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## Safety Data Sheet

**Material Name: ARSENIC PENTAFLUORIDE**

**SDS ID: MAT02015**

### Section 1 - PRODUCT AND COMPANY IDENTIFICATION

**Material Name**

ARSENIC PENTAFLUORIDE

**Synonyms**

ARSORANE, PENTAFLUORO-; ARSENIC FLUORIDE (ASF5); ARSENIC FLUORIDE; ASF5

**Chemical Family**

non-metallic, halides

**Product Use**

Industrial and Specialty Gas Applications.

**Restrictions on Use**

None known.

**Details of the supplier of the safety data sheet**

MATHESON TRI-GAS, INC.

150 Allen Road, Suite 302

Basking Ridge, NJ 07920

General Information: 1-800-416-2505

Emergency #: 1-800-424-9300 (CHEMTREC)

Outside the US: 703-527-3887 (Call collect)

### Section 2 - HAZARDS IDENTIFICATION

**Classification in accordance with paragraph (d) of 29 CFR 1910.1200.**

Gases Under Pressure - Compressed gas

Acute Toxicity - Oral - Category 3

Acute Toxicity - Inhalation - Gas - Category 3

Acute Toxicity - Inhalation - Vapor - Category 3

Skin Corrosion/Irritation - Category 2

Serious Eye Damage/Eye Irritation - Category 2A

Carcinogenicity - Category 1A

Reproductive Toxicity - Category 2

Specific Target Organ Toxicity - Single Exposure - Category 1 ( Cardiovascular system, , digestive tract, , kidneys, , liver, , nervous system, , respiratory system )

Specific Target Organ Toxicity - Single Exposure. - Category 3 ( respiratory tract irritation. )

Specific Target Organ Toxicity - Repeated Exposure - Category 1 ( Cardiovascular system, , blood, , digestive tract, , kidneys, , liver, , nervous system, , respiratory system, , skeletal system, , skin )

Hazardous to the Aquatic Environment - Acute - Category 1

Hazardous to the Aquatic Environment - Chronic - Category 1

**GHS Label Elements**

**Symbol(s)**



**Signal Word**

Danger

**Hazard Statement(s)**



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Contains gas under pressure; may explode if heated.  
Toxic if swallowed.  
Toxic if inhaled.  
Causes skin irritation.  
Causes serious eye irritation.  
May cause cancer.  
Suspected of damaging fertility or the unborn child.  
Causes damage to organs.  
May cause respiratory irritation.  
Causes damage to organs through prolonged or repeated exposure.  
Very toxic to aquatic life with long lasting effects.

### **Precautionary Statement(s)**

#### **Prevention**

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Do not breathe dust/fume/gas/mist/vapors/spray.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Avoid release to the environment.

#### **Response**

Collect spillage.  
If exposed: Call a POISON CENTER or doctor/physician.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
IF ON SKIN: Wash with plenty of soap and water.  
If skin irritation occurs: Get medical advice/attention.  
Take off contaminated clothing and wash before reuse.  
IF SWALLOWED: Immediately call a POISON CENTER/doctor.  
Rinse mouth.  
Call a POISON CENTER or doctor.  
Specific treatment (see label).

#### **Storage**

Store in a well-ventilated place. Keep container tightly closed.  
Store locked up.  
Protect from sunlight.

#### **Disposal**

Dispose of contents/container in accordance with local/regional/national/international regulations.

#### **Statement(s) of Unknown Acute Toxicity**

Oral 100% of the mixture consists of ingredient(s) of unknown acute toxicity.  
Inhalation 0% of the mixture consists of ingredient(s) of unknown acute toxicity.

#### **Statement(s) of Unknown Aquatic Toxicity**

0% of the mixture consists of ingredient(s) of unknown acute aquatic toxicity.  
0% of the mixture consists of ingredient(s) of unknown chronic aquatic toxicity.



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**Material Name: ARSENIC PENTAFLUORIDE****SDS ID: MAT02015****Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS**

CAS	Component Name	Percent
7784-36-3	ARSENIC PENTAFLUORIDE	100.0

**Section 4 - FIRST AID MEASURES****Inhalation**

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

**Skin**

If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115°F; 41-46°C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

**Eyes**

In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. Get medical attention immediately.

**Ingestion**

If swallowed, get medical attention.

**Most Important Symptoms/Effects****Acute**

Toxic if swallowed or if inhaled, respiratory tract irritation, skin irritation, Causes serious eye irritation, frostbite, cardiovascular system damage, digestive tract damage, kidney damage, liver damage, nervous system damage, respiratory system damage

**Delayed**

blood damage, bone damage, cardiovascular system damage, digestive tract damage, kidney damage, liver damage, nervous system damage, respiratory system damage, reproductive effects, skin damage, cancer

**Note to Physicians**

For inhalation, consider oxygen.

**Section 5 - FIRE FIGHTING MEASURES****Extinguishing Media****Suitable Extinguishing Media**

carbon dioxide, regular dry chemical, Large fires: Use regular foam or flood with fine water spray.

**Unsuitable Extinguishing Media**

None known.

**Special Hazards Arising from the Chemical**

Negligible fire hazard. Oxidizer. May ignite or explode on contact with combustible materials.

**Hazardous Combustion Products**

None known.

**Fire Fighting Measures**

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Use extinguishing agents appropriate for surrounding fire. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Do not get water directly on material. Reduce vapors with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Consider downwind evacuation if material is leaking.

**Special Protective Equipment and Precautions for Firefighters**

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Wear personal protective clothing and equipment such as self-contained breathing apparatus (SCBA) for protection against possible exposure.

### Section 6 - ACCIDENTAL RELEASE MEASURES

**Personal Precautions, Protective Equipment and Emergency Procedures**

Wear personal protective clothing and equipment, see Section 8.

**Methods and Materials for Containment and Cleaning Up**

Keep unnecessary people away, isolate hazard area and deny entry.

**Environmental Precautions**

Avoid release to the environment.

### Section 7 - HANDLING AND STORAGE

**Precautions for Safe Handling**

Do not breathe gas. Wash thoroughly after handling. Wear protective gloves. Wear protective eye/face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use recommended personal protective equipment. Use only outdoors or in a well-ventilated area. Do not eat, drink or smoke when using this product. Avoid release to the environment.

**Conditions for Safe Storage, Including any Incompatibilities**

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Protect from sunlight.

Subject to storage and handling regulations. U.S. OSHA 29 CFR 1910.106.

**Incompatible Materials**

bases, combustible materials, metals

### Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

**Component Exposure Limits**

<b>ARSENIC PENTAFLUORIDE</b>	<b>7784-36-3</b>
ACGIH:	0.01 mg/m3 TWA asAs (related to Arsenic inorganic compounds)
NIOSH:	0.002 mg/m3 Ceiling asAs 15 min (related to Arsenic inorganic compounds)
	SK: DIR(IRR) (Aug 2017 ) (related to Arsenic inorganic compounds)
	5 mg/m3 IDLH asAs (related to Arsenic inorganic compounds)
OSHA (US):	10 µg/m3 TWA asAs (related to Arsenic inorganic compounds)
	10 µg/m3 TWA (See 29 CFR 1910.1018, except Arsine ) asAs ; 5 µg/m3 Action Level (See 29 CFR 1910.1018, except Arsine ) asAs (related to Arsenic inorganic compounds)

**ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)**

There are no biological limit values for any of this product's components.

**Engineering Controls**

Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.



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**Material Name: ARSENIC PENTAFLUORIDE****SDS ID: MAT02015****Individual Protection Measures, such as Personal Protective Equipment****Eye/face protection**

Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**Skin Protection**

Wear appropriate chemical resistant clothing.

**Respiratory Protection**

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

**Glove Recommendations**

Wear appropriate chemical resistant gloves. OSHA REGULATED SUBSTANCES: U.S. OSHA 29 CFR 1910.1018.

**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	Not available	<b>Physical State</b>	gas
<b>Odor</b>	Not available	<b>Color</b>	colorless
<b>Odor Threshold</b>	Not available	<b>pH</b>	Not available
<b>Melting Point</b>	-80 °C (-112 °F)	<b>Boiling Point</b>	-53 °C (-63 °F)
<b>Boiling Point Range</b>	Not available	<b>Freezing point</b>	Not available
<b>Evaporation Rate</b>	Not available	<b>Flammability (solid, gas)</b>	Not available
<b>Autoignition Temperature</b>	Not available	<b>Flash Point</b>	Not available
<b>Lower Explosive Limit</b>	Not available	<b>Decomposition temperature</b>	Not available
<b>Upper Explosive Limit</b>	Not available	<b>Vapor Pressure</b>	11790 mmHg @ 20 °C
<b>Vapor Density (air=1)</b>	Not available	<b>Specific Gravity (water=1)</b>	Not available
<b>Water Solubility</b>	(Reacts )	<b>Partition coefficient: n-octanol/water</b>	Not available
<b>Viscosity</b>	Not available	<b>Kinematic viscosity</b>	Not available
<b>Solubility (Other)</b>	Not available	<b>Density</b>	7.71 g/L
<b>Physical Form</b>	fuming gas	<b>Molecular Formula</b>	AS-F5
<b>Molecular Weight</b>	169.91		

**Solvent Solubility****Soluble**

alcohol, ether, Benzene

**Section 10 - STABILITY AND REACTIVITY****Reactivity**

No reactivity hazard is expected.

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**Material Name: ARSENIC PENTAFLUORIDE****SDS ID: MAT02015****Chemical Stability**

Avoid contact with water or moisture. May react with evolution of heat on contact with water.

**Possibility of Hazardous Reactions**

Will not polymerize.

**Conditions to Avoid**

Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.

**Incompatible Materials**

bases, combustible materials, metals

**Hazardous decomposition products**

oxides of arsenic, fluorinated compounds

**Section 11 - TOXICOLOGICAL INFORMATION****Information on Likely Routes of Exposure****Inhalation**

Toxic if inhaled irritation (possibly severe), vomiting, digestive disorders, chest pain, difficulty breathing, headache, bluish skin color, lung congestion, nerve damage, white lines on the fingernails, hair loss, tearing, tingling sensation, paralysis, cancer

**Skin Contact**

irritation (possibly severe), blisters, frostbite, itching

**Eye Contact**

irritation (possibly severe), frostbite, itching, tearing, blurred vision

**Ingestion**

frostbite

**Acute and Chronic Toxicity****Component Analysis - LD50/LC50**

The components of this material have been reviewed in various sources and no selected endpoints have been identified.

**Product Toxicity Data****Acute Toxicity Estimate**

Inhalation - Gas	700 ppm
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**Immediate Effects**

Toxic if inhaled, respiratory tract irritation, skin irritation, Causes serious eye irritation, frostbite, cardiovascular system damage, digestive tract damage, kidney damage, liver damage, nervous system damage, respiratory system damage

**Delayed Effects**

blood damage, bone damage, cardiovascular system damage, digestive tract damage, kidney damage, liver damage, nervous system damage, respiratory system damage, reproductive effects, skin damage, cancer

**Irritation/Corrosivity Data**

No data available.

**Respiratory Sensitization**

No data available.

**Dermal Sensitization**

No data available.

**Component Carcinogenicity**

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ACGIH:	A1 - Confirmed Human Carcinogen (related to Arsenic inorganic compounds)
IARC:	Supplement 7 [1987] ; Monograph 23 [1980] (this evaluation applies to the group of compounds as a whole and not necessarily to all individual compounds within the group ) (related to Arsenic compounds) (Group 1 (carcinogenic to humans))
NTP:	Known Human Carcinogen (related to Arsenic inorganic compounds)
DFG:	Category 1 (causes cancer in man ) (related to Arsenic inorganic compounds)
OSHA:	Present (related to Arsenic compounds)
OSHA:	see 29 CFR 1910.1018 (except Arsine ) (related to Arsenic inorganic compounds)
NIOSH:	potential occupational carcinogen (related to Arsenic inorganic compounds)

**Germ Cell Mutagenicity**

No data available.

**Tumorigenic Data**

No data available

**Reproductive Toxicity**

No data available.

**Specific Target Organ Toxicity - Single Exposure**

Cardiovascular system. digestive tract. kidney. liver. nervous system. respiratory system.

**Specific Target Organ Toxicity - Repeated Exposure**

Cardiovascular system. digestive tract. kidney. liver. nervous system. blood. skeletal system. skin.

**Aspiration hazard**

No data available.

**Medical Conditions Aggravated by Exposure**

diabetes, heart or cardiovascular disorders, immune system disorders or allergies, kidney disorders, liver disorders, nervous system disorders, skin disorders and allergies

**Section 12 - ECOLOGICAL INFORMATION****Component Analysis - Aquatic Toxicity**

No LOLI ecotoxicity data are available for this product's components.

**Persistence and Degradability**

Hydrolyzes on contact with water.

**Bioaccumulative Potential**

No information available for the product.

**Mobility**

No information available for the product.

**Section 13 - DISPOSAL CONSIDERATIONS****Disposal Methods**

Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D003. Hazardous Waste Number(s): D004. Dispose of in accordance with U.S. EPA 40 CFR 262 for concentrations at or above the Regulatory level. Regulatory level- 5.0 mg/L. Dispose in accordance with all applicable regulations.

**Component Waste Numbers**

The U.S. EPA has not published waste numbers for this product's components.

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### Section 14 - TRANSPORT INFORMATION

**US DOT Information:****Shipping Name:** COMPRESSED GAS, TOXIC, N.O.S. , ( Contains: ARSENIC PENTAFLUORIDE )**Hazard Class:** 2.3**UN/NA #:** UN1955**Required Label(s):** 2.3

Marine pollutant

**TDG Information:****Shipping Name:** COMPRESSED GAS, TOXIC, N.O.S. , ( Contains: ARSENIC PENTAFLUORIDE )**Hazard Class:** 2.3**UN#:** UN1955**Required Label(s):** 2.3

Marine pollutant

**International Bulk Chemical Code**

This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

### Section 15 - REGULATORY INFORMATION

**U.S. Federal Regulations**

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

<b>ARSENIC PENTAFLUORIDE</b>	<b>7784-36-3</b>
SARA 313:	0.1 % de minimis concentration (related to Arsenic inorganic compounds)

**SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories**

Gas Under Pressure; Carcinogenicity; Acute toxicity; Reproductive Toxicity; Skin Corrosion/Irritation; Serious Eye Damage/Eye Irritation; Specific Target Organ Toxicity

**U.S. State Regulations**

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
<b>ARSENIC PENTAFLUORIDE</b>	<b>7784-36-3</b>	Yes	No	Yes	Yes	Yes

**The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):**

WARNING! This product contains a chemical known to the state of California to cause cancer

<b>ARSENIC PENTAFLUORIDE</b>	<b>7784-36-3</b>
Carc:	carcinogen , 2/27/1987 (related to Arsenic inorganic compounds)

**Canada Regulations****Canadian WHMIS Ingredient Disclosure List (IDL)**

The components of this product are either not listed on the IDL or are present below the threshold limit listed on the IDL.

**WHMIS Classification**

ACD1EF





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### Component Analysis - Inventory

#### ARSENIC PENTAFLUORIDE (7784-36-3)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN - NCI (Draft)
Yes	NSL	EIN	No	No	No	No	Yes	No	Yes	No	No	Yes	No	No

### Section 16 - OTHER INFORMATION

#### NFPA Ratings

Health: 3 Fire: 0 Reactivity: 1

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

#### Summary of Changes

Updated: 05/01/2015

#### Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania\*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC - European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) , KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX - Mexico; NDSL - Non-Domestic Substance List (Canada); NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL - Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH - Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TCCA - Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW - Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN NCI (Draft) - Vietnam National Chemicals Inventory (NCI) (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada) .

#### Other Information

#### Disclaimer:



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