



# Material Safety Data Sheet

According to Regulation (EG) Nr.1907/2006 (REACH)

## Tl..., crystalline

Version 1.1 / EN

Revision Date:

08.05.2012

### 1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

#### Product identifier

Product No.: 32 xx xxx & 33 xx xxx  
 Product name: TlCl, TlBr, KRS-5, KRS-6, crystalline  
 REACH Reg.-No.: exempted from registration in accordance with REACH

#### Identified uses

Optical material

#### Company identifier

KORTH KRISTALLE GMBH  
 Am Jägersberg 3  
 D-24161 Altenholz, GERMANY  
 Tel.: +49 (0)431 36905-0

Telefax: +49 (0)431 36905-25

E-Mail: [info@korth.de](mailto:info@korth.de)

#### Emergency information

National: CHARITÉ Berlin Tel.: +49-(0)30 450 553 555  
 GIFTNOTRUFZENTRALE BERLIN – 24h active Tel.: +49-(0)30 19 240  
 GIFTINFORMATIONSZENTRUM-NORD Göttingen Tel.: +49-(0)551 192 40  
 International: CENTRE SUISSE D'INFORMATION TOXICOLOGIQUE Tel.: +41-(0)1 251 51 51

### 2. HAZARDS IDENTIFICATION

#### Classification of the substance

According to Regulation (EC) Nr. 1272/2008, Appendix 7 (H&P-Rules):



DANGER: H300+330 **Fatal if swallowed or inhaled.**  
 H373 May cause **damage to organs** through prolonged or repeated exposure.  
 H411 **Toxic to aquatic life** with long lasting effects.

PREVENTION: P270 Do not eat, drink, and smoke while handling the substance.  
 P260 Do not breathe dust/ fume/ gas/ mist/vapours/spray.  
 P264 Rinse hands thoroughly after handling the substance.

SAFETY INSTRUCTIONS: P301+310 If swallowing ⇒ immediately call a **POISON CENTER** or **doctor/physician**  
 P304+312 If inhaled ⇒ call a **POISON CENTER** or **doctor/physician** if you feel unwell  
 P320 Specific treatment is urgent.

#### According to Regulation 67/548/EEC or Regulation 1999/45/EC (R&S-Rules):

T+: very toxic.  
 N: Dangerous for the environment.  
 R26/28: Very toxic by inhalation and if swallowed.  
 R33: Danger of cumulative effects.  
 R51/53: Very toxic to aquatic organisms, may cause long-term adverse effects in aquatic environment.  
 S1/2: Keep container closed and keep out of reach of children.  
 S13: Keep away from food, drink and animal feeding stuffs.





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S28: After contact with skin, wash immediately with plenty of soap and water.  
 S45: In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)  
 S61: Avoid release to environment.

*Note that the Risk and Safety Phrases included here for completeness are being replaced with the GHS Hazard and Precautionary statements (s. above).*

### Other hazards

No

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

<b>Synonyms</b>	<b>Thallium Chloride</b>	
Formula:	TlCl	EC (EINECS) No.: 232-199-7
Purity :	100 %	EU index: 081-002-00-9
CAS No.:	7791-12-0	UN-No.: 1707

<b>Synonyms</b>	<b>Thallium Bromide</b>	
Formula:	TlBr	EC (EINECS) No.: 232-163-0
Purity :	100 %	EU index: 081-002-00-9
CAS No.:	7789-40-4	UN No.: 1707

<b>Synonyms</b>	<b>Thallium Bromine Chloride, KRS-6</b>	
Formula:	Tl(Br,Cl)	EC (EINECS) No.:
Purity :	100 %	EU index:
CAS No.:		UN-Nr.: 1707

<b>Synonyms</b>	<b>Thallium Bromine Iodide, KRS-5</b>	
Formula:	Tl(Br,I)	EC (EINECS) No.:
Purity :	100 %	EU index:
CAS No.:		UN-Nr.: 1707

## 4. FIRST AID MEASURES

### Common notes

Remove contaminated clothing. Obtain medical attention and show them these material safety data sheet.

### After inhalation

Change location to fresh air. Perform artificial respiration if breathing has stopped. Obtain medical attention.

### After contact with skin

Immediately wash off with plenty of water. Remove contaminated clothes and shoes and brush thoroughly.

### After eye contact

Rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist.



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### *After swallowing\**

Do not induce vomiting. Wash out mouth thoroughly with water and give 2 cups of water to drink. Do not give carbonated drinks. Never make unconscious persons vomit or drink fluids. Obtain medical attention immediately!

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

Inhalation can lead to paralysis, inflammation and oedema of larynx and bronchus but also to pneumonia and oedema of lungs. The substance is extreme tissue damaging to mucous membranes and upper respiratory tract.

### *Note for the doctor*

Show him this Safety Data Sheet.

## 5. FIRE-FIGHTING MEASURES

### *Suitable extinguishing media*

Spray water, foam, carbon dioxide (CO<sub>2</sub>), or powder. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

### *Unsuitable extinguishing media*

None.

### *Special hazards arising during fire fighting*

Development of hazardous combustion gases or vapours is possible in the event of fire. Fire may evolve Hydrogen Bromide (HBr), Hydrogen Chloride (HCl) and/or Hydrogen Iodide (HI) and as vapours Tl Thallium and Thallium Oxide. Do not breathe, smoke or inhale.

### *Special protective equipment for fire-fighters*

Usage of self-contained breathing apparatus is necessary. Wear suitable protective clothing and avoid contact with skin.

### *Additional information*

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system or drains.

## 6. ACCIDENTAL RELEASE MEASURES

### *Personal precautions*

Respirator necessary. Avoid generation and inhalation of gases/vapours/mists. Realize well-ventilated surrounding.

### *Environmental precautions*

Do not empty into drains or ground water.

### *Methods and materials for containment and cleaning up*

Take up dry. Dispose properly. Clean up. Avoid generation of dusts.

### *Additional information*

Waste treatment, see section 13.



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## 7. HANDLING AND STORAGE

### *Advice on safe handling*

Follow common safety and hygiene statements. Avoid generating dust and aerosol. Handle carefully. Avoid contact with skin and eyes. Eye wash should be readily available.

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

No special conditions.

### *Additional information*

None.

### *Demands on storage surroundings*

None.

### *Demands on storage places and container*

Keep at a dry, cool, well-ventilated place. The containers should be kept tightly closed.

### *Storage class (VCI)*

Not available.

### *Specific end uses*

Exclusively for optical applications.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### *Additional control parameters*

Not available.

### *Limitation and monitoring of the workplace exposure*

Not necessary.

### *Individual protection measure*

Skin: protective clothing as described. Use of a laboratory coat is suggested.

Respiratory: protective devices required when dusts are generated, filter B-(P3). For short-term or low contamination use a filtering respiratory device.

Eye: safety glasses

Hand: gloves PVC or PE

### *Hygiene measure*

Do not eat, drink, smoke and sneeze while working with the substance. Work under hood. Avoid inhaling dust and generation of dusts. Change contaminated clothing. Wash hands thoroughly after working with the substance. Apply preventive skin protection.

### *Environmental exposure controls*

Do not empty into drains.



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### 9. PHYSICAL AND CHEMICAL PROPERTIES

<i>Appearance</i>	<i>TlCl</i>	<i>KRS-6</i>	<i>TlBr</i>	<i>KRS-5</i>
Aggregate state:	solid	ditto	ditto	ditto
Colour:	colourless/white as powder	ditto	yellow	orange
Odour:	odourless	ditto	ditto	ditto
<b>Data related to safety</b>				
pH:	not determined	ditto	ditto	ditto
Melting point:	431 °C	424 °C	460 °C	416 °C
Boiling point:	720 °C	not applicable	815 °C	not applicable
Ignition point:	not applicable	ditto	ditto	ditto
Flash point:	not applicable	ditto	ditto	ditto
Lower explosion limit:	not applicable	ditto	ditto	ditto
Upper explosion limit:	not applicable	ditto	ditto	ditto
Relative density:	7,00 g/cm <sup>3</sup> (20 °C)	7,19	7,55	7,37
Solubility in water:	practically insoluble (20 °C)	ditto	ditto	ditto

### 10. STABILITY AND REACTIVITY

#### *Conditions to avoid*

None

#### *Incompatible substances*

Strong oxidising agents, Potassium, Sodium and Sodium Oxide.

#### *Hazardous decomposition products*

In the event of fire: Thallium vapour Tl, Thallium oxide and Hydrogen Bromide (HBr) and Bromine Br<sub>2</sub> and/or Hydrogen Chloride (HCl) and Chlorine Cl<sub>2</sub> and/or Hydrogen Iodide (HI) and Iodine I<sub>2</sub>.

#### *Additional information*

None

### 11. TOXICOLOGICAL INFORMATION

#### *Acute toxicity*

TlCl Oral LD50: 24mg/kg (mus).

#### *Additional toxicological hints*

Skin contact: could be in case of resorption harmful. Irritations of skin.  
 Eye contact: Irritations of eyes  
 Inhalation: could be fatal  
 Swallowing: could be fatal  
 Possible effects: Inhalation can be lead to paralysis, inflammation and oedema of larynx and bronchus but also to pneumonia and oedema of lungs.  
 Damaging of: Larynx, bronchus, lungs, nervous systems.



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**Additional hints:** A thallium poisoning is characterized by Alopecia (hair loss). The symptoms include dry scaly skin and not a good nailgrowth, which causes crescent-shaped strips across finger and toenails ("Mees-Streifen"). A acute poisoning leads to an upswell of legs and feet, Arthralgie, Vomiting, Insomnia, Hyperaesthesie and Paroeshtesie of hands and feet, Dizziness, Polyneuritis with severe pain in legs and loins, partially paralysis of legs, angina similar pain, Nephritis, Exhaustion and Weakness, also Lymphozytose and Eosinophilie. In case of chronic poisoning the abnormalities of central and peripheral nerve system, including Ataxie, Trembling, Incoordination, Paralysis of extremities, hormone disrupters and memory loss maybe persist and favour the development of psychoses.

**Systemic effects:** not known

### *Further information*

The product should be handled with the care usual when dealing with chemicals.

## 12. ECOLOGICAL INFORMATION

### *Ecotoxic effects:*

Fish toxicity (L. idus):	LC50	120 mg/l
Bacterial toxicity (Ps. Putida):	toxic	>231 mg/l
Algal toxicity (Sc. Quadricauda)	toxic	prevents from developing

### *Mobility*

No information available.

### *Persistence and degradability*

No information available.

### *Bioaccumulative potential*

No information available.

### *Results of PBT and vPvB assessment*

No information available.

### *Other adverse effects*

Poisonous to aquatic organism, fish and plankton.

## 13. DISPOSAL CONSIDERATIONS

### *Substance*

Chemicals must be disposed of in compliance with the respective regulations. Under [www.retrologistik.de](http://www.retrologistik.de) you will find country- and substance-specific information as well as contact partners. Avoid mixing with other waste materials.

### *Recommendation*

According to your local waste disposal authority.

### *Container*

None



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***Contaminated container***

See Substance

***Decontaminated container***

See Substance

## 14. TRANSPORT INFORMATION

***Transport on road/rail ADR/RID***

UN No.: 1707  
 Proper Shipping Name: THALLIUM COMPOUNDS, N.O.S.  
 Class: 6.1  
 Packing Group: II  
 Code: T5  
 Danger No.: 60  
 Danger label: 6.1

***Transport on sea/waterway IMDG/GGVSee***

UN No.: 1707  
 Proper Shipping Name: THALLIUM COMPOUNDS, N.O.S.  
 Class: 6.1  
 Packing Group: II  
 EmS No.: F-A, S-A  
 Special: Marine pollutant

***Transport in air ICAO-TI and IATA-DGR***

UN No.: 1707  
 Proper Shipping Name: THALLIUM COMPOUNDS, N.O.S.  
 Class: 6.1  
 Packing Group: II

## 15. REGULATORY INFORMATION

***Chemical safety assessment***

Not existing

***EC regulations***

Major accidental hazard legislation 96/82/EC: none  
 Quantity 1:  
 Quantity 2:  
 Occupational restrictions: none

***National regulations***

Water pollution class WGK: WGK 3 ⇒ strong polluting substance  
 Technical instruction air (TA-Luft): class 1, 100%  
 Accidental hazard regulation (12.BImSchV): see EC regulations  
 Solute regulation (31.BImSchV): none  
 Occupational restrictions: none



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*Other information*

None

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## 16. OTHER INFORMATION

*Used EC directions*

MSDS in accordance with EC directive 2001/58/EEC.

Substance classification according to EC directive 67/548/EEC und 1999/45/EG.

*Additional hints*

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org)

*Alterations compared to the last version*

Look at the mark \*:                      4. After swallowing: *amended description*

*Responsible for the MSDS*

*Safety Officer*

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The information contained herein is based on the present state of our knowledge.  
It characterizes the product with the regard to the appropriate safety precautions.  
It does not represent a guarantee of any properties of the product.