

# Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

## Hakaphos® Soft Elite 24-6-12



Version: 1.5  
Date of last issue: 14.10.2022  
Date of first issue: 06.01.2022

Revision Date:  
06.04.2023

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

#### 1.1 Product identifier

Trade name : Hakaphos® Soft Elite 24-6-12  
UFI : DKN5-7097-600A-KC1K

#### 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

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

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

Oxidizing solids, Category 2 H272: May intensify fire; oxidizer.

#### 2.2 Label elements

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

Hazard pictograms :



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Signal word	:	Danger	
Hazard statements	:	H272	May intensify fire; oxidizer.
Precautionary statements	:	<b>Prevention:</b> 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.
		<b>Response:</b> P370 + P378	In case of fire: Use water spray to extinguish.
Further information	:	German "Hazardous Substances" legislation (Gefahrstoffverordnung) appendix I, No. 5 (Ammonium Nitrate group C III)	

### 2.3 Other hazards

None known.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Chemical nature : Mixture of nutrient salts based on various inorganic salts.

#### Hazardous components

Chemical Name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
ammonium nitrate	6484-52-2  229-347-8  01-2119490981-27-XXXX	Ox. Sol. 3; H272 Eye Irrit. 2; H319	>= 10 - <= 60

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potassium nitrate	7757-79-1 231-818-8 01-2119488224-35-XXXX	Ox. Sol. 3; H272	>= 10 - <= 30
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For explanation of abbreviations see section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

- If inhaled : Move to fresh air.  
Obtain medical 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.
- 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 : Ingestion may provoke the following symptoms:  
Methaemoglobinemia
- Risks : Later control for pneumonia and lung oedema.

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

- Treatment : Treat symptomatically.  
There is no specific antidote available.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

- Suitable extinguishing media : Water
- Unsuitable extinguishing media : Foam  
Dry chemical  
Carbon dioxide (CO<sub>2</sub>)

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Sand

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

Specific hazards during firefighting : Thermal decomposition can lead to release of irritating gases and vapours.  
Nitrogen oxides (NO<sub>x</sub>)  
ammonia

### 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 : Keep away from children.

### 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.

### 6.4 Reference to other sections

For personal protection see section 8.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : Keep away from direct sunlight.  
Keep away from heat.  
Protect from contamination.  
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 : Wash hands before breaks and at the end of workday.

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### 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 from moisture.
- Advice on common storage : Keep away from strong acids.  
Keep away from strong bases.  
Keep away from combustible materials.
- Storage class (TRGS 510) : 5.1C, Ammonium nitrate and ammonium nitrate containing preparations
- Dampness : Keep in a dry place.

### 7.3 Specific end use(s)

- Specific use(s) : Consult the technical guidelines for the use of this substance/mixture.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

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

Substance name	End Use	Exposure routes	Potential health effects	Value
ammonium nitrate	Workers	Inhalation	Long-term systemic effects	36 mg/m <sup>3</sup>
	Workers	Skin contact	Long-term systemic effects	5,12 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	2,56 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	8,9 mg/m <sup>3</sup>
	Consumers	Skin contact, Ingestion	Long-term systemic effects	2,56 mg/kg bw/day
potassium nitrate	Workers	Inhalation	Systemic effects	36,7 mg/m <sup>3</sup>
	Workers	Skin contact	Systemic effects	20,8 mg/kg
Remarks:	Exposure time: 1 d			

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	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/m3

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

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

## 8.2 Exposure controls

### Personal protective equipment

Eye protection : In case of dust formation:  
Safety glasses

### Hand protection

Material : Gloves

Skin and body protection : No special protective equipment required.

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

### Environmental exposure controls

General advice : Do not empty into drains.  
Retain and dispose of contaminated wash water.

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### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

Physical state	: solid
Colour	: white
Odour	: odourless
Odour Threshold	: No data available
pH	: ca. 4,3, Concentration: 100 g/l (20 °C)
Melting point/range	: No data available
Boiling point/boiling range	: Not applicable
Flash point	: Not relevant
Evaporation rate	: Not applicable
Flammability (solid, gas)	: The product is not flammable.
Upper explosion limit	: Not explosive
Lower explosion limit	: Not explosive
Vapour pressure	: Not applicable
Relative vapour density	: Not applicable
Relative density	: Not applicable
Bulk density	: ca. 1.150 kg/m <sup>3</sup>
Solubility(ies)	
Water solubility	: soluble
Partition coefficient: n-octanol/water	: Not applicable
Decomposition temperature	: > 130 °C To avoid thermal decomposition, do not overheat.
Viscosity	
Viscosity, dynamic	: Not applicable
Viscosity, kinematic	: Not applicable

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Explosive properties	: Not explosive
Oxidizing properties	: Not considered an oxidizing substance
<b>Particle characteristics</b>	
Particle Size Distribution	: D50 = 435 µm D50 Tolerance range = 348 µm - 522 µm Measurement technique: Sieve analysis

### 9.2 Other information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Stable under recommended storage conditions.

### 10.2 Chemical stability

No decomposition if stored and applied as directed.

Decomposes on heating.

### 10.3 Possibility of hazardous reactions

Hazardous reactions : Evolution of ammonia under influence of alkalies.

### 10.4 Conditions to avoid

Conditions to avoid : Keep away from heat and sources of ignition.

### 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 oxides (NO<sub>x</sub>)  
ammonia

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## SECTION 11: Toxicological information

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

#### Acute toxicity

##### Product:

Acute oral toxicity : Remarks: This information is not available.

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Health injuries are not known or expected under normal use.

### **Components:**

#### **ammonium nitrate:**

Acute oral toxicity : LD50 (Rat): > 2.950 mg/kg  
Method: OECD Test Guideline 401

Acute inhalation toxicity : > 88,8 mg/l  
Method: No information available.

Acute dermal toxicity : LD50 (Rat): > 5.000 mg/kg  
Method: OECD Test Guideline 402

#### **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

### **Skin corrosion/irritation**

#### **Product:**

Result: non-irritant

Remarks: The product has not been tested. The information is derived from the properties of the individual components.

### **Components:**

#### **ammonium nitrate:**

Species: Rabbit

Method: OECD Test Guideline 404

Result: non-irritant

#### **potassium nitrate:**

Species: Rabbit

Result: No skin irritation

### **Serious eye damage/eye irritation**

#### **Product:**

Species: Rabbit

Method: OECD Test Guideline 405

Result: non-irritant

### **Components:**

#### **ammonium nitrate:**

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Species: Rabbit  
Method: OECD Test Guideline 405  
Result: Irritant

**potassium nitrate:**

Species: Rabbit  
Result: No eye irritation

**Respiratory or skin sensitisation**

**Product:**

Result: non-sensitizing

Remarks: The product has not been tested. The information is derived from the properties of the individual components.

**Components:**

**ammonium nitrate:**

Result: Does not cause skin sensitisation.

**potassium nitrate:**

Result: non-sensitizing

**germ cell mutagenicity**

**Product:**

Genotoxicity in vitro : Remarks: No data available

**Components:**

**ammonium nitrate:**

Genotoxicity in vitro : Method: OECD Test Guideline 471  
Result: negative

**potassium nitrate:**

Genotoxicity in vitro : Remarks: No data available

**Carcinogenicity**

**Product:**

Remarks: Contains no ingredient listed as a carcinogen

**Components:**

**ammonium nitrate:**

Species: Rat  
Remarks: Animal testing did not show any carcinogenic effects.

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### **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: Did not show teratogenic effects in animal experiments.  
Information given is based on data obtained from similar substances.

#### **Components:**

##### **ammonium nitrate:**

Effects on fertility : Species: Rat  
Remarks: Animal testing did not show any effects on fertility.

Effects on foetal development : Species: Rat  
Remarks: Did not show teratogenic effects in animal experiments.

##### **potassium nitrate:**

Effects on fertility : Remarks: No toxicity to reproduction

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.

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### **Components:**

#### **potassium nitrate:**

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

### **Repeated dose toxicity**

#### **Components:**

##### **ammonium nitrate:**

Species: Rat

NOAEL: > 1.500 mg/kg

Application Route: Oral

Exposure time: 28 d

Species: Rat

NOAEL: = 256 mg/kg

Application Route: Oral

Exposure time: 52 w

Method: OECD Test Guideline 453

Species: Rat

NOAEL: >= 185 mg/kg

Application Route: by inhalation

Exposure time: 2 w

Method: Repeated Dose Inhalation Toxicity: 28-day or 14-day Study.

##### **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.

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## SECTION 12: Ecological information

### 12.1 Toxicity

#### Components:

##### **ammonium nitrate:**

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

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

LC50 : 490 mg/l

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 1.700 mg/l  
Exposure time: 10 d

##### **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

### 12.2 Persistence and degradability

#### Product:

Biodegradability : Remarks: No data available

#### Components:

##### **ammonium nitrate:**

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

##### **potassium nitrate:**

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

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### 12.3 Bioaccumulative potential

#### **Product:**

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

#### **Components:**

##### **ammonium nitrate:**

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: -3,1

##### **potassium nitrate:**

Bioaccumulation : Remarks: Does not bioaccumulate.

### 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: No data available

#### **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

### 12.7 Other adverse effects

#### **Product:**

Additional ecological information : Information refers to the main component.  
Do not flush into surface water or sanitary sewer system.

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## 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.

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## SECTION 14: Transport information

### 14.1 UN number or ID number

ADN	: UN 1477
ADR	: UN 1477
RID	: UN 1477
IMDG	: UN 1477
IATA	: UN 1477

### 14.2 UN proper shipping name

ADN	: NITRATES, INORGANIC, N.O.S.
ADR	: NITRATES, INORGANIC, N.O.S.
RID	: NITRATES, INORGANIC, N.O.S.
IMDG	: NITRATES, INORGANIC, N.O.S.
IATA	: Nitrates, inorganic, n.o.s.

### 14.3 Transport hazard class(es)

ADN	: 5.1
ADR	: 5.1
RID	: 5.1
IMDG	: 5.1
IATA	: 5.1

### 14.4 Packing group

ADN	
Packing group	: II
Classification Code	: O2
Hazard Identification Number	: 50

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Labels : 5.1

### ADR

Packing group : II  
Classification Code : O2  
Hazard Identification Number : 50  
Labels : 5.1  
Tunnel restriction code : (E)

### RID

Packing group : II  
Classification Code : O2  
Hazard Identification Number : 50  
Labels : 5.1

### IMDG

Packing group : II  
Labels : 5.1  
EmS Code : F-A, S-Q  
Segregation group : 2: Ammonium compounds

### IATA

Packing instruction (cargo aircraft) : 562  
Packing instruction (passenger aircraft) : 558  
Packing instruction (LQ) : Y544  
Packing group : II  
Labels : 5.1

## 14.5 Environmental hazards

### ADN

Environmentally hazardous : no

### 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

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

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 : Acquisition, introduction, possession or use of this product by the general public is restricted by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts must be reported to the relevant national contact point.

#### 15.2 Chemical Safety Assessment

A Chemical Safety Assessment is not required for this substance.

### SECTION 16: Other information

#### Full text of H-Statements

H272 : May intensify fire; oxidizer.  
H319 : Causes serious eye irritation.

#### Full text of other abbreviations

Eye Irrit. : Eye irritation  
Ox. Sol. : Oxidizing solids

(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

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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 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