COLUMBUS CHEMICAL INDUSTRIES INC.

Safety Data Sheet

Million's Reagent

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Million's Reagent

Synonyms/Generic Names: Million's protein test solution

Product Number: 9149

Product Use: Industrial, Manufacturing or Laboratory use

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Call: 920-623-2140 (Monday-Friday 8:00-4:30)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Target Organ Effect, Highly toxic by inhalation, Respiratory sensitizer, Teratogen, Reproductive hazard, Corrosive

Target Organs: Kidneys, Lungs, Central nervous system, Teeth

Signal Word: Danger

Pictograms:

GHS Classification:

Acute toxicity, Inhalation	Category 1
Respiratory sensitization	Category 1
Reproductive toxicity	Category 1A
Specific target organ toxicity - repeated exposure, Inhalation	Category 1
Skin corrosion	Category 1A
Serious eye damage	Category 1
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

GHS Label Elements, including precautionary statements:

Hazard Statements:

H314	Causes severe skin burns and eye damage.
H330	Fatal if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H360	May damage fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure if inhaled.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

P201	Obtain special instructions before use.
P260	Do not breathe dust/ fume/ gas/ mist/ vapors/ spray
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	Wear respiratory 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.
P501	Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Eyes	Causes eye irritation.
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Ingestion	May be harmful if swallowed.

NFPA Ratings

Health	3
Flammability	0
Reactivity	1
Specific hazard	Not Available

HMIS Ratings

Health	3
Fire	0
Reactivity	1
Personal	J

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Mercury	29-30	7439-97-6	231-106-7	Hg	200.59 g/mol
Nitric Acid	21-22	7697-37-2	231-714-2	HNO_3	63.01 g/mol
Water	40-41	7732-18-5	231-791-2	H_2O	18.00 g/mol

4. FIRST-AID MEASURES

Eyes	In case of eye contact, immediately rinse with plenty of water for at least 15 minutes and seek medical attention immediately.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.
Skin	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention immediately.
Ingestion	**Do Not Induce Vomiting!** Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Product is not flammable. Use appropriate media for adjacent fire. Cool unopened containers with water.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	Emits toxic fumes (nitrogen oxides, mercury/mercury oxides) under fire conditions. (See also Stability and Reactivity section).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Neutralize spill. Absorb spill with noncombustible absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

7. HANDLING AND STORAGE

Precautions for safe handling
See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of aerosols.

Conditions for safe storage, including any incompatibilities
Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Mercury	0.025 mg/m^3	TLV	ACGIH
	0.1 mg/m^3	CEIL	OSHA
	0.05* mg/m^3	REL	NIOSH
	0.1 mg/m^3	CEIL	NIOSH
Nitric Acid	2 ppm 5.2 mg/m^3	TLV	ACGIH
	4 ppm 10 mg/m^3	STEL	ACGIH
	2 ppm 5 mg/m^3	PEL	OSHA
	2 ppm 5 mg/m^3	REL	NIOSH
	4 ppm 10 mg/m^3	STEL	NIOSH
	25 ppm	IDLH	OSHA

*vapor

TWA: Time Weighted Average over 8 hours of work.
TLV: Threshold Limit Value over 8 hours of work.
REL: Recommended Exposure Limit
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit during x minutes.
IDLH: Immediately Dangerous to Life or Health
WEEL: Workplace Environmental Exposure Levels
CEIL: Ceiling

Personal Protection

Eyes	Wear chemical safety glasses or goggles with face shield.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear nitrile or rubber gloves, and full body protecton.
Other	Not Available

Other Recommendations
Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Translucent, yellow/green liquid.
Odor	Not Available
Odor threshold	Not Available
pH	Not Available
Melting point/freezing point	Not Available
Initial boiling point and boiling range	Not Available
Flash point	Not Flammable
Evaporation rate	Not Available
Flammability (solid, gas)	Not Flammable
Upper/lower flammability or explosive limit	Not Explosive
Vapor pressure	Not Available
Vapor density	Not Available
Density	1.6367 g/mL (20°C)
Solubility (ies)	Not Available
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Not Available
Incompatible Materials	Formats, sulfites, hypophosphates, sulfides, alkalis.
Hazardous Decomposition Products	Nitrogen oxides, mercury/mercury oxides.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Skin	Not Available
Eyes	Not Available
Respiratory	Not Available
Ingestion	LDLO Oral – Human – 430 mg/kg (nitric acid)

Carcinogenicity

IARC	3: Not classifiable as to its carcinogenicity to humans (mercury).
ACGIH	A4: Not classifiable as a human carcinogen (mercury).
NTP	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Redness, blistering, burning, itching, tissue destruction with slow healing.
Eyes	Redness, tearing, itching, burning, damage to cornea, conjunctivitis, loss of vision.
Respiratory	Coughing, wheezing, shortness of breath, headache, spasm, inflammation and edema of bronchi, pneumonitis.
Ingestion	Nausea, vomiting, burning, diarrhea, ulceration, convulsions, shock.

Chronic Toxicity	Repeated/prolonged skin contact may cause thickening, blackening or cracking. Repeated eye exposure may cause corneal erosion or loss of vision.
Teratogenicity	Tetotoxicity (except death) (nitric acid)
Mutagenicity	Not Available
Embryotoxicity	Tetotoxicity (except death) (nitric acid)
Specific Target Organ Toxicity	Not Available
Reproductive Toxicity	Not Available
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Vertebrate	LC50 – Gambusia affinis – 72 mg/L – 96h (nitric acid) LC50 - Labeo rohita - 0.018 mg/l - 96.0 h (mercury)
Aquatic Invertebrate	Not Available
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Waste Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residues.

Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	UN3289, Toxic liquid, corrosive, inorganic, n.o.s., (mercury and nitric acid), 6.1, (8), pg II
TDG	UN3289, Toxic liquid, corrosive, inorganic, n.o.s., (mercury and nitric acid), 6.1, (8), pg II
IMDG	UN3289, Toxic liquid, corrosive, inorganic, n.o.s., (mercury and nitric acid), 6.1, (8), pg II
Marine Pollutant	
IATA/ICAO	UN3289, Toxic liquid, corrosive, inorganic, n.o.s., (mercury and nitric acid), 6.1, (8), pg II

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Listed: Mercury
SARA 302	Listed: Nitric Acid
SARA 304	Listed: Nitric Acid
SARA 311	Mercury, Nitric Acid
SARA 312	Mercury, Nitric Acid
SARA 313	Listed: Nitric Acid
WHMIS Canada	CLASS E: Corrosive liquid. CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

16. OTHER INFORMATION

Revision	Date
Revision 1	01/10/2013