

Safety Data Sheet



GFRED - READY TO USE FLASH PLATING BATH 0.8G/L RED GOLD COLOR

Safety Data Sheet dated 6/21/2022 version 4

Compliant with regulation (CE) n. 1907/2006 REACH, Annex II, and subsequent amendments introduced by Commission Regulation (EU) no. 2015/830

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

1.1. Product identifier

Mixture identification:

Trade name: GFRED - READY TO USE FLASH PLATING BATH 0.8G/L RED GOLD COLOR

Trade code: GFRED

Product type and use: Gold flash plating solution

Registration Number N/A

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

Recommended use: For industrial use; For jewelry industry; For electroplating industry

Uses advised against: N.A.

1.3. Details of the supplier of the safety data sheet

Company: LEGOR GROUP S.p.A.

Via del Lavoro, 1

36050 Bressanvido (VI)

Italy

Tel.: +39.0444.467911

Fax.: +39.0444. 660677

Competent person responsible for the safety data sheet: info@legor.com

1.4. Emergency telephone number

CENTRO ANTIVELENI OSPEDALE NIGUARDA CA' GRANDA

P.ZZA OSPEDALE MAGGIORE, 3 MILANO

Tel 02 66101029 Fax 02 64442768

AZIENDA OSPEDALIERA PAPA GIOVANNI XXIII PIAZZA OMS, 1 24127 BERGAMO

Tel 800 883300

CENTRO ANTIVELENI AZIENDA OSPEDALIERA S.G.BATTISTA - MOLINETTE DI TORINO

CORSO A.M. DOGLIOTTI, 14 TORINO

Tel 011 6637637 Fax 011 6672149

CEN.NAZ.INFORM.TOSSIC.FOND. S.MAUGERI CLINICA DEL LAVORO E DELLA RIABILITAZIONE

VIA A.FERRATA, 8 PAVIA

Tel A 0382 24444 Fax 02 64442769

SERV. ANTIV. - CEN.INTERDIPARTIMENTALE DI RICERCA SULLE INTOSSICAZIONI ACUTE DIP.DI FARMAC. E.MENEGHETTI UNIVERSITÀ DEGLI STUDI DI PADOVA

LARGO E.MENEGHETTI, 2 PADOVA

Tel 049 8275078 Fax 049 8270593

SERVIZIO ANTIVELENI SERV.PR.SOCC., ACCETT. E OSS. ISTITUTO SCIENTIFICO G. GASLINI

LARGO G. GASLINI, 5 GENOVA

Tel 010 5636245 Fax 010 3760873

CENTRO ANTIVELENI - U.O. TOSSICOLOGIA MEDICA AZIENZA OSPEDALIERA CAREGGI

VIALE G.B. MORGAGNI, 65 FIRENZE
Tel 055 4277238 Fax 055 4277925

CENTRO ANTIVELENI POLICLINICO A.GEMELLI - UNIVERSITA' CATTOLICA DEL SACRO CUORE
LARGO F.VITO, 1 ROMA
Tel 06 3054343 Fax 06 3051343

CENTRO ANTIVELENI - ISTITUTO DI ANESTESIOLOGIA E RIANIMAZIONE UNIVERSITÀ DEGLI STUDI DI ROMA LA SAPIENZA
VIALE DEL POLICLINICO, 155 ROMA
Tel 06 49970698 Fax 06 4461967

AZ. OSP. UNIV. FOGGIA
V.LE LUIGI PINTO, 1 71122 FOGGIA
Tel 0881 732326

CENTRO ANTIVELENI AZIENDA OSPEDALIERA A. CARDARELLI
VIA CARDARELLI, 9 NAPOLI
Tel 081 7472870 Fax 081 7472880

SECTION 2: Hazards identification



2.1. Classification of the substance or mixture

Regulation (EC) n. 1272/2008 (CLP)

Acute Tox. 4 Harmful if swallowed.
Aquatic Chronic 3 Harmful to aquatic life with long lasting effects.
Adverse physicochemical, human health and environmental effects:
No other hazards

2.2. Label elements

Regulation (EC) No 1272/2008 (CLP):

Hazard pictograms and Signal Word



Warning

Hazard statements

H302 Harmful if swallowed.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P301+P312 IF SWALLOWED: Call a POISON CENTRE/doctor/... if you feel unwell.
P330 Rinse mouth.
P501 Dispose of contents/container in accordance with applicable regulations.

Contains

Potassium cyanide
Potassium dicyanoaurate (I)
Potassium dicyanoaurate (I) May produce an allergic reaction.
Copper iodide May produce an allergic reaction.

Special provisions according to Annex XVII of REACH and subsequent amendments:

None.

2.3. Other hazards

No PBT Ingredients are present

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: GFRED - READY TO USE FLASH PLATING BATH 0.8G/L RED GOLD COLOR

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Numb.	Classification	Registration Number
< 5%	Potassium Pyrophosphate	CAS:7320-34-5 EC:230-785-7	Eye Irrit. 2, H319	01-2119489369-18-0003
< 5%	Potassium cyanide	CAS:151-50-8	Met. Corr. 1, H290; Acute Tox. 1, H310; Acute Tox. 1, H330; Acute Tox. 1, H300; STOT RE 1, H372; Aquatic Acute 1, H400; Aquatic Chronic 1, H410, M:10, EUH032	01-2119486407-29-0000
< 5%	Potassium dicyanoaurate (I)	CAS:13967-50-5 EC:237-748-4	Met. Corr. 1, H290; Eye Dam. 1, H318; Skin Irrit. 2, H315; Aquatic Chronic 1, H410; Acute Tox. 2, H300; Acute Tox. 2, H330; Skin Sens. 1, H317; Aquatic Acute 1, H400, M-Acute:1, M-Chronic:1, EUH032	01-2120130777-52-0005
< 5%	Copper iodide	CAS:7681-65-4	Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Dam. 1, H318; STOT RE 1, H372; Aquatic Acute 1, H400; Aquatic Chronic 2, H411; Skin Sens. 1A, H317, M-Chronic:1, M-Acute:10	

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediately and dispose off safely.

After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

Wash immediately with water.

In case of Ingestion:

Give nothing to eat or drink.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

N.A.

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO₂).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

For emergency responders:

Wear personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Suitable material for taking up: absorbing material, organic, sand

6.3. Methods and material for containment and cleaning up

Suitable material for taking up: absorbing material, organic, sand

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

	OEL Type	Country	Ceiling	Long Term mg/m3	Long Term ppm	Short Term mg/m3	Short Term ppm	Notes
Potassium cyanide CAS: 151-50-8	EU			1		5		Skin
	ACGIH		C			5		Skin - URT irr, headache, thyroid eff
Potassium dicyanoaurate (I) CAS: 13967-50-5	IOELV		C			5.000000		EU (Dir 2017/164) for HC
	IOELV				9.000		4.500	EU (Dir 2017/164) for HC
Copper iodide CAS: 7681-65-4	NATION AL	SWITZERLAN D		0.1		0.2		

Predicted No Effect Concentration (PNEC) values

	PNEC Limit	Exposure Route	Exposure Frequency	Remark
Potassium Pyrophosphate CAS: 7320-34-5	50 ug/l	Fresh Water		
	5 ug/l	Marine water		
	75.4 mg/l	STP		
Potassium dicyanoaurate (I) CAS: 13967-50-5	0.0002 mg/l	Fresh Water		
	0.002 mg/l	Intermittent releases (fresh water)		
	0.00002 mg/l	Marine water		
	6 mg/l	STP		
	0.33 mg/kg	Freshwater sediments		
	0.033 mg/kg	Marine water sediments		
	0.067 mg/kg	Terrestrial compartment		

Derived No Effect Level (DNEL) values

	Worker Industrial	Worker Professional	Consumer	Exposure Route	Exposure Frequency	Remark
Potassium Pyrophosphate CAS: 7320-34-5	225 mg/m3		10.87 mg/m3	Human Inhalation		Long Term, systemic effects
Potassium dicyanoaurate (I) CAS: 13967-50-5		0.071 mg/m3		Human Inhalation		Long Term, systemic effects
		100 µg/kg bw/day		Human Dermal		Long Term, systemic effects

8.2. Exposure controls

Eye protection:

Not needed for normal use. Anyway, operate according good working practices.

Protection for skin:

No special precaution must be adopted for normal use.

Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

Respiratory protection:

N.A.

Thermal Hazards:

N.A.

Environmental exposure controls:

N.A.

Hygienic and Technical measures

N.A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State: N.A.

Appearance and colour: Colourless liquid

Odour: Typical

Odour threshold: N.A.

pH: 10,50

Melting point / freezing point: N.A.

Initial boiling point and boiling range: N.A.
Flash point: > 93°C
Evaporation rate: N.A.
Upper/lower flammability or explosive limits: N.A.
Vapour density: n/a
Vapour pressure: N.A.
Relative density: N.A.
Solubility in water: Total
Solubility in oil: N.A.
Partition coefficient (n-octanol/water): N.A.
Auto-ignition temperature: N.A.
Decomposition temperature: N.A.
Viscosity: N.A.
Explosive properties: n/a
Oxidizing properties: n/a
Solid/gas flammability: n/a

9.2. Other information

VOC N.A.
Substance Groups relevant properties N.A.
Miscibility: N.A.
Conductivity: N.A.

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Data not available.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

None in particular.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological Information of the Preparation

a) acute toxicity	The product is classified: Acute Tox. 4(H302)
b) skin corrosion/irritation	Not classified Based on available data, the classification criteria are not met
c) serious eye damage/irritation	Not classified Based on available data, the classification criteria are not met
d) respiratory or skin sensitisation	Not classified Based on available data, the classification criteria are not met
e) germ cell mutagenicity	Not classified Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified Based on available data, the classification criteria are not met
g) reproductive toxicity	Not classified Based on available data, the classification criteria are not met
h) STOT-single exposure	Not classified Based on available data, the classification criteria are not met
i) STOT-repeated exposure	Not classified Based on available data, the classification criteria are not met
j) aspiration hazard	Not classified

Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

Potassium Pyrophosphate	a) acute toxicity	LD50 Oral Rat = 2000 mg/kg LD50 Skin Rabbit > 4640 mg/kg
Potassium cyanide	a) acute toxicity	LD50 Oral Rat = 7.49 mg/kg LC50 Inhalation Rat = 63 Ppm 1h LD50 Skin Rabbit = 11.3 mg/kg
Potassium dicyanoaurate (I)	a) acute toxicity	LD50 Oral Rat = 29.2 LD50 Skin Rat > 2000
Copper iodide	a) acute toxicity	LD50 Oral = 300 mg/kg LD50 Skin > 2000 mg/kg

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

Eco-Toxicological Information:

Harmful to aquatic life with long lasting effects.

List of Eco-Toxicological properties of the product

The product is classified: Aquatic Chronic 3(H412)

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
Potassium Pyrophosphate	CAS: 7320-34-5 - EINECS: 230-785-7	a) Aquatic acute toxicity : LC50 Fish > 100 mg/l 96h
Potassium cyanide	CAS: 151-50-8	a) Aquatic acute toxicity : LC50 Fish = 0.045 mg/l 96 a) Aquatic acute toxicity : EC50 Daphnia = 0.083 mg/l 48 a) Aquatic acute toxicity : EC10 Algae = 0.158 mg/l 72 a) Aquatic acute toxicity : EC50 Algae = 0.331 mg/l 72
Potassium dicyanoaurate (I)	CAS: 13967-50-5 - EINECS: 237-748-4	a) Aquatic acute toxicity : LC50 Fish = 5.7 mg/l 96h a) Aquatic acute toxicity : EC50 Shellfish Daphnia Magna > 0.2 mg/l 48h a) Aquatic acute toxicity : EC50 Algae = 30 mg/l 72h a) Aquatic acute toxicity : EC10 Algae = 6.4 mg/l 72h
Copper iodide	CAS: 7681-65-4	a) Aquatic acute toxicity : LC50 Oncorhynchus mykiss = 1.67 mg/l 96 a) Aquatic acute toxicity : EC50 Daphnia magna = 0.59 mg/l 48 a) Aquatic acute toxicity : EC50 Algae = 0.13 mg/l 72

12.2. Persistence and degradability

Component	Persistence/Degradability:	Value	Notes:
Potassium Pyrophosphate	Solubility in water	10000	mg/l
Potassium dicyanoaurate (I)	Solubility in water	143000	mg/l 000

12.3. Bioaccumulative potential

N.A.

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

No PBT Ingredients are present

12.6. Other adverse effects

N.A.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

14.1. UN number

N/A

14.2. UN proper shipping name

ADR-Shipping Name: N/A

IATA-Technical name: N/A

IMDG-Technical name: N/A

14.3. Transport hazard class(es)

ADR-Class: N/A

IATA-Class: N/A

IMDG-Class: N/A

14.4. Packing group

ADR-Packing Group: N/A

IATA-Packing group: N/A

IMDG-Packing group: N/A

14.5. Environmental hazards

Toxic ingredients quantity: 0,00

Very toxic ingredients quantity: 0,00

No

Environmental Pollutant: No

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: N/A

ADR - Hazard identification number: N/A

ADR-Special Provisions: N/A

ADR-Transport category (Tunnel restriction code): N/A

Air (IATA):

IATA-Passenger Aircraft: N/A

IATA-Cargo Aircraft: N/A

IATA-Label: N/A

IATA-Subsidiary hazards: N/A

IATA-Erg: N/A

IATA-Special Provisions: N/A

Sea (IMDG):

IMDG-Stowage Code: N/A

IMDG-Stowage Note: N/A

IMDG-Subsidiary hazards: N/A

IMDG-Special Provisions: N/A

IMDG-Page: N/A

IMDG-Label: N/A

IMDG-EMS: N/A

IMDG-MFAG: N/A

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

N.A.

SECTION 15: Regulatory information

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

Dir. 98/24/EC (Risks related to chemical agents at work)

Dir. 2000/39/EC (Occupational exposure limit values)

Regulation (EC) n. 1907/2006 (REACH)

Regulation (EC) n. 1272/2008 (CLP)

Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013

Regulation (EU) n. 286/2011 (ATP 2 CLP)
 Regulation (EU) n. 618/2012 (ATP 3 CLP)
 Regulation (EU) n. 487/2013 (ATP 4 CLP)
 Regulation (EU) n. 944/2013 (ATP 5 CLP)
 Regulation (EU) n. 605/2014 (ATP 6 CLP)
 Regulation (EU) n. 2015/1221 (ATP 7 CLP)
 Regulation (EU) n. 2016/918 (ATP 8 CLP)
 Regulation (EU) n. 2016/1179 (ATP 9 CLP)
 Regulation (EU) n. 2017/776 (ATP 10 CLP)
 Regulation (EU) n. 2018/669 (ATP 11 CLP)
 Regulation (EU) n. 2018/1480 (ATP 13 CLP)
 Regulation (EU) n. 2019/521 (ATP 12 CLP)
 Regulation (EU) n. 2020/217 (ATP 14 CLP)
 Regulation (EU) n. 2020/1182 (ATP 15 CLP)
 Regulation (EU) n. 2021/643 (ATP 16 CLP)
 Regulation (EU) 2015/830

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product: 3

Restrictions related to the substances contained: 75

Provisions related to directive EU 2012/18 (Seveso III):

N.A.

Regulation (EU) No 649/2012 (PIC regulation)

No substances listed

German Water Hazard Class.

Class 3: extremely hazardous.

SVHC Substances:

No data available

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Code	Description
EUH032	Contact with acids liberates very toxic gas.
H290	May be corrosive to metals.
H300	Fatal if swallowed.
H302	Harmful if swallowed.
H310	Fatal in contact with skin.
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.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
2.16/1	Met. Corr. 1	Substance or mixture corrosive to metals, Category 1
3.1/1/Dermal	Acute Tox. 1	Acute toxicity (dermal), Category 1
3.1/1/Inhal	Acute Tox. 1	Acute toxicity (inhalation), Category 1
3.1/1/Oral	Acute Tox. 1	Acute toxicity (oral), Category 1
3.1/2/Inhal	Acute Tox. 2	Acute toxicity (inhalation), Category 2
3.1/2/Oral	Acute Tox. 2	Acute toxicity (oral), Category 2

3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/1	Eye Dam. 1	Serious eye damage, Category 1
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.4.2/1A	Skin Sens. 1A	Skin Sensitisation, Category 1A
3.9/1	STOT RE 1	Specific target organ toxicity — repeated exposure, Category 1
4.1/A1	Aquatic Acute 1	Acute aquatic hazard, category 1
4.1/C1	Aquatic Chronic 1	Chronic (long term) aquatic hazard, category 1
4.1/C2	Aquatic Chronic 2	Chronic (long term) aquatic hazard, category 2
4.1/C3	Aquatic Chronic 3	Chronic (long term) aquatic hazard, category 3

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008 Classification procedure

3.1/4/Oral	Calculation method
4.1/C3	Calculation method

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

Legend to abbreviations and acronyms used in the safety data sheet:

ACGIH: American Conference of Governmental Industrial Hygienists

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

AND: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

CAS: Chemical Abstracts Service (division of the American Chemical Society).

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging.

CMR: Carcinogenic, Mutagenic and Reprotoxic

COD: Chemical Oxygen Demand

COV: Volatile Organic Compound

CSA: Chemical Safety Assessment

CSR: Chemical Safety Report

DMEL: Derived Minimal Effect Level

DNEL: Derived No Effect Level.

DPD: Dangerous Preparations Directive

DSD: Dangerous Substances Directive

EC50: Half Maximal Effective Concentration

ECHA: European Chemicals Agency

EINECS: European Inventory of Existing Commercial Chemical Substances.

ES: Exposure Scenario

GefStoffVO: Ordinance on Hazardous Substances, Germany.

GHS: Globally Harmonized System of Classification and Labeling of Chemicals.

IARC: International Agency for Research on Cancer

IATA: International Air Transport Association.

IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

IC50: half maximal inhibitory concentration

ICAO: International Civil Aviation Organization.

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).

IMDG: International Maritime Code for Dangerous Goods.

INCI: International Nomenclature of Cosmetic Ingredients.
IRCCS: Scientific Institute for Research, Hospitalization and Health Care
KAFH: KAFH
KSt: Explosion coefficient.
LC50: Lethal concentration, for 50 percent of test population.
LD50: Lethal dose, for 50 percent of test population.
LDLo: Leathal Dose Low
N.A.: Not Applicable
N/A: Not Applicable
N/D: Not defined/ Not available
NA: Not available
NIOSH: National Institute for Occupational Safety and Health
NOAEL: No Observed Adverse Effect Level
OSHA: Occupational Safety and Health Administration.
PBT: Persistent, Bioaccumulative and Toxic
PGK: Packaging Instruction
PNEC: Predicted No Effect Concentration.
PSG: Passengers
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.
TLV: Threshold Limiting Value.
TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
vPvB: Very Persistent, Very Bioaccumulative.
WGK: German Water Hazard Class.

Paragraphs modified from the previous revision:

- Safety Data Sheet
- 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING
- 2. HAZARDS IDENTIFICATION
- 3. COMPOSITION/INFORMATION ON INGREDIENTS
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 9. PHYSICAL AND CHEMICAL PROPERTIES
- 11. TOXICOLOGICAL INFORMATION
- 12. ECOLOGICAL INFORMATION
- 14. TRANSPORT INFORMATION
- 16. OTHER INFORMATION