

SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Revision Date 06/14/2018

Version 1.4

SECTION 1. Identification**Product identifier**

Product number 105445
Product name Zinc iodide starch solution for analysis

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

Identified uses Reagent for analysis

Details of the supplier of the safety data sheet

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| Ontario M9W 6Y1 | Canada | General Inquiries: +1 800-645-5476 |
Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
MilliporeSigma is a business of Merck KGaA, Darmstadt, Germany.

Emergency telephone 800-424-9300 CHEMTREC (USA)
+1-703-527-3887 CHEMTREC (International)
24 Hours/day; 7 Days/week

SECTION 2. Hazards identification**GHS Classification**

Skin irritation, Category 2, H315
Eye irritation, Category 2A, H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms



Signal Word
Warning

Hazard Statements

H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary Statements

P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ eye protection/ face protection.

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P302 + P352 IF ON SKIN: Wash with plenty of soap and 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.
P321 Specific treatment (see supplemental first aid instructions on this label).
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature Aqueous solution of inorganic and organic compounds.

Hazardous ingredients

Chemical name (Concentration)

CAS-No.

zinc chloride (>= 1 % - < 5 %)

7646-85-7

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air.

Skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

Eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

Ingestion

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

irritant effects

The following applies to iodides in general: Sensitization possible in predisposed persons.

The following applies to zinc compounds in general: only slightly absorbable via the gastrointestinal tract. Astringent effect on mucous membranes. Metal-fume fever after inhalation of large quantities.

Indication of any immediate medical attention and special treatment needed

No information available.

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SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapors.

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapors, aerosols. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Conditions for safe storage, including any incompatibilities

Tightly closed.

Store at +15°C to +25°C (+59°F to +77°F).

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SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>zinc chloride 7646-85-7</i>			
CAD AB OEL	Time Weighted Average (TWA):	1 mg/m ³	Form of exposure: Fume.
	Short Term Exposure Limit (STEL):	2 mg/m ³	Form of exposure: Fume.
CAD BC OEL	Short Term Exposure Limit (STEL):	2 mg/m ³	Form of exposure: Fume.
	Time Weighted Average (TWA):	1 mg/m ³	Form of exposure: Fume.
CAD MB OEL	Time Weighted Average (TWA):	1 mg/m ³	Form of exposure: Fume.
	Short Term Exposure Limit (STEL):	2 mg/m ³	Form of exposure: Fume.
CAD ON OEL	Time Weighted Average (TWAEV):	1 mg/m ³	Form of exposure: Fume.
	Short Term Exposure Limit (STEV):	2 mg/m ³	Form of exposure: Fume.
OEL (QUE)	Time Weighted Average (TWA):	1 mg/m ³	Form of exposure: Fume.

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatrill® L (full contact), KCL 741 Dermatrill® L (splash contact).

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The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment:

protective clothing

Respiratory protection

required when vapors/aerosols are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer. These measures have to be properly documented.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	odorless
Odor Threshold	Not applicable
pH	ca. 6.2 at 68 °F (20 °C)
Melting point	No information available.
Boiling point	No information available.
Flash point	Not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	No information available.
Relative vapor density	No information available.
Density	1.02 g/cm ³ at 68 °F (20 °C)

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Relative density	No information available.
Water solubility	at 68 °F (20 °C) soluble
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none

SECTION 10. Stability and reactivity

Reactivity

See below

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Violent reactions possible with:

The generally known reaction partners of water.

Conditions to avoid

no information available

Incompatible materials

no information available

Hazardous decomposition products

no information available

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact

Acute oral toxicity

Acute toxicity estimate: > 2,000 mg/kg

Calculation method

Acute inhalation toxicity

Symptoms: Possible damages:, mucosal irritations

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Skin irritation

Mixture causes skin irritation.

Eye irritation

Mixture causes serious eye irritation.

Specific target organ systemic toxicity - single exposure

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

Specific target organ systemic toxicity - repeated exposure

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

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

The following applies to zinc compounds in general: only slightly absorbable via the gastrointestinal tract. Adstringent effect on mucous membranes. Metal-fume fever after inhalation of large quantities.

The following applies to iodides in general: Sensitization possible in predisposed persons. Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Ingredients

zinc chloride

Acute oral toxicity

LD50 Rat: 1,100 mg/kg

OECD Test Guideline 401

Germ cell mutagenicity

Genotoxicity in vitro

In vitro mammalian cell gene mutation test

MOUSE LYMPHOMA TEST

Result: negative

(ECHA)

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Mutagenicity (mammal cell test): chromosome aberration.
Result: negative
(ECHA)

SECTION 12. Ecological information

Ecotoxicity

No information available.

Persistence and degradability

No information available.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Ingredients

zinc chloride

Toxicity to fish

static test LC50 *Oncorhynchus mykiss* (rainbow trout): 0.169 mg/l; 96 h (ECHA)

Toxicity to daphnia and other aquatic invertebrates

static test EC50 *Daphnia magna* (Water flea): 0.33 mg/l; 48 h

Analytical monitoring: yes

OECD Test Guideline 202

Toxicity to algae

static test NOEC *Pseudokirchneriella subcapitata* (green algae): 0.0049 mg/l; 72 h

Analytical monitoring: yes

OECD Test Guideline 201

Toxicity to bacteria

static test IC50 activated sludge: 0.35 mg/l; 4 h

ISO/TC 147 (referred to the cation)

Toxicity to fish (Chronic toxicity)

flow-through test NOEC *Oncorhynchus mykiss* (rainbow trout): 0.199 mg/l; 30 d

Analytical monitoring: yes

OECD Test Guideline 215

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

semi-static test NOEC *Daphnia magna* (Water flea): 0.143 mg/l; 21 d

Analytical monitoring: yes

OECD Test Guideline 211

Biodegradability

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

M-Factor

1

PBT/vPvB: Not applicable for inorganic substances

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SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

Not classified as dangerous in the meaning of transport regulations.

Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. Regulatory information

United States of America

Canada

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: This product contains one or several components listed in the Canadian NDSL.

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Labeling

Hazard pictograms



Signal Word

Warning

Hazard Statements

H315 Causes skin irritation.

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H319 Causes serious eye irritation.

H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements

Prevention

P273 Avoid release to the environment.

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and 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.

P313 Get medical advice/ attention.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 06/14/2018

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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