and hazardous waste.  
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.  
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

The product should not be allowed to enter drains, water courses or the soil.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Send to a licensed waste management company.  
Dispose of as hazardous waste in compliance with local and national regulations.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.

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## SECTION 14: Transport information

### 14.1 UN number

Not regulated as a dangerous good

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**14.2 UN proper shipping name**

Not regulated as a dangerous good

**14.3 Transport hazard class(es)**

Not regulated as a dangerous good

**14.4 Packing group**

Not regulated as a dangerous good

**14.5 Environmental hazards**

Not regulated as a dangerous good

**14.6 Special precautions for user**

Not applicable

**14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable for product as supplied.

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**SECTION 15: Regulatory information**

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.  
Not applicable

Water contaminating class (Germany) : nwg not water endangering  
Classification according to AwSV, Annex 1 (2.2)

TA Luft List (Germany) : Total dust:  
Not applicable  
Inorganic substances in powdered form:  
portion Class 3: 12 %

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Inorganic substances in vapour or gaseous form:

Not applicable

Organic Substances:

Not applicable

Carcinogenic substances:

Not applicable

Mutagenic:

Not applicable

Toxic to reproduction:

Not applicable

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)  
Not applicable

**Other regulations:**

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

**The components of this product are reported in the following inventories:**

CH INV : Not in compliance with the inventory

DSL : This product contains the following components that are not on the Canadian DSL nor NDSL.

AICS : Not in compliance with the inventory

NZIoC : Not in compliance with the inventory

ENCS : Not in compliance with the inventory

ISHL : Not in compliance with the inventory

KECI : Not in compliance with the inventory

PICCS : Not in compliance with the inventory

IECSC : Not in compliance with the inventory

TCSI : Not in compliance with the inventory

TSCA : Not On TSCA Inventory

**15.2 Chemical safety assessment**

**SECTION 16: Other information**

**Full text of H-Statements**

H372 : Causes damage to organs through prolonged or repeated exposure.

H411 : Toxic to aquatic life with long lasting effects.

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**Full text of other abbreviations**

Aquatic Chronic	:	Chronic aquatic toxicity
STOT RE	:	Specific target organ toxicity - repeated exposure
2006/15/EC	:	Europe. Indicative occupational exposure limit values
2006/15/EC / TWA	:	Limit Value - eight hours

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

**Further information**

**Classification of the mixture:**

STOT RE 1	H372
Aquatic Chronic 3	H412

**Classification procedure:**

Calculation method
Calculation method

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

DE / EN