SAFETY DATA SHEET

Preparation Date: 09/01/2016 **Revision Date:** Not Applicable **Revision Number:** Not Applicable

1. IDENTIFICATION

Product identifier

Product code: I1246
Product Name: Ishikawas Reagent, [Fluorinating Reagent]

Other means of identification
Synonyms: N,N-Diethyl-1,1,2,3,3,3-hexafluoro-1-propanamine
CAS #: 309-88-6
RTECS # Not available
CI#: Not available

Recommended use of the chemical and restrictions on use
Recommended use: Laboratory research.
Uses advised against Not for food or drug use.

Supplier:
Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000.
Order Online At: https://www.spectrumchemical.com
Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Flammable liquids	Category 3

Label elements

Danger

Hazard statements
Causes severe skin burns and eye damage
Flammable liquid and vapor

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available

Precautionary Statements - Prevention
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/ .? /equipment
Use only non-sparking tools
Take precautionary measures against static discharge

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
IN CASE OF FIRE: Use dry chemical, water spray, alcohol-resistant foam or CO2 to extinguish.
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.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Store in a well-ventilated place. Keep cool

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Ishikawas Reagent, [Fluorinating Reagent]	309-88-6	100

4. FIRST AID MEASURES

First aid measures

General Advice: National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

Skin Contact: Wash off immediately with soap and plenty of water. Continue flushing with plenty of water

for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Eye Contact: Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms Severe skin and eye irritation or burns. Burning sensation in the mouth and stomach. Can burn mouth, throat, and stomach. May cause perforation of the digestive tract. May cause irritation of respiratory tract.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders
First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Dry chemical. Carbon dioxide (CO2). Water spray, mist, or foam.

Unsuitable Extinguishing Media: Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon Oxides. Hydrogen fluoride. Nitrogen Oxides.

Specific hazards: Flammable
May be ignited by heat, sparks or flames
Container explosion may occur under fire conditions or when heated
Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks)

Special Protective Actions for Firefighters

Specific Methods: For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out. Dike fire-control water for later disposal; do not scatter the material.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus

pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Remove all sources of ignition. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Absorb spill with inert material (e.g. vermiculite, dry sand or earth). In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. All equipment used when handling the product must be grounded. Remove all sources of ignition. Keep away from incompatible materials.

Safe Handling Advice
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Do not ingest. Keep away from sources of ignition - no smoking. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Keep container tightly closed in a dry and well-ventilated place. Moisture sensitive. Protect from moisture. Store away from incompatible materials. Store under inert gas. Packed under Argon. Store at room temperature in the original container. Store in a segregated and approved area.

Incompatible Materials:
Oxidizing agents
Bases
Moisture
Combustible materials

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WHEEL
Ishikawas Reagent,	309-88-6	None	None	None	None

[Fluorinating Reagent]					

Canada

Components	CAS-No.	**Canada - Alberta**	**Canada - British Columbia**	**Canada - Ontario**	**Canada - Quebec**
Ishikawas Reagent, [Fluorinating Reagent]	309-88-6	None	None	None	None

Australia and Mexico

Components	CAS-No.	**Australia**	**Mexico**
Ishikawas Reagent, [Fluorinating Reagent]	309-88-6	None	None

Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation, especially in confined areas. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles or Face-shield

Skin and body protection: Gloves. Long sleeved clothing. Chemical resistant apron.

Respiratory protection: Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:
Liquid

Appearance:
Clear.

Color:
Colorless to pale yellow.

Odor:
No information available.

Taste
No information available.

Formula:
C7H11F6N

Molecular/Formula weight:
223.16

Flammability:
Combustible

Flashpoint (°C/°F):
40°C (104°F)

Flash Point Tested according to:
Closed cup

Autoignition Temperature (°C/°F):
No information available

Lower Explosion Limit (%):
No information available

Upper Explosion Limit (%):
No information available

Melting point/range(°C/°F):
No information available

Decomposition temperature(°C/°F):
No information available

Boiling point/range(°C/°F):
56°C (133°F)

Bulk density:
No information available

Density (g/cm3):
1.23

Specific gravity:
No information available

pH:
No information available

Vapor pressure @ 20°C (kPa):
No information available

Evaporation rate:
No information available

Vapor density:
No information available

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

Partition coefficient (n-octanol/water):
No information available

Viscosity:
No information available

Miscibility:
No information available

Solubility:
Ether
Acetone

10. STABILITY AND REACTIVITY

Reactivity
Reactive with oxidizing agents
Reactive with bases

Chemical stability

Stability: Moisture Sensitive. Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Exposure to moisture. Ignition sources. Incompatible materials.

Incompatible Materials: Oxidizing agents
Bases
Moisture
Combustible materials

Hazardous decomposition products: Carbon oxides. Hydrogen fluoride gas. Nitrogen oxides (NOx).

Other Information
Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Skin. Eyes. Inhalation. Ingestion.

Acute Toxicity

Component Information

Ishikawas Reagent, [Fluorinating Reagent]	
CAS-No.	309-88-6

LD50/oral/rat = No information available
LD50/oral/mouse = No information available
LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No infomation available
Other LD50 or LC50information = No information available

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = No information available

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Corrosive. Contact causes severe skin irritation and possible burns. Can cause burning pain, inflammation and blisters.

Eye Contact: Causes severe irritation and burns. Corrosive to the eyes and may cause severe damage including blindness. Can cause severe injury.

Inhalation May cause irritation of respiratory tract.

Ingestion Causes digestive or gastrointestinal tract burns. May cause perforation of the digestive tract. Corrosive to the mouth, throat, and stomach. Symptoms may include a burning sensation in the mouth, throat, and stomach. Ingestion may cause nausea, vomiting.

Aspiration hazard No information available.

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

Chronic Toxicity No information available.

Sensitization: No information available.

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Ishikawas Reagent, [Fluorinating Reagent]	309-88-6	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available.
STOT - repeated exposure No information available.
Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Ishikawas Reagent, [Fluorinating Reagent]	309-88-6	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN2920
Proper Shipping Name: Corrosive liquids, flammable, n.o.s. (N,N-diethyl-1,1,2,3,3-hexafluoropropylamine)
Hazard Class: 8
Subsidiary Class 3
Packing group: II
Emergency Response Guide Number 132
Marine Pollutant No data available

DOT RQ (lbs):	No information available
Special Provisions	B2, IB2, T11, TP2, TP27
Symbol(s):	[DOT]: (G) - Identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parentheses, in association with the basic description.
Description:	UN2920, Corrosive liquids, flammable, n.o.s. (Ishikawas Reagent, [Fluorinating Reagent]), 8 (3), II

TDG (Canada)

UN-No:	UN2920
Proper Shipping Name:	Corrosive liquid, flammable, n.o.s.
Hazard Class:	8
Subsidiary Risk:	3
Packing Group:	II
Marine Pollutant	No Information available
Description:	UN2920, Corrosive liquid, flammable, n.o.s. (Ishikawas Reagent, [Fluorinating Reagent]), 8 (3), II

ADR

UN-No:	UN2920
Proper Shipping Name:	Corrosive liquid, flammable, n.o.s.
Hazard Class:	8
Packing Group:	II
Subsidiary Risk:	3
Special Provisions	274
Description:	UN2920, Corrosive liquid, flammable, n.o.s. (Ishikawas Reagent, [Fluorinating Reagent]), 8 (3), II

IMO / IMDG

UN-No:	UN2920
Proper Shipping Name:	Corrosive liquids, flammable, n.o.s. (N,N-diethyl-1,1,2,3,3-hexafluoropropylamine)
Hazard Class:	8
Subsidiary Risk:	3
Packing Group:	II
Marine Pollutant	No information available
EMS:	F-E
Special Provisions	274
Description	UN2920, Corrosive liquid, flammable, n.o.s. (Ishikawas Reagent, [Fluorinating Reagent]), 8 (3), II

RID

UN-No:	UN2920
Proper Shipping Name:	Corrosive liquid, flammable, n.o.s.
Hazard Class:	8
Subsidiary Risk:	3
Packing Group:	II
Special Provisions	274
Description:	UN2920, Corrosive liquid, flammable, n.o.s. (Ishikawas Reagent, [Fluorinating Reagent]), 8 (3), II

ICAO

UN-No:	UN2920
Proper Shipping Name:	Corrosive liquid, flammable, n.o.s.
Hazard Class:	8
Subsidiary Risk:	3
Packing Group:	II
Description:	UN2920, Corrosive liquid, flammable, n.o.s. (Ishikawas Reagent, [Fluorinating Reagent]), 8 (3), II

IATA

UN-No:	UN2920
Proper Shipping Name:	Corrosive liquid, flammable, n.o.s.
Hazard Class:	8
Subsidiary Risk:	3
Packing Group:	II
ERG Code:	8F
Special Provisions	No information available
Description:	UN2920, Corrosive liquid, flammable, n.o.s. (Ishikawas Reagent, [Fluorinating Reagent]), 8 (3), II

15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Ishikawas Reagent, [Fluorinating Reagent]	309-88-6	Not Listed	Not present	Not present	Not present	Not present	Not present	Not present

U.S. Regulations

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Ishikawas Reagent, [Fluorinating Reagent]	309-88-6	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
Ishikawas Reagent, [Fluorinating Reagent]	309-88-6	None	None	None	None	None

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Ishikawas Reagent, [Fluorinating Reagent]	309-88-6	Not Applicable	Not Applicable

Canada

WHMIS hazard class:
B2 Flammable liquid
E Corrosive material

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Components	CAS-No.	**Canada (DSL)**	**Canada (NDSL)**
Ishikawas Reagent, [Fluorinating Reagent]	309-88-6	Not Listed	Not Listed

Components	CAS-No.	**CEPA Schedule I - Toxic Substances**
Ishikawas Reagent, [Fluorinating Reagent]	309-88-6	Not listed
Components	CAS-No.	**CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting**
Ishikawas Reagent, [Fluorinating Reagent]	309-88-6	Not listed

EU Classification

R-phrase(s)

R10 - Flammable.
R34 - Causes burns.

S -phrase(s)

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

Components	CAS-No.	**Classification**	**Concentration Limits:**	**Safety Phrases**
Ishikawas Reagent, [Fluorinating Reagent]	309-88-6		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
C - Corrosive.

C

16. OTHER INFORMATION

Preparation Date: 09/01/2016
Revision Date: Not Applicable
Prepared by: Roumann Pangilinan

Disclaimer: All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against

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End of Safety Data Sheet