

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Hakaphos® Calcidic Plus K 14-5-24(+10)



Version: 1.11

Date of last issue: 14.02.2023

Date of first issue: 08.11.2016

Revision Date:

07.04.2023

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

1.1 Product identifier

Trade name : Hakaphos® Calcidic Plus K 14-5-24(+10)

UFI : WYH5-Y09J-A00J-S0JV

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

Use of the : Fertilizer
Substance/Mixture

1.3 Details of the supplier of the safety data sheet

Company : COMPO EXPERT GmbH
Krögerweg 10
D-48155 Münster

Telephone : +49 (0) 251 29 79 81 – 000

Telefax : +49 (0) 251 29 79 81 - 111

E-mail address of person : info@compo-expert.com
responsible for the SDS

1.4 Emergency telephone number

GBK GmbH - Global Regulatory Compliance - 24h
Telephone: +49 (0) 6132 - 84463

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Oxidizing solids, Category 3 H272: May intensify fire; oxidizer.

Skin corrosion/irritation, Sub-category 1B H314: Causes severe skin burns and eye damage.

Acute toxicity, Category 4 H302: Harmful if swallowed.

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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements : H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H272 May intensify fire; oxidizer.

Precautionary statements : P102 Keep out of reach of children.
P270 Do not eat, drink or smoke when using this product.

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220 Keep away from clothing and other combustible materials.
P260 Do not breathe dust.
P280 Wear protective gloves/ eye protection/ face protection.
P284 In case of inadequate ventilation wear respiratory protection.

Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/ physician.

Storage:

P405 Store locked up.

Disposal:

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

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2.3 Other hazards

Unspecified

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical Name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
urea phosphate (1:1)	4861-19-2 225-464-3	Skin Corr. 1B; H314	>= 1 - <= 5
potassium nitrate	7757-79-1 231-818-8 01-2119488224-35-XXXX	Ox. Sol. 3; H272	>= 10 - <= 55
Nitric acid, ammonium calcium salt	15245-12-2 239-289-5 01-2119493947-16-XXXX	Acute Tox. 4; H302 Eye Dam. 1; H318	>= 35 - <= 55
disodium [[N,N'-ethylenebis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON,ON']cuprate(2-)	14025-15-1 237-864-5 05-2114842509-41-0000	Acute Tox. 4; H302	>= 0,1 - <= 0,2

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled : Keep patient calm, remove to fresh air, seek medical

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| | attention.
If unconscious place in recovery position and seek medical advice.
In case of lung irritation, first treatment with dexametason aerosol (spray). |
| In case of skin contact | : Wash off with soap and water.
Remove contaminated clothing. If irritation develops, get medical attention. |
| In case of eye contact | : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. |
| If swallowed | : Clean mouth with water and drink afterwards plenty of water. |

4.2 Most important symptoms and effects, both acute and delayed

- | | |
|----------|-----------------------------|
| Symptoms | : No information available. |
|----------|-----------------------------|

4.3 Indication of any immediate medical attention and special treatment needed

- | | |
|-----------|--------------------------|
| Treatment | : Treat symptomatically. |
|-----------|--------------------------|
-

SECTION 5: Firefighting measures

5.1 Extinguishing media

- | | |
|--------------------------------|---|
| Suitable extinguishing media | : Water |
| Unsuitable extinguishing media | : Foam
Dry chemical
Carbon dioxide (CO ₂)
Sand |

5.2 Special hazards arising from the substance or mixture

- | | |
|--------------------------------------|--|
| Specific hazards during firefighting | : At temperatures above 130 °C, dangerous decomposition gases can be emitted:
Nitrogen monoxide, nitrogen dioxide, dinitrogenoxide, ammonia
Oxides of phosphorus |
|--------------------------------------|--|

5.3 Advice for firefighters

- | | |
|---|---|
| Special protective equipment for firefighters | : In the event of fire, wear self-contained breathing apparatus. |
| Further information | : 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.
Avoid contact with skin and eyes.

6.2 Environmental precautions

Environmental precautions : Do not empty into drains.
Retain and dispose of contaminated wash water.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Use mechanical handling equipment.
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

none, For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid dust formation.
Avoid contact with skin, eyes and clothing.
Protect from contamination.
Keep away from direct sunlight.
Protect against heat.
Protect from moisture.

Advice on protection against fire and explosion : The product is not flammable. Keep away from heat and sources of ignition. Keep away from combustible materials.

Hygiene measures : At the end of the shift the skin should be cleaned and skin-care agents applied.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep away from heat. Keep away from sources of ignition - No smoking. Keep away from combustible material. Protect from contamination. When stored loose do not mix with other fertilizers. Protect against humidity (product is hygroscopic and tends to cake or disintegrate)

Advice on common storage : Store well away from other substances.

Storage class (TRGS 510) : 5.1B, Oxidizing hazardous materials

7.3 Specific end use(s)

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Specific use(s) : Always read the label and product information before use.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
disodium [[N,N'-ethylenebis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON,ON'] cuprate(2-)	14025-15-1	TWA	1 mg/m ³ (Copper)	GB EH40

3 mg/m³ (Dust entering alveoli), 10 mg/m³ (inhalable dust)

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

Substance name	End Use	Exposure routes	Potential health effects	Value
potassium nitrate	Workers	Inhalation	Systemic effects	36,7 mg/m ³
	Workers	Skin contact	Systemic effects	20,8 mg/kg
Remarks:	Exposure time: 1 d			
	Consumers	Ingestion	Systemic effects	12,5 mg/kg
Remarks:	Exposure time: 1 d			
	Consumers	Skin contact	Systemic effects	12,5 mg/kg
Remarks:	Exposure time: 1 d			
	Consumers	Inhalation	Systemic effects	10,9 mg/m ³
Nitric acid, ammonium calcium salt	Workers	Inhalation	Specific effects	24,5 mg/m ³
Remarks:	Exposure time: 1 DAY			
	Workers	Skin contact	Specific effects	13,9 mg/kg
Remarks:	Exposure time: 1 DAY			
	Consumers	Inhalation	systemic effects	6,3 mg/m ³
	Consumers	Skin contact	systemic effects	8,33 mg/kg

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	Consumers	Ingestion	systemic effects	8,33 mg/kg
Remarks:	Exposure time: 1 DAY			

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

Substance name	Environmental Compartment	Value
potassium nitrate	Fresh water	0,45 mg/l
	Marine water	0,045 mg/l
	Ceiling Limit Value	4,5 mg/l
Nitric acid, ammonium calcium salt	Sewage treatment plant	18 mg/l
	Fresh water	0,45 mg/l
	Marine water	0,045 mg/l
	Ceiling Limit Value	4,5 mg/l

8.2 Exposure controls

Engineering measures

Provide adequate ventilation.

Personal protective equipment

Eye protection : Tightly fitting safety goggles

Hand protection

Remarks : Chemical resistant protective gloves (EN 374). The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other.

Respiratory protection : Particle filtering disposable mask DIN EN 149 with filter FFP2.

Environmental exposure controls

General advice : Do not empty into drains.

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Retain and dispose of contaminated wash water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: solid
Colour	: light grey
Odour	: odourless
pH	: ca. 1,7, Concentration: 100 g/l (20 °C)
Melting point/range	: No data available
Boiling point/boiling range	: Not applicable
Flash point	: Not applicable
Evaporation rate	: Not applicable
Flammability (solid, gas)	: not auto-flammable
Upper explosion limit	: Not explosive
Lower explosion limit	: Not explosive
Vapour pressure	: Not applicable
Relative vapour density	: Not applicable
Relative density	: Not applicable
Density	: 1,18 g/cm ³
Bulk density	: ca. 1.050 kg/m ³
Solubility(ies)	
Water solubility	: soluble
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: not determined
Viscosity	
Viscosity, dynamic	: Not applicable

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Explosive properties : Not explosive

Particle characteristics

Particle Size Distribution : D50 = 450 µm
D50 Tolerance range = 360 µm - 540 µm
Measurement technique: Sieve analysis

9.2 Other information

No data available

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 normally.

10.3 Possibility of hazardous reactions

Hazardous reactions : Evolution of ammonia under influence of alkalies.

10.4 Conditions to avoid

Conditions to avoid : Corrosive to metals
Contact with water or moist air liberates phosphoric acid.

10.5 Incompatible materials

Materials to avoid : Sulphur, chlorites, chloride, chlorates, Hypochlorites, acid or alkaline reacting substances, flammable oxidizable substances, nitrites, metallic salts, metallic powder, herbicide, chlorinated hydrocarbons, organic compounds.

10.6 Hazardous decomposition products

Hazardous decomposition products : Nitrogen monoxide, nitrogen dioxide, dinitrogenoxide, ammonia
Oxides of phosphorus

SECTION 11: Toxicological information

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

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg

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Components:

potassium nitrate:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0,527 mg/l

Acute dermal toxicity : LD50 (Rat): > 5.000 mg/kg

Nitric acid, ammonium calcium salt:

Acute oral toxicity : LD50: > 300 mg/kg

Acute inhalation toxicity : Remarks: Not relevant because of low vapour pressure.

Remarks: Not relevant because of low dust formation.

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Guideline 402

disodium [[N,N'-ethylenebis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON,ON']cuprate(2-):

Acute oral toxicity : LD50 Oral (Rat): > 1.750 mg/kg

Skin corrosion/irritation

Product:

Remarks: No data available

Components:

potassium nitrate:

Species: Rabbit

Result: No skin irritation

Nitric acid, ammonium calcium salt:

Species: Rabbit

Result: No skin irritation

Serious eye damage/eye irritation

Product:

Remarks: No data available

Components:

potassium nitrate:

Species: Rabbit

Result: No eye irritation

Nitric acid, ammonium calcium salt:

Species: Rabbit

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Result: Irritating to eyes.

Respiratory or skin sensitisation

Product:

Result: non-sensitizing

Components:

potassium nitrate:

Result: non-sensitizing

germ cell mutagenicity

Product:

Genotoxicity in vitro : Remarks: In vitro tests did not show mutagenic effects
The product has not been tested. The information is derived from the properties of the individual components.

Components:

potassium nitrate:

Genotoxicity in vitro : Remarks: No data available

Carcinogenicity

Product:

Remarks: Contains no ingredient listed as a carcinogen

Components:

potassium nitrate:

Remarks: Did not show carcinogenic effects in animal experiments.

Reproductive toxicity

Product:

Effects on fertility :
Remarks: No toxicity to reproduction

Effects on foetal development : Remarks: Contains no ingredient listed as toxic to reproduction

Components:

potassium nitrate:

Effects on fertility :
Remarks: No toxicity to reproduction

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Effects on foetal
development

: Remarks: Did not show teratogenic effects in animal
experiments.

STOT - single exposure

Product:

Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

Components:

potassium nitrate:

Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Product:

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Components:

potassium nitrate:

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Components:

potassium nitrate:

Species: Rat

NOAEL: ≥ 1.500 mg/kg

Exposure time: 1 d

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2 Information on other hazards

Endocrine disrupting properties

No data available

Experience with human exposure

Product:

General Information : Danger of methaemoglobin formation.

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Further information

Product:

Remarks: The product was not tested. The statement was derived from products of similar structure and composition.

SECTION 12: Ecological information

12.1 Toxicity

Components:

potassium nitrate:

Toxicity to fish : LC50 (Fish): > 100 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 490 mg/l
aquatic invertebrates Exposure time: 48 h

Toxicity to algae : LC50 : >= 1.700 mg/l
Exposure time: 10 d

Nitric acid, ammonium calcium salt:

Toxicity to fish : LC50 (Guppy): 1.378 mg/l
Method: OECD Test Guideline 203

Toxicity to daphnia and other : LC50 (Daphnia magna (Water flea)): 490 mg/l
aquatic invertebrates

Toxicity to algae : LC50 (other aquatic plant): > 1.700 mg/l

disodium [[N,N'-ethylenebis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON,ON']cuprate(2-):

Toxicity to fish : LC50 (Fish): > 100 mg/l

Toxicity to algae : EC50 : 30 mg/l
Exposure time: 96 h

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: The product works in the soil as fertilizer and is diminished in a few weeks.

Components:

potassium nitrate:

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

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Nitric acid, ammonium calcium salt:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Components:

potassium nitrate:

Bioaccumulation : Remarks: Does not bioaccumulate.

Nitric acid, ammonium calcium salt:

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

12.4 Mobility in soil

Product:

Mobility : Remarks: Groundwater contamination is unlikely.

Distribution among environmental compartments : Remarks: No data available

Components:

potassium nitrate:

Mobility : Remarks: No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : Remarks: Not applicable

Components:

potassium nitrate:

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).. This substance is not considered to be very persistent and very bioaccumulating (vPvB)..

12.6 Endocrine disrupting properties

No data available

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12.7 Other adverse effects

Product:

Additional ecological
information

: There is a high probability that the product is acute not harmful to aquatic organisms.
Additional ecological information
The product has not been tested. The information is derived from the properties of the individual components.
At higher pH values, which can be found in natural surface waters, an increase of toxic effects on aquatic organisms may be expected.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

: Check if agriculture use is possible.
Contact manufacturer.

Contaminated packaging

: Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

SECTION 14: Transport information

14.1 UN number or ID number

ADN : UN 3084

ADR : UN 3084

RID : UN 3084

IMDG : UN 3084

IATA : UN 3084

14.2 UN proper shipping name

ADN : CORROSIVE SOLID, OXIDIZING, N.O.S.
(urea phosphate, potassium nitrate)

ADR : CORROSIVE SOLID, OXIDIZING, N.O.S.
(urea phosphate, potassium nitrate)

RID : CORROSIVE SOLID, OXIDIZING, N.O.S.
(urea phosphate, potassium nitrate)

IMDG : CORROSIVE SOLID, OXIDIZING, N.O.S.
(urea phosphate, potassium nitrate)

IATA : Corrosive solid, oxidizing, n.o.s.
(urea phosphate, potassium nitrate)

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14.3 Transport hazard class(es)

ADN : 8 (5.1)

ADR : 8 (5.1)

RID : 8 (5.1)

IMDG : 8 (5.1)

IATA : 8 (5.1)

14.4 Packing group

ADN

Packing group : II

Classification Code : CO2

Hazard Identification Number : 85

Labels : 8 (5.1)

ADR

Packing group : II

Classification Code : CO2

Hazard Identification Number : 85

Labels : 8 (5.1)

Tunnel restriction code : (E)

RID

Packing group : II

Classification Code : CO2

Hazard Identification Number : 85

Labels : 8 (5.1)

IMDG

Packing group : II

Labels : 8 (5.1)

EmS Code : F-A, S-Q

Segregation group : 1: Acids

IATA

Packing instruction (cargo aircraft) : 863

Packing instruction (passenger aircraft) : 859

Packing instruction (LQ) : Y844

Packing group : II

Labels : 8, 5.1

14.5 Environmental hazards

ADN

Environmentally hazardous : no

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ADR

Environmentally hazardous : no

RID

Environmentally hazardous : no

IMDG

Marine pollutant : no

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Remarks : Not relevant

SECTION 15: Regulatory information

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

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

	Quantity 1	Quantity 2
ANNEX I; 6	Potassium nitrate: composite potassium-nitrate based fertilisers composed of potassium nitrate in crystalline form	1.250 t 5.000 t

Water contaminating class (Germany) : WGK 1 slightly water endangering

Other regulations : This product is subject to Regulation (EU) 2019/1148; suspicious transactions, disappearance or theft of the product must be reported to the relevant authority.

15.2 Chemical Safety Assessment

A Chemical Safety Assessment is not required for this substance.

SECTION 16: Other information

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Full text of H-Statements

H272	: May intensify fire; oxidizer.
H302	: Harmful if swallowed.
H314	: Causes severe skin burns and eye damage.
H318	: Causes serious eye damage.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Eye Dam.	: Serious eye damage
Ox. Sol.	: Oxidizing solids
Skin Corr.	: Skin corrosion

(Q)SAR - (Quantitative) Structure Activity Relationship; 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; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; DIN - Standard of the German Institute for Standardisation; 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; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; 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; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organisation for Standardization; 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; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; 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; TRGS - Technical Rule for Hazardous Substances; UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philippines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good Laboratory Practice

Further information

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

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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