



HI 84431-51
Titrant Solution for High Range
Safety Data Sheet

According to Regulation (EC) No. 1907/2006
OSHA Regulation 29 CFR 1910.1200
Canadian Regulation SOR/88-66

Revision Date: 2012-05-31
Reason for Revision: Section 14 Updated

SECTION 1: IDENTIFICATION OF THE PRODUCT AND COMPANY

Product Name: HI 84431-51 Titrant Solution for High Range
Application: For Determination of Titratable Alkalinity
Company Information (USA): Hanna Instruments, Inc.
584 Park East Dr, Woonsocket, Rhode Island, USA 02895
Technical Service Contact Information: 1-800-426-6287 (8:30AM - 5:00PM ET)
+1-401-766-4260 (8:30AM - 5:00PM ET)
USA Emergency Contact Information: 1-800-424-9300 (Chemtrec 24Hr. Emergency)
International Emergency Contact Information: +1-703-527-3887 (Chemtrec 24Hr. Emergency)
E-mail Address: tech@hannainst.com

SECTION 2: HAZARD IDENTIFICATION

Irritating to eyes and skin.

SECTION 3: COMPOSITION AND COMPONENT INFORMATION

Component: Sulfuric Acid
EC-No.: 231-639-5
CAS-No.: 7664-93-9
Hazard: C
Phrases: R: 35
Content: > 5% - < 15%

SECTION 4: FIRST AID MEASURES

After Inhalation: Remove to fresh air. If respiration is difficult, give oxygen. If not breathing, give artificial respiration. Summon doctor.
After Skin Contact: Wash off with plenty of water for at least 15 minutes. Immediately remove contaminated clothing. Summon doctor.
After Eye Contact: Rinse out with plenty of water for at least 15 minutes with the eyelid held wide open. Immediately call in ophthalmologist.
After Swallowing: Drink plenty of water (if necessary several liters), avoid vomiting (risk of perforation!). Immediately seek medical advice. Do not attempt to neutralize.
General Information: Not available

SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:
Non-combustible. Carbon Dioxide, Dry Chemical Powder, Appropriate Foam. Do not use water.
Special Risks:
Emits toxic fumes under fire conditions. May cause fire by contact with other materials.
Special Protective Equipment:
Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.
Additional Information:
None

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Do not inhale vapors. Avoid substance contact. Ensure supply of fresh air in enclosed rooms. In case of leak evacuate area. In dangerous zone use chemical protection clothing and self-contained breathing apparatus.

Environmental Precautions:

Do not discharge into drains/surface waters/groundwaters.

Additional Notes:

Take up with liquid-absorbent material. Clean up affected area and dispose according to local regulation. Render harmless: neutralize with diluted base solutions.

SECTION 7: HANDLING AND STORAGE

Handling:

Accessible only for authorized persons. Avoid prolonged exposure and protect the eyes, skin and clothing.

Storage:

Tightly closed. Store at room temperature (+15 to +25 °C recommended). Avoid contact with water.

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Type	Value	Source	Type	Value	Source
Sulfuric Acid					
TWA (8hr)	1 mg/m ³	Belgium	TWA (8hr)	0.2 mg/m ³	Canada (Ontario)
TWA (8hr)	1 mg/m ³	Canada (Quebec)	TWA (8hr)	1 mg/m ³	France
TWA (8hr)	1 mg/m ³	Greece	TWA (8hr)	1 mg/m ³	Hungary
TWA (8hr)	0.5 mg/m ³	Poland	TWA (8hr)	0.2 mg/m ³	Portugal
TWA (8hr)	0.5 mg/m ³	Romania	TWA (8hr)	1 mg/m ³	Spain
TWA (8hr)	0.2 mg/m ³	USA (ACGIH)	TWA (8hr)	1 mg/m ³	USA (OSHA)

Engineering:

Safety shower and eye wash.

Personal Protective Equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Respiratory Protection:

Required when vapors/aerosols are generated. Work under hood.

Protective Gloves:

Rubber or plastic.

Eye Protection:

Goggles or face mask.

Industrial Hygiene:

Immediately change contaminated clothing. Apply skin-protective barrier cream. Wash hands and face after working with substance.

SECTION 9: PHYSICAL/CHEMICAL PROPERTIES

Appearance:	Colorless liquid	Odor:	Odorless	Density at 20°C:	1.058 g/cm ³
Melting Point:	ND	Boiling Point:	ND	Solubility:	Soluble
pH at 20°C:	< 2	Explosion Limit:	NA	Flash Point:	NA
Thermal Decomp.:	ND				

SECTION 10: STABILITY AND REACTIVITY

Conditions to be Avoided:

Moisture. Prevent water from entering container.

Hazardous Polymerization:

Will not occur.

Further Information:

Not available

Hazardous Decomposition Products:

Sulfur oxides, hydrogen sulfide gas. In the event of fire: see section 5.

Substances to be Avoided:

Bases, powdered metals, halides, organic materials. Violent reaction with Phosphorus(III) oxide, cyclopentadiene, cyclopentanone oxime.

SECTION 11: TOXICOLOGICAL INFORMATION

Product Toxicity

Quantitative data on the toxicity of this product is not available.

Potential Health Effects:

Further Data: The product should be handled with the usual care when dealing with chemicals.

Component Toxicity

Acute Toxicity:

Sulfuric Acid

LC50: Inhalation - Rat - 510 mg/m³

LD50: Oral - Rat - 2140 mg/kg

Chronic Toxicity:

Sulfuric Acid

NTP: Known to be carcinogenic to humans

Additional Data:

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Sulfuric acid, as the pure substance:

Specific symptoms in animal studies:

Eye irritation test (rabbit): burns.

Skin irritation test (rabbit): burns.

Toxicological values are not available due to other dangerous properties of the substance.

Subacute to chronic toxicity

Applicable to partial component(s):

Bacterial mutagenicity: Ames test: negative.

No teratogenic effect in animal experiments.

SECTION 12: ECOLOGICAL INFORMATION

Quantitative data on the toxicity of this product is not available.

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Sulfuric acid, as the pure substance:

Biologic degradation:

Methods for the determination of biodegradability are not applicable to inorganic substances.

Behavior in environmental compartments:

Concentration in organisms is not to be expected.

Ecotoxic effects:

Quantitative data on the ecological effect of this product are not available.

Further ecologic data:

The following applies to sulfuric acid: biological effects: harmful effect on aquatic organisms. Harmful effect due to pH shift. Toxic effect on fish and algae. Caustic even in diluted form. Does not cause biological oxygen deficit. Endangers drinking water supplies if allowed to enter soil and/or waters in large quantities. Neutralization possible in waste water treatment plants.

Daphnia toxicity: Daphnia magna EC50 : 29 mg/L/24 h (calculated on the pure substance).

Further Data: No ecological problems are to be expected when the product is handled and used with due care and attention.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal: Chemical residues are generally classified as special waste and thus covered by local regulations. Contact local authorities or disposal companies for advice. Handle contaminated packaging in the same way as the substance itself.

SECTION 14: TRANSPORTATION INFORMATION

	<i>Land (ADR/RID):</i>	<i>Sea (IMDG):</i>	<i>Air (ICAO/IATA):</i>
UN No.:	3264	3264	3264
Proper Shipping Name:	Corrosive liquid, acidic, inorganic, n.o.s. (sulphuric acid solution)	Corrosive liquid, acidic, inorganic, n.o.s. (sulphuric acid solution)	Corrosive liquid, acidic, inorganic, n.o.s. (sulphuric acid solution)
Class (Sub Risk):	8	8	8
Packing Group:	III	III	III

SECTION 15: REGULATORY INFORMATION

Labeling according to EC Directives:

Symbol: Xi: Irritant

R-phrases: 36/38: Irritating to skin and eyes.

S-phrases: 26-37/39-45: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).

Contains: Sulfuric Acid

SECTION 16: OTHER INFORMATION

Text of R-phrases under Section 3

35: Causes severe burns.

Revision Information

Revision Date: 2012-05-31

Supersedes edition of: 2009-06-10

Reason for revision: Section 14 Updated

Legend

NA: Not Applicable

ND: Not Determined

THE INFORMATION CONTAINED HEREIN IS BASED ON THE PRESENT STATE OF OUR KNOWLEDGE. IT CHARACTERIZES THE PRODUCT WITH REGARD TO THE APPROPRIATE SAFETY PRECAUTIONS. IT DOES NOT REPRESENT A GUARANTEE OF THE PROPERTIES OF THE PRODUCT.