SAFETY DATA SHEET

Issue Date 22-Sep-2020 **Revision Date** 22-Sep-2020 **Version** 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name Niobium Pentachloride

Other means of identification
Product Code SAC059
UN/ID No. 3260
Synonyms Niobium Pentachloride

Recommended use of the chemical and restrictions on use
Recommended Use Chemical intermediate.
Uses advised against

Details of the supplier of the safety data sheet
Manufacturer Address
ATI, 1000 Six PPG Place, Pittsburgh, PA
15222 USA
Emergency telephone number
Emergency Telephone Chemtrec: 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

This material is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1B
Specific target organ toxicity (single exposure)	Category 3

Label elements

Emergency Overview

Danger

Hazard statements
Harmful if swallowed
Causes severe skin burns and eye damage
May cause respiratory irritation

Appearance Powder **Physical state** Solid **Odor** Pungent, Slight chlorine

Precautionary Statements - Prevention
Wear protective gloves/protective clothing/eye protection

Do not breathe dust/fume
Wash hands thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area

Precautionary Statements - Response
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
IF ON SKIN (or hair): Brush off loose particles from skin. Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
Wash contaminated clothing before reuse

Precautionary Statements - Storage
Store in a dry place
Store in corrosion-resistant container

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Reacts violently with water
(EUH014)
Other Information
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3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms Niobium Pentachloride.

Chemical Name	CAS No.	Weight-%
Niobium Pentachloride	10026-12-7	> 99

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4. FIRST AID MEASURES

First aid measures

Eye contact Flush with water for 15 minutes. See a physician.

Skin Contact Brush off loose particles from skin. Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

Inhalation IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician or poison control center immediately.

Ingestion Do NOT induce vomiting. Have patient drink large quantities of water if able. Call Physician immediately for further instructions. Call a POISON CENTER or doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed

Symptoms May cause acute gastrointestinal effects if swallowed. Contact with moist skin may cause skin burns. May cause breathing difficulties if inhaled. May cause respiratory irritation.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Non-combustible.

Unsuitable extinguishing media Non-combustible. If a fire occurs in the area, avoid water contact with the product to prevent evolution of hazardous gases.

Specific hazards arising from the chemical
Non-combustible.

Hazardous combustion products Hydrogen chloride gas may cause respiratory and/or eye irritation.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters
Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required.

For emergency responders Use personal protective equipment as required. Follow Emergency Response Guidebook, Guide No. 154.

Environmental precautions

Environmental precautions Collect spillage to prevent release to the environment.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Sweep or shovel material into dry containers. Avoid creating uncontrolled dust. Wash the spill location thoroughly with water. Respiratory protection may be needed. Skin and eye protection should be used during cleanup.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Protect from moisture, reacts with water. Ensure adequate ventilation, especially in confined spaces. Handle under inert gas such as nitrogen or argon to maintain the integrity of the product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep in corrosion resistant containers. Keep in properly labeled containers. Keep in a dry, cool and well-ventilated place. Protect from direct sunlight. Containers may become pressurized. Handle and open container with care.

Incompatible materials Water, alcohols, phenols, and amines. Rubber, coatings, and some plastics. Reacts with metals to produce heat and corrosive gases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical Name	ACGIH TLV	OSHA PEL

Niobium Pentachloride 10026-12-7	-	-

Appropriate engineering controls

Engineering Controls Avoid generation of uncontrolled particles. Local exhaust ventilation during processing is recommended.

Individual protection measures, such as personal protective equipment

Eye/face protection If a risk of eye injury or irritation is present, appropriate eye protection is recommended; for example, tight-fitting goggles, foam-lined safety glasses, face shield, or other protective equipment that shields the eyes.

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection When particulates/fumes/gases are generated and if exposure limits are exceeded or irritation is experienced, proper approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid		
Appearance	Powder	**Odor**	Pungent, Slight chlorine
Color	yellow	**Odor threshold**	-

Property	**Values**	**Remarks • Method**
pH	<1	
Melting point / freezing point	205.8 °C	
Boiling point / boiling range	247.4 °C	
Flash point	-	Not applicable
Evaporation rate	-	Not applicable
Flammability (solid, gas)	-	Not flammable
Flammability Limit in Air		
Upper flammability limit:	-	
Lower flammability limit:	-	
Vapor pressure	-	Not applicable
Vapor density	-	Not applicable
Specific Gravity	-	
Water solubility	Reacts with water, hydrolyzes	
Solubility in other solvents	-	
Partition coefficient	-	
Autoignition temperature	-	Not applicable
Decomposition temperature	-	Not applicable
Kinematic viscosity	-	Not applicable
Dynamic viscosity	-	Not applicable
Explosive properties	Not applicable	
Oxidizing properties	Not applicable	

Other Information

Softening point	-
Molecular weight	270.17 g/mol
VOC Content (%)	Not applicable
Density	2.78 g/cm^3
Bulk density	-

10. STABILITY AND REACTIVITY

Reactivity
Reacts with water

Chemical stability
Stable under normal conditions.

Possibility of Hazardous Reactions
Reacts with water.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid
Dust formation and dust accumulation. Unintentional contact with water.

Incompatible materials
Water, alcohols, phenols, and amines. Rubber, coatings, and some plastics. Reacts with metals to produce heat and corrosive gases.

Hazardous Decomposition Products
Reacts with water to produce hydrogen chloride gas or hydrochloric acid and heat.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation May cause respiratory irritation.

Eye contact Causes severe eye damage.

Skin Contact Causes severe skin burns.

Ingestion Harmful if swallowed.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Niobium Pentachloride 10026-12-7	829 mg/kg bw	-	-

Information on toxicological effects

Symptoms May cause acute gastrointestinal effects if swallowed. May cause skin burns. May cause severe upper respiratory irritation if inhaled. May cause burning sensation or redness in the eyes.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Acute toxicity Harmful if swallowed.
Skin corrosion/irritation Causes severe skin burns.
Serious eye damage/eye irritation Causes severe eye damage.
Sensitization Product not classified.
Germ cell mutagenicity Product not classified.
Carcinogenicity Product not classified.

Reproductive toxicity Product not classified.
STOT - single exposure May cause respiratory irritation.
STOT - repeated exposure Product not classified.
Aspiration hazard Product not classified.

12. ECOLOGICAL INFORMATION

Ecotoxicity

This product as shipped is not classified for aquatic toxicity.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Niobium Pentachloride 10026-12-7	The 72 h EL50 of Niobium pentachloride to Pseudokirchneriella subcapitata was 533 mg/L.	The 96 h LL50 of Niobium pentachloride to Danio rerio was greater than 100 mg/L.	The 3 h EL50 of Niobium pentachloride for activated sludge was greater than 1,000 mg/L.	The 48 h EL50 of Niobium pentachloride to Daphnia magna was 1498 mg/L.

Other adverse effects

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

DOT Regulated

UN/ID No.	3260
Proper shipping name	Corrosive solid, acidic, inorganic, n.o.s. (Niobium Pentachloride)
Hazard Class	8
Packing Group	II
Special Provisions	IB8, IP2, IP4, T3, TP33
Emergency Response Guide Number	154

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Not Listed
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	Yes

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

U.S. EPA Label Information
EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	**Health hazards** 1	**Flammability** 0	**Instability** 1	**Physical and Chemical Properties** -
HMIS	**Health hazards** 2	**Flammability** 0	**Physical hazards** 1	**Personal protection** X

Issue Date 22-Sep-2020
Revision Date 22-Sep-2020
Revision Note
New Safety Data Sheet

Note:
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.

End of Safety Data Sheet

Additional information available from: Safety data sheets and labels available at ATImetals.com