1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name	Mercury Preservative Mix (25% Nitric acid / 25% HCl in water)
Product identifier	Mercury preservative
CAS-No.	not applicable to mixtures

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Preservative for analytical chemistry.

1.3 Details of the supplier of the safety data sheet

Company	MDH – Public Health Laboratory 601 Robert St. N St. Paul MN 55164 Telephone +1 651-201-5300

1.4 Emergency telephone number

Emergency Phone # +1 651-201-5300

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture (for chloroacetic acid)

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity-Inhalation / Gases (Category 4)
Acute toxicity, Oral (Category 5)
Oxidizing liquids (Category 3)
Skin corrosion (Category 1)
Serious eye damage/ Eye irritation (Category 1)
Specific target organ systemic toxicity (single exposure) (Category 3)

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

Hazard statement(s)	
H272	May intensify fire; oxidizer.
H303	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H332	Harmful if inhaled
H335 + H336	May cause respiratory irritation. May cause drowsiness or dizziness
Precautionary statement(s)	
P220	Keep/Store away from clothing/ combustible materials.
P261	Avoid breathing dust / fume / gas / mist / vapors / spray.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing
P310.	Immediately call a POISON CENTER or doctor/physician

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2.3 Hazards not otherwise classified (HNOC) or not covered by GHS – none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Formula :	N/A to mixtures
Molecular Weight	N/A to mixtures

Ingredient	CAS Number	EC Number	Percent	Hazardous
Nitric Acid	7697-37-2	231-714-2	25%	Yes
Hydrochloric Acid	7647-01-0	231-595-7	25%	Yes
Water	7732-18-5	231-791-2	50%	No

4. FIRST AID MEASURES

4.1 General advice:

Immediate first aid treatment reduces the health effects of this substance.
In all cases, immediately call a POISONCENTER or doctor / physician.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. If breathing is difficult, give Oxygen. Call a physician.

In case of skin contact

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash using soap. Wash clothing before reuse. Get medical attention immediately

In case of eye contact

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately

If swallowed

DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed: no data available

5. FIREFIGHTING MEASURES

5.1 Not combustible, but concentrating the mixture may form a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Can react with metals to release flammable Hydrogen gas.dioxide

5.2 Special hazards arising from the substance or mixture

Suitable extinguishing media

Water spray may be used to keep fire exposed containers cool. Do not get water inside container.

Special hazards arising from the substance or mixture

Emits toxic fumes under fire conditions. (Nitrogen oxides, Hydrogen chloride gas). Material can react with metals to produce flammable hydrogen gas.

Explosion:

Upon concentrating, may react explosively with combustible organic or readily oxidizable materials such as: alcohols, turpentine, charcoal, organic re fuse, metal powder, Hydrogen Sulfide, etc. Reacts with most metals to release Hydrogen gas, which can form explosive mixtures with air.

5.3 Advice for firefighters : Wear self-contained approved breathing apparatus and full protective clothing, including eye protection and boots.

5.4 Further information: If mixture is concentrated, may increase the flammability of combustible, organic and readily oxidizable materials. In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

6.2 & 6.3 Environmental precautions and Methods and materials for containment and cleaning:

Contain and recover liquid when possible. Do not let product enter drains. Neutralize with alkaline material (soda ash, lime,) then absorb with an inert material (e. g., vermiculite, dry sand, earth,) and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. Notify Local Emergency Planning Committee and State Emergency Response Commission for releases greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800) 424-8802 (USA) or (202) 426-2675 (USA).

6.4 Reference to other sections: For disposal see section 13

7. HANDLING AND STORAGE

7.1 & 7.2 Precautions for Safe Handling and Conditions for Safe Storage, Including Any Incompatibilities:

Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid.) Observe all warnings and precautions listed for the product

7.3 Specific end use(s) Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Airborne Exposure Limits:

For Nitric Acid:

OSHA Permissible Exposure Limit (PEL): 2 ppm (TWA), 4 ppm (STEL)

ACGIH Threshold Limit Value (TLV): 2 ppm (TWA); 4ppm (STEL)

For Hydrochloric Acid:

OSHA Permissible Exposure Limit (PEL): 5 ppm (Ceiling)

ACGIH Threshold Limit Value (TLV): 2 ppm (Ceiling), A4 Not classifiable as a human carcinogen

Ventilation System:

A system of local and / or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Maintain eye wash fountain and quick-drench facilities in work area.

Skin protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN37
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This recommendation is advisory only and must be evaluated by an
industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full face piece respirator, air-lined hood, or full face piece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134). Nitric Acid is an oxidizer and should not come in contact with cartridges and canisters that contain oxidizable materials, such as activated charcoal. Canister-type respirators using sorbents are ineffective.

Control of environmental exposure

Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	clear, colorless solution
Odor	no data available
Odor threshold	no data available
pH	<1
Melting point/range	no data available
Boiling point/range	no data available
Flash point	not applicable
Evaporation rate	no data available
Flammability (solid/gas)	not applicable
Upper/lower flammability / Explosive limits	not applicable
Vapor pressure	no data available
Vapor density	no data available
Relative density	no data available
Water solubility	completely miscible
Partition coefficient	no data available
Auto-ignition temp	no data available
Decomposition temp	no data available
Viscosity	no data available
Explosive properties	Upon concentrating, may react explosively with combustible organic or readily oxidizable materials such as: alcohols, turpentine, charcoal, organic refuse, metal powder, Hydrogen Sulfide, etc. Reacts with most metals to release Hydrogen gas which can form explosive mixtures with air.
Oxidizing properties	oxidizer

9.2 Other safety information: no data available

10. STABILITY AND REACTIVITY

10.1 Reactive Hazard: Yes

10.2 Chemical stability: Stable under ordinary conditions of use and storage. Containers may burst when heated

10.3 Possibility of hazardous reactions: If mixture is concentrated may become a dangerous oxidizing agent, solutions containing Nitric Acid are incompatible with most substances, especially strong bases, metallic powders, carbides, Hydrogen Sulfide, turpentine, and combustible organics.

10.4 Conditions to avoid: Light, heat, and incompatibles.

10.5 Incompatible materials: Moisture, metals, bases, organic materials, hydrogen sulfide, carbides, alcohols, organic solvents, cyanides, sulfides.

10.6 Hazardous decomposition products: Nitrogen oxides (NOx). HCl gas. In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

EmergeEmergency Overview: POISON! DANGER! CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. INHALATION MAY CAUSE LUNG AND TOOTH DAMAGE

Acute toxicity

For Nitric Acid:
Oral (human) LDLo: 430 mg/kg
Inhalation,rat, LC50: 67 ppm (NO_2)/4H
Investigated as a mutagen, reproductive effecter.

For Hydrochloric Acid:
Inhalation rat LC50: 3124 ppm/1H;
Oral rabbit LD50: 900mg/kg
Investigated as a umorigen, mutagen, reproductive effecter

Potential Health Effects:
Nitric Acid is extremely hazardous; it is corrosive, reactive, an oxidizer, and a poison.
Hydrochloric Acid is a corrosive.

Inhalation:
Corrosive! Inhalation of vapors can cause breathing difficulties and lead to pneumonia and pulmonary edema, which may be fatal. Other symptoms may include coughing, choking, and irritation of the nose, throat, and respiratory tract.

Ingestion:
Corrosive! Swallowing Nitric Acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract.

Skin Contact:
Corrosive! Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and stain skin a yellow or yellow-brown color.

Eye Contact:
Corrosive! Vapors are irritating and may cause severe damage to the eyes. Contact may cause severe burns and permanent eye damage.

Chronic Exposure:
Long-term exposure to concentrated vapors may cause erosion of teeth and lung damage.Long-term exposures seldom occur due to the corrosive properties of the acid.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders, eye disease, or cardiopulmonary diseases may be more susceptible to the effects of this substance.

Specific Target Organ Toxicity - Single Exposure (Globally Harmonized System:)
The substance or mixture is classified as specific target organ toxicant, single exposure, Category 3 with respiratory tract irritation.

Specific Target Organ Toxicity - Repeated Exposure(Globally Harmonized System:)
No data available.

Numerical Measures of Toxicity: Cancer Lists: NTP Carcinogen

Ingredient	Known	Anticipated	IARC Category
Nitric Acid (7697-37-2)	No	No	None
Hydrogen Chloride (7647-01-0)	No	No	3
Water (7732-18-5)	No	No	None

12. ECOLOGICAL INFORMATION

12.1 Toxicity: This material may be toxic to aquatic life. LC50 Shrimp: 100-300 ppm / 48 h / salt water; LC100 trout10 mg/l / 24 h; TLm mosquito fish: 282 ppm / 96 h

12.2 Persistence and degradability: When released into the soil, this material is not expected to biodegrade and may leach into groundwater

12.3 Bioaccumulative potential No data available

12.4 Mobility in soil No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects: US regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantitites.

13. DISPOSAL CONSIDERATIONS

13. Waste treatment methods
Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION

UN number: 3264 Class: 8 Packing group: II
Proper shipping name: Corrosive Liquid, Acidic, Inorganic, n.o.s. (Nitric Acid and Hydrochloric Acid)

Maritime Transport IMDG/GGV Sea Class: 8 Packing group: II
Class Marine pollutant: No

Airt Transport ICD-TL and IATA-DGR Class: 8

15. REGULATORY INFORMATION

Chemical Inventory Status – Part 1

Ingredient	TSCA	EC	Japan	Australia
Nitric Acid (7697-37-2)	Yes	Yes	Yes	Yes
Hydrogen Chloride (7647-01-0)	Yes	Yes	Yes	Yes
Water (7732-18-5)	Yes	Yes	Yes	Yes

Chemical Inventory Status – Part 2

Ingredient	Korea	Canada		Phil.
		DSL	NDSL	
Nitric Acid (7697-37-2)	Yes	Yes	No	Yes
Hydrogen Chloride (7647-01-0)	Yes	Yes	No	Yes
Water (7732-18-5)	Yes	Yes	No	Yes

Federal, State & International Regulations - Part 1

	SARA 302		SARA 313	
Ingredient	RQ	TPQ	List Chemical	Catg.
Nitric Acid (7697-37-2)	1000	1000	Yes	No
Hydrogen Chloride (7647-01-0)	5000	500	Yes	No
Water (7732-18-5)	No	No	No	No

Federal, State & International Regulations - Part 2

	RCRA		TSCA
Ingredient	CERCLA	261.33	8(d)
Nitric Acid (7697-37-2)	1000	No	No
Hydrogen Chloride (7647-01-0)	5000	No	No
Water (7732-18-5)	No	No	No

Chemical Weapons Convention: No		**TSCA 12(b):** No		**CDTA:** No
SARA 311/312:	**Acute:** Yes	**Chronic:** Yes	**Fire:** No	**Pressure**: No
Reactivity: No		Mixture / Liquid		

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16. OTHER INFORMATION

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

Prepared by: that would be us, I think
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Preparation Summary: This document has been written to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).