SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product Identifier: (5N) 99.999% Thallium(I) Iodide

Product Code: T1L-I-05

CAS Number: 7790-30-9

Relevant identified uses of the substance: Scientific research and development

Supplier details:

American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351
Emergency telephone number: +1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008
GHS06 Skull and crossbones
Acute Tox. 2 H300 Fatal if swallowed.
Acute Tox. 2 H330 Fatal if inhaled.
GHS08 Health hazard
STOT RE 2 H373 May cause damage to the blood through prolonged or repeated exposure. Route of exposure: Oral.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC
T+: Very toxic
R26/28: Very toxic by inhalation and if swallowed.
N; Dangerous for the environment
R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R33: Danger of cumulative effects.

Information concerning particular hazards for human and environment:
N/A

Hazard not otherwise classified
No data available

Label elements

Labelling according to Regulation (EC) No 1272/2008
The substance is classified and labeled according to the CLP regulation.
Hazard pictograms

GHS06 GHS08
Signal word: Danger
Hazard statements
H300+H330 Fatal if swallowed or if inhaled.
H373 May cause damage to the blood through prolonged or repeated exposure. Route of exposure: Oral.
Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P284 [In case of inadequate ventilation] wear respiratory protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...
P320 Specific treatment is urgent (see on this label).
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
WHMIS classification
D1A - Very toxic material causing immediate and serious toxic effects
Classification system
HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)
HEALTH
FIRE
REACTIVITY
3
0
1
Health (acute effects) = 3
Flammability = 0
Physical Hazard = 1
Other hazards
Results of PBT and vPvB assessment
PBT: N/A
vPvB: N/A

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
CAS No. / Substance Name:
7790-30-9 Thallium(I) iodide
Identification number(s):
EC number: 232-199-7
Index number: 081-002-00-9

SECTION 4. FIRST AID MEASURES

Description of first aid measures
General information
Immediately remove any clothing soiled by the product. 
Remove breathing apparatus only after contaminated clothing has been completely removed. 
In case of irregular breathing or respiratory arrest provide artificial respiration. 
If inhaled: 
Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm. 
Seek immediate medical advice. 
In case of skin contact: 
Immediately wash with soap and water; rinse thoroughly. 
Seek immediate medical advice. 
In case of eye contact: 
Rinse opened eye for several minutes under running water. Consult a physician. 
If swallowed: 
Do not induce vomiting; immediately call for medical help. 
Information for doctor 
Most important symptoms and effects, both acute and delayed 
No data available 
Indication of any immediate medical attention and special treatment needed 
No data available

SECTION 5. FIREFIGHTING MEASURES
Extinguishing media 
Suitable extinguishing agents 
Product is not flammable. Use fire-fighting measures that suit the surrounding fire. 
Special hazards arising from the substance or mixture 
If this product is involved in a fire, the following can be released: 
Hydrogen iodide (HI) 
Thallium oxide 
Advice for firefighters 
Protective equipment: 
Wear self-contained respirator. 
Wear fully protective impervious suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES
Personal precautions, protective equipment and emergency procedures 
Use personal protective equipment. Keep unprotected persons away. 
Ensure adequate ventilation 
Environmental precautions: 
Do not allow material to be released to the environment without official permits. 
Do not allow product to enter drains, sewage systems, or other water courses. 
Do not allow material to penetrate the ground or soil. 
Methods and materials for containment and cleanup: 
Dispose of contaminated material as waste according to section 13. 
Ensure adequate ventilation. 
Prevention of secondary hazards: 
No special measures required. 
Reference to other sections 
See Section 7 for information on safe handling 
See Section 8 for information on personal protection equipment. 
See Section 13 for disposal information.
SECTION 7. HANDLING AND STORAGE

Handling
Precautions for safe handling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Open and handle container with care.
Information about protection against explosions and fires:
The product is not flammable
Conditions for safe storage, including any incompatibilities
Requirements to be met by storerooms and receptacles:
No special requirements.
Information about storage in one common storage facility:
Store in the dark.
Store away from oxidizing agents.
Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well-sealed containers.
Protect from exposure to light.
Specific end use(s)
No data available

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.
Control parameters
Components with limit values that require monitoring at the workplace:
7790-30-9 Thallium(I) iodide (100.0%)
PEL (USA) Long-term value: 0.1 mg/m$^3$ as Tl; Skin
REL (USA) Long-term value: 0.1 mg/m$^3$ as Tl; Skin
TLV (USA) Long-term value: 0.02* mg/m$^3$ as Tl; *inhalable fraction; Skin
Additional information: No data
Exposure controls
Personal protective equipment
Follow typical protective and hygienic practices for handling chemicals.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Maintain an ergonomically appropriate working environment.
Breathing equipment:
Use self-contained respiratory protective device in emergency situations.
Recommended filter device for short term use:
Use a respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls.
Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.
Protection of hands: Impervious gloves
Inspect gloves prior to use.
Suitability of gloves should be determined both by material and quality, the latter of which may vary by manufacturer.
Penetration time of glove material (in minutes): No data available
Eye protection: Safety glasses
Body protection: Protective work clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES
Information on basic physical and chemical properties
Appearance:
Form: Powder/crystalline/beads
Color: Yellow
Odor: Odorless
Odor threshold: No data available.
P: N/A
Melting point/Melting range: 440 °C (824 °F)
Boiling point/Boiling range: 824 °C (1515 °F)
Sublimation temperature / start: No data available
Flammability (solid, gas): No data available.
Ignition temperature: No data available
Decomposition temperature: No data available
Autoignition: No data available.
Danger of explosion: No data available.
Explosion limits:
Lower: No data available
Upper: No data available
Vapor pressure: N/A
Density at 20 °C (68 °F): 7.1 g/cm³ (59.25 lbs/gal)
Relative density: No data available.
Vapor density: N/A
Evaporation rate: N/A
Solubility in Water (H₂O): Insoluble
Partition coefficient (n-octanol/water): No data available.
Viscosity:
Dynamic: N/A
Kinematic: N/A
Other information
No data available

SECTION 10. STABILITY AND REACTIVITY
Reactivity
No data available
Chemical stability
Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided:
Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions
Reacts with strong oxidizing agents
Conditions to avoid
SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity:
Fatal if inhaled.
Fatal if swallowed.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.
LD/LC50 values that are relevant for classification: Oral LD50 24.1 mg/kg (rat)
Skin irritation or corrosion: May cause irritation
Eye irritation or corrosion: May cause irritation
Sensitization: No sensitizing effects known.
Germ cell mutagenicity: No effects known.
Carcinogenicity:
EPA-II: Inadequate information to access carcinogenic potential.
Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure:
May cause damage to the blood through prolonged or repeated exposure. Route of exposure: Oral.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.
Subacute to chronic toxicity:
The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.
Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity
Aquatic toxicity:
No data available
Persistence and degradability
No data available
Bioaccumulative potential
No data available
Mobility in soil
No data available
Additional ecological information:
Do not allow material to be released to the environment without official permits.
Do not allow product to reach groundwater, water courses, or sewage systems, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Toxic to aquatic life.  
May cause long lasting harmful effects to aquatic life.  
Avoid transfer into the environment.  
Results of PBT and vPvB assessment  
PBT: N/A  
vPvB: N/A  
Other adverse effects  
No data available  

SECTION 13. DISPOSAL CONSIDERATIONS  

Waste treatment methods  
Recommendation  
Consult official regulations to ensure proper disposal.  
Uncleaned packagings:  
Recommendation:  
Disposal must be made according to official regulations  

SECTION 14. TRANSPORT INFORMATION  

UN-Number  
DOT, IMDG, IATA  
UN1707  
UN proper shipping name  
DOT  
Thallium compounds, n.o.s. (Thallium(I) iodide)  
IMDG  
THALLIUM COMPOUND, N.O.S. (Thallium(I) iodide), MARINE POLLUTANT  
IATA  
THALLIUM COMPOUND, N.O.S. (Thallium(I) iodide)  
Transport hazard class(es)  
DOT  
Class  
6.1 Toxic substances.  
Label  
6.1  
Class  
6.1 (T5) Toxic substances  
Label  
6.1  
IMDG  
Class  
6.1 Toxic substances.  
Label  
6.1  
IATA  
Class  
6.1 Toxic substances.  
Label  
6.1  
Packing group
DOT, IMDG, IATA
II
Environmental hazards:
Environmentally hazardous substance, solid; Marine Pollutant
Marine pollutant (IMDG):
Yes (P)
Symbol (fish and tree)
Special precautions for user
Warning: Toxic substances
EMS Number:
F-A,S-A
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
N/A
Transport/Additional information:
DOT
Marine Pollutant (DOT):
Yes (P)
Remarks:
Special marking with the symbol (fish and tree).
UN "Model Regulation":
UN1707, Thallium compounds, n.o.s. (Thallium(I) iodide), 6.1, II

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic
Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).
SARA Section 313 (specific toxic chemical listings)
7790-30-9 Thallium(I) iodide
California Proposition 65
Prop 65 - Chemicals known to cause cancer
Substance is not listed.
Prop 65 - Developmental toxicity
Substance is not listed.
Prop 65 - Developmental toxicity, female
Substance is not listed.
Prop 65 - Developmental toxicity, male
Substance is not listed.
Information about limitation of use:
For use only by technically qualified individuals.
Other regulations, limitations and prohibitive regulations
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.
Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No
1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
Substance is not listed.
Annex XIV of the REACH Regulations (requiring Authorisation for use)
Substance is not listed.
REACH - Pre-registered substances
Substance is listed.
Chemical safety assessment:
A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2019 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.