Safety Data Sheet

1: Identification

1.1: Product Identifier

Product Name: ThI4

Product Number(s): 1THI4-0004F

CAS Number: 7790-49-0

SDS Document Number: 000264

1.2: Recommended Uses and Restrictions

Recommended Uses

Manufacture of substances

Restrictions

Not for food or drug use.

1.3: Supplier Contact Information

APL Engineered Materials, Inc.
2401 N. Willow Rd.
Urbana, IL 61802
Phone: 217-367-1340
Fax: 217-367-9084

1.4: Emergency Phone Number

United States: 800-255-3924

International: +01-813-248-0585

2: Hazards Identification

2.1: Classifications

Carcinogenicity - Category 1A

Specific Target Organ Toxicity - Repeated Exposure - Category 2

2.2: GHS Label Elements

Pictograms

Signal Word: Danger

Hazard Statements

H350: May cause cancer.

H373: May cause damage to internal organs through prolonged or repeated exposure.

Precautionary Statements

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.
P260: Do not breathe dust.
P281: Use personal protective equipment as required.
P308 + P313: IF EXPOSED or concerned: Get medical advice/attention.
P405: Store locked up.
P501: Dispose of contents/container to licensed disposal facility.

2.3: Hazards Not Otherwise Classified or Not Covered by GHS

Radioactive

2.4: Amount(s) of substances with unknown toxicity

None

3: Composition/Information on Ingredients

3.1: .Ingredient	.Weight%	.Formula	.CAS Number	.Mol Wt	.EC Number
ThI4	100	ThI4	7790-49-0	739.65	232-211-0

3.2: Other Hazardous components

none

3.3: Trade Secret Disclaimer

none

3.4: Synonyms

Thorium (IV) Iodide
thorium tetraiodide

4: First Aid Measures

4.1: First Aid

General

Remove person from area of exposure and remove any contaminated clothing

Consult with physician and provide this Safety Data Sheet

In contact with eyes

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention if irritation develops or persists

In contact with skin

Wash thoroughly with soap and plenty of water. Remove all contaminated clothing for proper laundering. Seek medical attention if irritation develops or persists.

If swallowed

If conscious and alert, rinse mouth and drink 2-4 cupfuls of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get medical aid.

If inhaled

Remove from exposure to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

4.2: Most important symptoms and effects; acute and delayed

Known human carcinogen.

May cause damage to organs through repeated or prolonged exposure.

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

If swallowed: Immediately call a POISON CENTER or doctor/ physician.

If inhaled : Immediately call a POISON CENTER or doctor/ physician.

5: Fire Fighting Measures

5.1: Fire extinguishing media

water or alcohol-resistant foam

carbon dioxide

dry chemical

5.2: Specific hazards arising from the substance or mixture

hydroiodic acid and hydroiodic acid fumes

thorium oxides

5.3: Special protective equipment and precautions for firefighters.

Wear self contained breathing apparatus for fire fighting if necessary

6: Accidental Release Measures

6.1: Personal precautions, protective equipment, and emergency procedures.

Evacuate personnel to safe areas.

For personal protection see section 8.

Avoid breathing dust.

Use personal protective equipment.

Avoid dust formation.

Ensure adequate ventilation.

6.2: Methods and materials for containment and cleaning up.

Keep in suitable, closed containers for disposal.

Sweep up and shovel.

6.3: Environmental precautions

Do not let product enter drains.

6.4: Disposal

See section 13.

Dispose of as low level radioactive waste.

7: Handling and Storage

7.1: Precautions for safe handling

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

See precautionary statements in section 2.2.

Avoid contact with skin and eyes.

Radioactive

7.2: Conditions for safe storage

Keep container tightly closed.

Store under inert gas.

Store away from moisture.

Store in a dry and well-ventilated place.

Radioactive

7.3: Incompatibilities

moisture sensitive

strong oxidizing agents

8: Exposure Controls/Personal Protection

8.1: Control parameters

OSHA permissible exposure limit (PEL)

not listed

ACGIH threshold limit value (TLV)

not listed

NIOSH recommended exposure limit (REL)

not listed

8.2: Engineering controls

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower

Use adequate ventilation to keep airborne concentrations low

8.3: Personal protective equipment

Eyes

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

Skin

Wear appropriate, chemical-resistant protective gloves to prevent skin exposure.

Clothing

Wear appropriate protective clothing to prevent skin exposure

Respirator

Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary

9: Physical and Chemical Properties

9.a: Appearance

State: Solid

Form: powder or spheres

Color: light yellow

9.b: Odor: no data available

9.c: Odor threshold: no data available

9.d: pH: no data available

9.e: Melting point / freezing point: 570 °C (1,058 °F)

9.f: Initial boiling point and range: 837 °C (1,539 °F)
9.g: Flashpoint: no data available
9.h: Evaporation rate: no data available
9.i: Flammability (solid, gas): no data available
9.j: Upper/lower flammability or explosive limits: no data available
9.k: Vapor pressure: no data available
9.l: Vapor density: no data available
9.m: Relative density: 6.0 gm/cm3
9.n: Water Solubility: soluble
9.o: Partition coefficient: n-octanol/water: no data available
9.p: Auto-ignition temperature: no data available
9.q: Decomposition temperature: no data available
9.r: Viscosity: no data available

10: Stability and Reactivity

10.1: Reactivity

no data available

10.2: Chemical stability

Stable under recommended storage conditions.

10.3: Possibility of hazardous reactions

no data available

10.4: Conditions to avoid

In the event of fire: see section 5

exposure to water

10.5: Incompatible materials

See section 7.3.

10.6: Hazardous decomposition products

Other decomposition products - no data available

In the event of fire: see section 5.2

11: Toxicological Information

11.1: Toxicity data

Acute toxicity - Oral

no data available

Acute toxicity - Dermal

no data available

Acute toxicity - Inhalation

No data available.

Skin corrosion/irritation

no data available

Eye damage/irritation

No data available.

Respiratory irritation

No data available.

Germ cell mutagenicity

no data available

Reproductive toxicity

no data available

Specific organ toxicity - single exposure

No data available.

Specific organ toxicity - repeated exposure

May cause damage to organs through repeated or prolonged exposure.

Aspiration hazard

No data available.

Additional information

No data available.

ACGIH carcinogenicity

The ACGIH has not identified any component of this product present at levels greater than or equal to 0.1% as a probable, possible or confirmed human carcinogen.

IARC carcinogenicity

Group 1: Carcinogenic to humans.

NTP carcinogenicity

The NTP has not identified any component of this product present at levels greater than or equal to 0.1% as a probable, possible or confirmed human carcinogen.

OSHA carcinogenicity

OSHA has not identified any component of this product present at levels greater than or equal to 0.1% as a probable, possible or confirmed human carcinogen.

11.2: Routes of exposure

oral

skin

eyes

11.3: Symptoms of exposure

See section 4.2

11.4: Delayed and immediate effects of esposure

Thorium can damage lungs via inhalation and if ingested will concentrate in the bones

To the best of our knowledge the toxicological properties have not been thoroughly investigated.

Known human carcinogen

12: Ecological Information

12.1: Ecotoxicity

Toxicity to fish

No data available

Toxicity to daphnia and other aquatic invertebrates

No data available

Toxicity to algae/bacteria

No data available

12.2: Persistence and degradability

no data available

12.3: Bioaccumulative potential

no data available

12.4: Mobility in soil

no data available

12.5: Other effects

no data available

13: Disposal Considerations

13.1: Waste treatment methods

No data available

13.2: Safe handling

See section 7.1 .

13.3: Product disposal

Contact a licensed professional waste disposal service to dispose of this material. After use follow local procedures for radioactive waste. Consult local, state, and federal regulations on the disposal of radioactive waste. Observe all federal, state, and local environmental regulations.

13.4: Packaging disposal

Dispose of as unused product.

14: Transport Information

14.1: DOT(US)

UN Number: 2912

Proper Shipping Name: Radioactive material, Low specific activity n.o.s

Packing Group:

Shipping Class(es): 7

Marine Pollutant: No

14.2: IMDG

UN Number: 2912

Proper Shipping Name: Radioactive material, Low specific activity n.o.s

Packing Group:

Shipping Class(es): 7

Marine Pollutant: No

14.3: IATA

UN Number: 2912

Proper Shipping Name: Radioactive material, Low specific activity n.o.s

Packing Group:

Shipping Class(es): 7

14.4: Special Shipping Precautions

None

15: Regulatory Information

15.1: TSCA inventory

This material is listed on the TSCA inventory.

15.2: SARA 302 components

This material is not subject to the reporting requirements of SARA Title III, Section 302.

15.3: SARA 313 components

This material is not subject to the reporting requirements of SARA Title III, Section 313.

15.4: SARA 313/312 hazards

Chronic health hazard.

15.5: Other information

Massachusetts Right To Know Components - This product does not contain materials listed on the Massachusetts Right to Know list

New Jersey Right To Know Components -This product does not contain materials listed on the New Jersey Right to Know list

California Prop. 65 Components - This product does contain chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Pennsylvania Right To Know Components -This product does not contain materials listed on the Pennsylvania Right to Know list

16: Additional Information

16.1: NFPA

Health: 2

Fire: 0

Reactivity: 0

Special:

16.2: HMIS

Health: 2

Chronic: *

Flammability: 0

Physical Hazard: 0

16.3: Disclaimers

For industrial use only. Not for drug, household or other uses

The information herein is believed to be accurate and reliable as of the date compiled. However, APL Engineered Materials, Inc. makes no representation, warranty, or guarantee of any kind with respect to the information on this data sheet or any use of the product based upon this information.

16.4: References

Information contained on this SDS sheet was obtained from some or all of the following sources: American Conference of Governmental Industrial Hygienists (ACGIH),TLVs and BEIs; National Institute for Occupational Safety and Health (NIOSH), Pocket Guide to Chemical Hazards: European Chemicals Agency, http://echa.europa.eu/; The National Institute of Health, U.S National Library of Medicine, TOXNET, Toxicology Data Network; and the Registry of Toxic Effects of Chemical Substances (RTECS) database.

16.5: Version

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Revision Date: 5/22/2015

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