

SAFETY DATA SHEET

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

Product identifier

Product Name IV-21

Other means of identification

Product Description 100 µg/mL: As, Be, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory chemicals.

Uses advised against No information available

Details of the supplier of the safety data sheet

Company

Inorganic Ventures
300 Technology Drive
Christiansburg, VA 24073
Phone: 1(800) 669-6799
Email: info@inorganicventures.com

Emergency Telephone Number

Chemtrec 1-800-424-9300 (North America)
Chemtrec +1 703-741-5970 (International)

2. HAZARDS IDENTIFICATION

GHS

Classification

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Corrosive to metals	Category 1

Label Elements

Danger

Hazard statements

Causes skin irritation
Causes serious eye damage
May cause an allergic skin reaction
May cause cancer
May be corrosive to metals

**Appearance** clear /GREEN**Physical state** Liquid**Odor** Odorless**Precautionary Statements - Prevention**

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Wash face, hands and any exposed skin thoroughly after handling
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Contaminated work clothing should not be allowed out of the workplace
 Wear protective gloves
 Keep only in original container

Precautionary Statements - Response**Eyes**

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

Skin

IF ON SKIN: Wash with plenty of soap and water
 Take off contaminated clothing and wash before reuse
 If skin irritation or rash occurs: Get medical advice/attention

Spill

Absorb spillage to prevent material damage

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

- Toxic to aquatic life

Other Information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Weight-%
Nitric acid	7697-37-2	3.5
Beryllium di(acetate)	543-81-7	0.11278
Copper	7440-50-8	0.01

4. FIRST AID MEASURES

Description of first aid measures

General Advice	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
Eye Contact	Immediate medical attention is required. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.
Skin Contact	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Inhalation	Call a physician or poison control center immediately. Remove to fresh air. If breathing is difficult, give oxygen. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.
Ingestion	Immediate medical attention is required. Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person.
Self-protection of the first aider	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects	Burn. Difficulty in breathing.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Decomposition by contact with water may generate vapors which can be ignited by heat or open flame.

Special Exposure Hazards Arising from the Substance/Mixture

The product causes burns of eyes, skin and mucous membranes Thermal decomposition can lead to release of irritating gases and vapors

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective Equipment and Precautions 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	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Use personal protective equipment as required. Do not get in eyes, on skin, or on clothing.
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Environmental precautions**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up**Methods for Cleaning up**

Dam up. Neutralise with lime milk; soda. Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling**Handling**

Wear personal protective equipment. Ensure adequate ventilation In case of insufficient ventilation, wear suitable respiratory equipment Do not get in eyes, on skin, or on clothing Do not breathe vapors or spray mist.

Conditions for safe storage, including any incompatibilities**Storage Conditions**

Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible Products

None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters**Exposure Guidelines**

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Nitric acid 7697-37-2	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm TWA: 5 mg/m ³ (vacated) TWA: 2 ppm (vacated) TWA: 5 mg/m ³ (vacated) STEL: 4 ppm (vacated) STEL: 10 mg/m ³	IDLH: 25 ppm TWA: 2 ppm TWA: 5 mg/m ³ STEL: 4 ppm STEL: 10 mg/m ³
Beryllium di(acetate) 543-81-7	TWA: 0.00005 mg/m ³ Be inhalable particulate matter RS	TWA: 0.2 µg/m ³ (vacated) TWA: 2 µg/m ³ (vacated) STEL: 25 µg/m ³ Ceiling: 2 µg/m ³	IDLH: 4 mg/m ³ Ceiling: 0.0005 mg/m ³
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume	TWA: 0.1 mg/m ³ TWA: 1 mg/m ³ (vacated) TWA: 0.1 mg/m ³	IDLH: 100 mg/m ³ TWA: 1 mg/m ³ TWA: 0.1 mg/m ³

Appropriate engineering controls**Engineering Measures**

Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment**Eye Protection**

Tightly fitting safety goggles Face-shield

Skin and Body Protection

Impervious clothing Boots Chemical resistant apron

Hand Protection

Impervious gloves

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing and gloves, including the

inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid
Appearance	clear /GREEN
Odor	Odorless
pH - VALUE 1	No data available
Melting point / melting range	No data available
Initial boiling point and boiling range	100 °C / 212 °F
Vapor pressure @20 °C (kPa)	No data available
Relative vapor density	No data available
Relative Density	No data available
Specific gravity - VALUE 1	No data available
Water solubility	Miscible
Partition coefficient: n-octanol/water	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Dynamic viscosity - VALUE 1	No data available
Explosive properties	No information available
Oxidizing Properties	No information available
VOC content	No information available

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous polymerization None under normal processing.

Conditions to Avoid

None known.

Incompatible materials

Bases Cyanides

Hazardous decomposition products

Nitrogen oxides (NOx). Hydrogen fluoride.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	The product causes burns of eyes, skin and mucous membranes
Inhalation	Causes burns. Corrosive to respiratory system. Inhaled corrosive substances can lead to a

toxic edema of the lungs. Contact with moist mucous membranes of the respiratory system can cause caustic condition resulting in burns. Aspiration may cause pulmonary edema and pneumonitis.

Eye Contact	Causes burns.
Skin Contact	Causes burns.
Ingestion	Can burn mouth, throat, and stomach.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Nitric acid - 7697-37-2	-	-	= 2500 ppm (Rat) 1 h
Copper - 7440-50-8	-	-	> 5.11 mg/L (Rat) 4 h

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

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

Sensitization No information available.
Mutagenic Effects No information available.

Carcinogenic effects

Chemical name	ACGIH	IARC	NTP	OSHA
Nitric acid 7697-37-2		Group 1 - Carcinogenic to humans Group 2A - Probably carcinogenic to humans		Present
Beryllium di(acetate) 543-81-7	A1 - Confirmed Human Carcinogen	Group 1 - Carcinogenic to humans	Known Human Carcinogen	Present

Reproductive Toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure May cause disorder and damage to the. Central nervous system. Nervous system. lungs. Respiratory system.
Target organ effects Skin, Eyes, Respiratory system.
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	88668 mg/kg
ATEmix (inhalation-dust/mist)	10.8 mg/L
ATEmix (inhalation-vapor)	92 mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects

Contains 0 % of components with unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Copper 7440-50-8	EC50: 0.0426 - 0.0535mg/L (72h, Pseudokirchneriella subcapitata) EC50: 0.031 - 0.054mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 0.0068 - 0.0156mg/L (96h, Pimephales promelas) LC50: <0.3mg/L (96h, Pimephales promelas) LC50: =0.2mg/L (96h, Pimephales promelas) LC50: =0.052mg/L (96h, Oncorhynchus mykiss) LC50: =1.25mg/L (96h, Lepomis macrochirus)		EC50: =0.03mg/L (48h, Daphnia magna)

		LC50: =0.3mg/L (96h, Cyprinus carpio) LC50: =0.8mg/L (96h, Cyprinus carpio) LC50: =0.112mg/L (96h, Poecilia reticulata)		
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Persistence and Degradability

No information available.

Bioaccumulation

No information available.

Chemical name	Partition coefficient
Nitric acid 7697-37-2	-2.3

13. DISPOSAL CONSIDERATIONS**Waste treatment methods**

Waste from Residues/Unused Products Dispose of in accordance with federal, state and local regulations

Contaminated Packaging Do not reuse empty containers.

Chemical name	California Hazardous Waste Status
Nitric acid 7697-37-2	Toxic Corrosive Ignitable
Beryllium di(acetate) 543-81-7	Toxic
Copper 7440-50-8	Toxic

14. TRANSPORT INFORMATION**IMDG**

14.1. UN-No UN3264

14.2. Proper shipping name Corrosive liquid, acidic, inorganic, n.o.s

14.3. Transport hazard class(es) 8

14.4. Packing Group III

Description Not applicable

14.5. Marine Pollutant None

14.6. Special Provisions None

No information available Transport No information available

in bulk according to Annex II of MARPOL 73/78 and the IBC Code

RID

14.1. UN-No UN3264

14.2. Proper shipping name Corrosive liquid, acidic, inorganic, n.o.s

14.3. Transport hazard class(es) 8

14.4. Packing Group III

Description Not applicable

14.5. Environmental hazard None

14.6. Special Provisions None

ADR

14.1. UN-No	UN3264
14.2. Proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s
14.3. Transport hazard class(es)	8
14.4. Packing Group	III
Description	Not applicable
14.5. Environmental hazard	None
14.6. Special Provisions	None

ICAO

14.1. UN-No	UN3264
14.2. Proper Shipping Name	Corrosive liquid, acidic, inorganic, n.o.s
14.3. Hazard Class	8
14.4. Packing Group	III
Description	Not applicable
14.5. Environmental hazard	None
14.6. Special Provisions	None

IATA-DGR

14.1. UN-No	UN3264
14.2. Proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s
14.3. Transport hazard class(es)	8
14.4. Packing Group	III
Description	Not applicable
14.5. Environmental hazard	None
14.6. Special Provisions	None

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AIIC	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 Commercial Chemical Substances/EU 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

U.S. Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Nitric acid - 7697-37-2	7697-37-2	3.5	1.0
Beryllium di(acetate) - 543-81-7	543-81-7	0.11278	0.1
Copper - 7440-50-8	7440-50-8	0.01	1.0

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	Not classified
Fire hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Nitric acid 7697-37-2	1000 lb			X
Beryllium di(acetate) 543-81-7		X		
Copper 7440-50-8		X	X	

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Nitric acid 7697-37-2	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ
Copper 7440-50-8	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

U.S. State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals:

Chemical name	California Proposition 65
Beryllium di(acetate) - 543-81-7	Carcinogen
Lithium carbonate - 554-13-2	Developmental
Vanadium pentoxide - 1314-62-1	Carcinogen
Lead nitrate - 10099-74-8	Carcinogen
Nickel - 7440-02-0	Carcinogen
Cadmium and compounds (as Cd) - 7440-43-9	Carcinogen Developmental Male Reproductive
Cobalt - 7440-48-4	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Nitric acid 7697-37-2	X	X	X
Beryllium di(acetate) 543-81-7	X		X
Copper 7440-50-8	X	X	X

U.S. EPA Label Information

Difference between SDS and EPA Pesticide label

16. OTHER INFORMATION

Revision date 30-Jul-2026

Revision Note

No information available

Disclaimer

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 SDS