Safety Data Sheet (SDS)

Section 1: Identification
Product identifier: Vilella's Reagent
Other name(s): Vilella's Etch
Item number(s): 121, 122
Identified use: SU24 Scientific research and development.
Details of the supplier of the safety data sheet:
ES Laboratory, LLC
2041 E. Gladstone St. Unit N Glendora, CA 91740 USA
Tel: 626-208-9011
Emergency telephone number:
CHEMTREC® 1-800-424-9300 (US & Canada Only)

Section 2: Hazard(s) Identification

Hazardous classification of the substance or mixture:

Hazard Class	Category code
Flammable liquid:	**2**
Skin irritation	**2**
Eye irritation	**2A**
Skin sensitization	**1**
Acute toxicity (oral)	**3**
Specific Target Organ Toxicity – Single Exposure:	**2**

Signal word: Danger
Pictogram:

Hazard statement(s):

H225	Highly flammable liquid and vapor.
H315+H319	Cause skin irritation and serious eye irritation.
H317	May cause allergic skin reaction.
H301	Toxic if swallowed.
H371	May cause damage to organs.

Precautionary statement(s):

P210	Keep away from heat/sparks/open flames/hot surfaces – No smoking.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response statement(s):

P303+P361+P353	IF ON SKIN (or hair): remove/take off immediately all contaminated clothing. Rinses skin with water/shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301+P330+P331+P311	IF SWALLOWED: rinse mouth. DO NOT induce vomiting. Call a POISON CENTER or doctor/physician.

Storage statement(s):

P403+P233+P235	Store in a well-ventilated place. Keep container tightly closed. Keep cool.
P405	Stored locked up.

Disposal statement(s):

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified: None.
Label elements: See tables above

HMIS Ratings:
Health: 2
Flammability: 3
Reactivity: 1

NFPA Ratings:
Health: 2
Flammability: 3
Reactivity: 1
Special hazard: None

Section 3: Composition/Information on Ingredients

Component	CAS No.	Concentration
Ethanol (ethyl alcohol)	64-17-5	Balance
Hydrochloric acid	7647-01-0	5%
Isopropanol	67-63-0	3-5 %
Methanol (methyl alcohol)	67-56-1	3-5 %
Picric Acid	88-89-1	1%

Any concentration shown as a range is to protect the confidentiality or is due to batch variation. Only hazardous components are shown.

Section 4: First-Aid Measures

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical aid immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid immediately.
Skin contact: Wash the areas of contact with water for at least 15 minutes while removing contaminated clothing and shoes. Skin stains may be removed using reagent alcohol or dilute Ammonium Hydroxide Solution. Get medical aid immediately.
Ingestion: Rinse mouth. Do not induce vomiting. Get medical aid immediately.
Most important symptoms and effects, both acute and delayed: May stain skin.
Recommendation for immediate medical care and special treatment needed, when necessary: No further relevant information.

Section 5: Fire-Fighting Measures

Extinguishing media: Dry chemical, "alcohol foam", carbon dioxide, or water spray.
Special hazards arising from the substance or mixture: In the case of fire, the following can be released: acidic liquid, carbon monoxide, and carbon dioxide.
Special protective equipment or precautions for firefighters: Wear full protective clothing and self-contained respirator.

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources.
Environmental precautions: Do not allow the material to be released to the environment without proper government permits.
Methods and materials for containment and cleaning up: Absorb with a liquid binding material (sand, diatomite, acid binder, universal binders, sawdust). Dispose contaminated material as waste according to section 13. Ensure adequate ventilation. Keep away from ignition sources.

Section 7: Handling and Storage

Precautions for safe handling: Wipe clean the screw top of the container before sealing. Ensure good ventilation in the workplace. Protect against electrostatic charges. Fume can combine with air to form and explosive mixture.
Condition for safe storage: Keep container tightly sealed. Store in an approved flammable liquid storage container/area.
Incompatibilities: Store away from oxidizing agents, strong bases. Do not store on concrete floors (can form explosive calcium picrate). May react with various substances, see Section 10.
Specific storage requirement(s): Inspect the content periodically. Do not let it dry completely. Keep wetted with ethanol. Dispose of content as a hazardous waste within one year of initial receipt.

Section 8: Exposure Controls/Personal Protection

Exposure Limits

Component	CAS No.	ACGIH TLV	OSHA PEL
Ethanol (ethyl alcohol)	64-17-5	1000 ppm STEL	1000 ppm TWA
Methanol (methyl alcohol)	67-56-1	200 ppm TWA skin 250 ppm STEL skin	200 ppm TWA
Isopropanol	67-63-0	200 ppm TWA	400 ppm TWA

		400 ppm STEL	
Hydrochloric acid	7647-01-0	C 5 ppm	C 2 ppm
Picric Acid	88-89-1	0.1 mg/m3 TWA	0.1 mg/m3 TWA skin

Engineering controls: Use general and/or local exhaust ventilation to control the vapor concentration.
Eye protection: Wear safety glasses or goggles.
Skin protection: Wear protective clothing and chemical resistant gloves.
Respiratory protection: Use self-contained respiratory device in an emergency situation.

Section 9: Physical and Chemical Properties

Appearance:	Clear, yellow liquid
UFL/LEL:	Not determined
LFL/LEL:	Not determined
Odor:	Alcohol-like
Vapor pressure:	Not determined
Odor threshold:	Not determined
Vapor density:	Not determined
pH:	Not determined
Relative density:	Not determined
Melting Point/Freezing point:	Not determined
Solubility in water:	Miscible
Boiling point/boiling range:	Not determined
Flash point:	Not determined
Evaporation Rate:	Not determined
Flammability (solid, gas):	Not applicable
Partition coefficient (n-octanol/water):	Not determined
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Viscosity:	Not determined

Section 10: Stability and Reactivity

Reactivity: No information.
Chemical stability: Stable under recommended conditions.
Stabilizer(s): Ethanol.
Safety issues that may arise should the product change in appearance: Picric Acid may detonate if allowed to dry completely. Do not touch the bottle if any crystalline residue is present around the cap. Call an explosive expert immediately.
Thermal decomposition/ conditions to Avoid: Excessive heat, incompatible materials, ignition sources, dryness.
Possibility of hazardous reactions: see incompatibilities.
Incompatibilities: Strong bases and oxidizers. Picric acid will react with metals including copper, lead, zinc, and aluminum; ammonia, concrete, plaster, salts, gelatin, silver salts, alkali metals, and many other materials to form dangerously sensitive salts.
Hazardous decomposition products: oxides of carbon, when heated to decomposition.

Section 11: Toxicological Information

For Methanol (Methyl alcohol):

Acute toxicity:
Oral rabbit LD50: 14200 mg/kg
Inhalation mouse LD50/6H: 41000 ppm/6H

Other exposure effect:
On the Skin: May cause irritation.
On the Eye: May cause irritation.
Sensitization: No sensitizing effects were known.

Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Danger through skin absorption. No classification data on carcinogenic properties of this material is available from NTP, IARC or OSHA.

For Hydrochloric Acid:

Acute toxicity:
Oral rat LD50: 900 mg/kg.

Other exposure effect:
Inhalation: Strong corrosive effect.
On the Skin: Strong corrosive effect.
On the Eye: Strong corrosive effect.
Sensitization: No sensitizing effects known.

Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from NTP or OSHA. IARC-3 Not classifiable as to human carcinogenicity.

For Picric Acid:

Acute toxicity:
Oral rat LD50: 200mg/kg.

Other exposure effect:
Inhalation: May cause irritation.
On the Skin: May stain skin and cause irritation.
On the Eye: May cause irritation.
Sensitization: May cause allergic skin reaction.

Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. May be absorbed through skin. No classification data on carcinogenic properties of this material is available from NTP, IARC or OSHA.

Section 12: Ecological Information

Toxicity:

Aquatic toxicity: No information.
Persistence and degradability: No information.
Behavior in environmental system:
Bioaccumulative potential: No information.
Mobility in soil: No information.
Additional ecological information: No information.
Other adverse effects: No information.

Section 13: Disposal Considerations

Place in a chemical waste container for proper disposal in an approved waste disposal facility. Dispose of the content and container in accordance with local, regional, national, international regulations.

Section 14: Transport Information

D.O.T. shipping name: Flammable liquid, Corrosive n.o.s., (ethanol, hydrochloric acid, picric acid)
D.O.T. hazard class: 3, 8
UN number: UN2924
Packing group: II

Section 15: Regulatory Information

Not meant to be all inclusive, selected regulation represented
OSHA status: These items meet the OSHA Hazard Communication Standard (29 CFR 1910.1200) definition of a hazardous material.
TSCA status: All components are listed.

Section 16: Other Information

Disclaimer: The information above is believed to be accurate and represents the best information currently available to us. ES Laboratory, LLC makes no warranty, express or implied, as to its accuracy, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. We shall not be liable for any damages to person or property resulting from its use.
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