



1. PRODUCT AND COMPANY IDENTIFICATION

Product name: VALIDATE[®] UC4 Calibration Verification Test Kit
Product number: 704au, 704bc, 704ro, 704db and 704ri

VALIDATE[®] products are not known to be hazardous. However, the above listed VALIDATE[®] product contains greater than 1.0% Hydrochloric Acid (HCl). Therefore, this MSDS sheet was specifically created to provide information pertaining solely to HCl.

Intended Use: VALIDATE[®] Calibration Verification / Linearity Test Kit solutions are intended for *in vitro* diagnostic use in the quantitative determination of linearity, calibration verification and verification of reportable range in automated, semi-automated and manual instrument systems.

Manufacturer: Maine Standards Company, LLC
Address: 765 Roosevelt Trail
Windham, ME 04062

Emergency Phone: 800-377-9684
207-892-1300

Fax: 207-892-2266

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Muriatic acid, chlorohydric acid
Formula: HCl
Molecular Weight: 36.46 g/mol
IUPAC Name: Hydrochloric Acid
Risk Phrases: R 34 Causes burns.
R 37 Irritating to respiratory system.
Safety Phrases: S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
Notes: Hydrochloric Acid is not a known carcinogen. The ACGIH limit for humans is 5 ppm (0.5 mg/dL).

Name	CAS-No.	EC-No.	Index-No.	% by Weight
Hydrochloric Acid	7647-01-0	231-595-7	017-002-01-X	37
Water	7732-18-5	231-791-2	-	63

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Corrosive

HMIS Classification
Health Hazard: 3
Flammability: 0
Physical hazards: 1

NFPA Rating
Health Hazard: 3
Fire: 0
Reactivity Hazard: 1

Potential Health Effects

Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	May be harmful if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.
Ingestion	May be harmful if swallowed. Causes burns.

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration and consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Continue rinsing eyes during transport to hospital. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point	Not applicable
Ignition temperature	No data available

Suitable extinguishing media

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

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

The product itself does not burn.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

Do not let product enter drains.

Methods for cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling

Avoid inhalation of vapor or mist.

Storage

Keep container tightly closed in a dry and well ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Hydrochloric acid	7647-01-0	CEIL	2 ppm	2003-01-01	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004: Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs).
Remarks	ACGIH 2003 Adoption Refers to Appendix A -- Carcinogens.				
		CEIL	5 ppm 7 mg/m3	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A.
		CEIL	5 ppm 7 mg/m3	1993-06-30	US. Department of Labor - Occupational Safety and Health Administration. (OSHA) Permissible Exposure Limits (PEL) 29 CFR 1910.1000 Air Contaminants.

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate, use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

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

Environmental

Will exhibit extensive evaporation from soil surfaces. Upon transport through the soil, hydrochloric acid will dissolve some of the soil materials (especially those with carbonate bases) and the acid will neutralize to some degree.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	Liquid
Color	Light yellow
Odor	Pungent

Safety data

pH	No data available
Melting point	-30 °C (-22 °F)
Boiling point	110 °C (230 °F)
Flash point	Not applicable
Ignition temperature	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor pressure	227 hPa (170 mmHg) at 21.1 °C (70.0 °F) 547 hPa (410 mmHg) at 37.7 °C (99.9 °F)
Density	1.2 g/cm ³ at 25 °C (77 °F)
Water solubility	Soluble
Viscosity, dynamic	2.3 mPa.s at 15 °C (59 °F)

10. STABILITY AND REACTIVITY**Storage stability**

Stable under recommended storage conditions.

Materials to avoid

Bases, Amines, Alkali metals, Metals, permanganates, e.g. potassium permanganate, Fluorine, metal acetylides and hexalithium disilicide.

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions: Hydrogen chloride gas.

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

LD50 Oral - rabbit - 900 mg/kg (Hydrochloric acid)

LC50 Inhalation - rat - 1 h - 3124 ppm (Hydrochloric acid)

Irritation and corrosion

No data available (Hydrochloric acid).

Sensitization

No data available (Hydrochloric acid).

Chronic exposure

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component 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 component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Potential Health Effects

Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	May be harmful if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.
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12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

No data available.

Ecotoxicity effects

Toxicity to fish LC50 - *Gambusia affinis* (Mosquito fish) - 282 mg/l - 96 h (Hydrochloric acid).

Further information on ecology

No data available.

13. DISPOSAL CONSIDERATIONS

Product

Observe all federal, state and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN-Number: 1789 Class: 8 Packing group: II
Proper shipping name: Hydrochloric acid

IMDG

UN-Number: 1789 Class: 8 Packing group: II EMS-No: F-A, S-B
Proper shipping name: HYDROCHLORIC ACID
Marine pollutant: No

IATA

UN-Number: 1789 Class: 8 Packing group: II
Proper shipping name: Hydrochloric acid

15. REGULATORY INFORMATION

OSHA Hazards

Corrosive

TSCA Status

On TSCA Inventory

DSL Status

All components of this product are on the Canadian DSL list.

SARA 302 Components

Hydrochloric acid	CAS-No.	Revision Date
	7647-01-0	1987-01-01

SARA 313 Components

Hydrochloric acid	CAS-No.	Revision Date
	7647-01-0	1987-01-01

SARA 311/312 Hazards

Acute Health Hazard

Massachusetts Right To Know Components

Hydrochloric acid	CAS-No.	Revision Date
	7647-01-0	1987-01-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Water	7732-18-5	
Hydrochloric acid	7647-01-0	1987-01-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Water	7732-18-5	
Hydrochloric acid	7647-01-0	1987-01-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION**Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Maine Standards Company shall not be held liable for any damage resulting from handling or from contact with the above product.