



# Aqua Chemical Supply, Inc.

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## 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier	Total Hardness Reagent
Product code	R-0854
Recommended use	Use as directed by manufacturer for purposes directly related to water testing.
Recommended restrictions	None known
Manufacturer	Taylor Technologies, Inc. 31 Loveton Circle Sparks, MD 21152
Emergency telephone number:	For emergency assistance involving chemicals call CHEMTREC day or night at: 1-800-424-9300

## 2. HAZARDS IDENTIFICATION

Physical hazards	Flammable liquids	Category 3
Health hazards	Eye damage/irritation	Category 2A
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Environmental hazards	Not currently regulated by OSHA. For additional information, refer to section 12 of the SDS.	



Label elements	
Signal word	Warning
Hazard statement	Flammable liquid and vapor. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames.-No smoking. Keep container tightly closed. Ground or bond container and receiving equipment. Use explosion-proof electrical/ventilating equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/eye protection/face protection. Wash skin thoroughly after handling. Avoid breathing mist or vapor. Use only outdoors or in a well-ventilated area.
Response	IF ON SKIN (OR HAIR): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. IF EYE IRRITATION PERSISTS: Get medical advice/attention. Call a physician or poison control center if you feel unwell. IN CASE OF FIRE: Use alcohol-resistant foam. Water fog. Carbon dioxide (CO2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Storage	Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified	None
Supplemental information	None

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

Mixtures			
Chemical name	Common name and synonyms	CAS number	%
2,2',2''-Nitrilotriethanol;	Tris(2-hydroxyethyl)amine	102-71-6	75-80
Dimethyl carbinol; Isopropanol 2-Propanol; Isopropyl alcohol		67-63-0	20-25
Other components below reportable levels			0.1-5
Composition comments: All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.			

**4. FIRST AID MEASURES**

**Inhalation** Move to fresh air. Give oxygen or artificial respiration if needed. Get medical attention if you feel unwell.

**Skin contact** Immediately flush skin with running water for at least 20 minutes. Immediately take off all contaminated clothing. Get medical attention if you feel unwell. Wash contaminated clothing before reuse.

**Eye contact** Immediately flush eyes with plenty of water for at least 20 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

**Ingestion** Call a physician or poison control center immediately. Rinse mouth. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting unless directed by physician. If vomiting occurs, keep head low so that stomach content does not get into the lungs.

Most important symptoms/effects, acute and delayed

Indication of immediate medical attention and special treatment needed

Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness and itching.

Direct eye contact may cause slight or mild transient irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Inhalation of mists can cause respiratory irritation. Symptoms may include coughing and breathing difficulties. May cause drowsiness or dizziness. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness, and other central nervous system effects.

Ingestion may cause gastrointestinal irritation, nausea, vomiting, diarrhea, as well as depression of the central nervous system. Provide general supportive measures and treat symptomatically. This product is a CNS depressant.

**General information** Ensure medical personnel are aware of the material(s) involved and take precautions to protect themselves.

**5. FIRE FIGHTING MEASURES**

**Suitable extinguishing media** Alcohol-resistant foam. Water fog. Carbon dioxide. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

**Unsuitable extinguishing media**

**Specific hazards arising from the chemical**

**Special protective equipment and precautions for firefighters**

Do not use water jet as an extinguisher, as this will spread the fire.

Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can be electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential static discharge, use proper bonding and grounding procedures. During fire, gases hazardous to health may be formed. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Firefighting equipment/instructions**

Firefighters should wear full protective gear. Evacuate the area promptly. Fight fire from upwind to avoid exposure to combustion products. Cool containers/tanks with water spray. Do not get water inside container. Move containers from fire area if it can be done without risk. Prevent fire-extinguishing water from contaminating surface water or the ground water system.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards** Flammable liquid and vapor. This material may be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment). Vapors are heavier than air and may spread along floors. Vapors may travel considerable distance to a source of ignition and flash back.

**Hazardous combustion products**

Carbon oxides. Nitrogen oxides. Peroxides. Other irritating fumes and smoke.

**6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment, and emergency procedures

Methods and materials for containment and cleaning up

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during cleanup. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protective equipment, refer to section 8 of the SDS.

Ventilate the contaminated area. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools.

Large Spills: Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth, and place into containers. Prevent entry into waterways, sewer, basements, or confined areas. Following product recovery, flush area with water.

Small Spills: Absorb spillage with noncombustible, absorbent material. Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for reuse. For waste disposal, refer to section 13 of the SDS. Contaminated absorbent material may pose the same hazards as the spilled product.

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Environmental precautions      Avoid discharge into drains, watercourses, or onto the ground.

**7. HANDLING AND STORAGE**

Precautions for safe handling      Vapors may form explosive mixtures with air. Keep away from sources of ignition. NO SMOKING.

Do not handle, store, or open near an open flame, sources of heat or sources of ignition. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Provide adequate ventilation. Wear appropriate personal protective equipment. For personal protective equipment, refer to section 8 of the SDS. Keep away from incompatibles. Observe good industrial hygiene practices. Label containers appropriately.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in vented containers. Keep away from heat, sparks, and open flames. This material can accumulate static charge which may cause a spark and become an ignition source. Prevent electrostatic charge buildup by using common bonding and grounding techniques. Store in a well-ventilated place. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (refer to section 10 of the SDS).

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

Occupational exposure limits

U.S. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Isopropanol (CAS 67-63-0)	PEL	980 mg/m <sup>3</sup>	Not applicable
		400 ppm	Not applicable

U.S. ACGIH Threshold Limit Values

Components	Type	Value	Form
Isopropanol (CAS 67-63-0)	STEL	400 ppm	Not applicable
	TWA	200 ppm	Not applicable
Triethanolamine (CAS 102-71-6)	TWA	5 mg/m <sup>3</sup>	Not applicable

U.S. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Isopropanol (CAS 67-63-0)	STEL	1225 mg/m <sup>3</sup>	Not applicable
		500 ppm	Not applicable
	TWA	980 mg/m <sup>3</sup>	Not applicable
		400 ppm	Not applicable

Biological limit values

U.S. ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Isopropanol (CAS 67-63-0)	40 mg/L	Acetone	Urine	Not available

Appropriate engineering controls

Individual protection measures, such as personal protective equipment

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Eye/face protection                      Wear safety glasses with side shields (or goggles) and a face shield. Provide an emergency eyewash fountain and quick-drench shower in the immediate work area.

Skin protection

Hand protection                      Wear appropriate chemical-resistant gloves. Advice should be sought from glove suppliers.

Other                                      Wear appropriate chemical-resistant clothing.

Respiratory protection                      In case of insufficient ventilation, wear suitable respiratory equipment. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to fumes at levels exceeding the exposure limits. Advice should be sought from respiratory protection suppliers.

Thermal hazards                      When necessary, wear appropriate thermal protective clothing.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking and/or smoking. Routinely wash work clothing and protective equipment to remove contamination. Avoid breathing mist or vapor.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Liquid
Form	Liquid
Color	Dark blue
Odor	Ammonical
Odor threshold	Not available
pH	10.3
Melting point/freezing point	Not available
Initial boiling point and boiling range	500–600°F (260–315.56°C)
Flash point	66.0°F (18.9°C) Closed cup
Evaporation rate	Not available
Flammability (solid, gas)	Flammable
Upper/lower flammability or explosive limits	
Flammability limit, lower (%)	Not available
Flammability limit, upper (%)	Not available
Explosive limit, lower (%)	2%
Explosive limit, upper (%)	12%
Vapor pressure	Not available
Vapor density	2
Relative density	1.02 g/cm <sup>3</sup>
Solubility(ies)	
Solubility (water)	Soluble in all proportions
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Other information	
Explosive properties	Not applicable

Oxidizing properties	Not applicable	
Percent volatile	99%	
Specific gravity	1.02	
<b>10. STABILITY AND REACTIVITY</b>		
Reactivity and transport.	This product is stable and nonreactive under normal conditions of use, storage, and transport.	
Chemical stability	Material is stable under normal conditions.	
Possibility of hazardous reactions		
No dangerous reaction known under conditions of normal use		
Conditions to avoid	Heat, sparks, open flames, and other ignition sources. Temperatures exceeding the flash point.	
Direct sunlight. Contact with incompatible materials. Do not use in areas without adequate ventilation.		
Incompatible materials	Alkali metals. Aluminum. Oxidizing agents. Potassium t-butoxide. Some plastics. Strong acids.	
Hazardous decomposition products		
None known. For hazardous combustion products, refer to section 5 of the SDS.		
<b>11. TOXICOLOGICAL INFORMATION</b>		
Information on likely routes of exposure		
Inhalation	May cause drowsiness and dizziness. May cause irritation to the respiratory system.	
Skin contact	May cause slight or mild transient irritation	
Eye contact	May cause severe irritation	
Ingestion	May cause irritation, nausea, vomiting, and diarrhea	
Most important symptoms/effects, acute and delayed		
Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness and itching.		
Direct eye contact may cause slight or mild transient irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.		
Inhalation of mists can cause respiratory irritation. Symptoms may include coughing and breathing difficulties. May cause drowsiness or dizziness. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness, and other central nervous system effects.		
Ingestion may cause gastrointestinal irritation, nausea, vomiting, diarrhea, as well as depression of the central nervous system.		
Acute toxicity	This product is not classified as an acute toxicity hazard. See below for individual ingredient acute toxicity data.	
Components	Species	Test Results
Isopropanol (CAS 67-63-0)		
Acute		
Dermal LD50	Rabbit	12890 mg/kg
Inhalation LC50	Rat	17000 ppm, 4 hours (vapor) 41.8 mg/L, 4 hours (vapor)
Triethanolamine (CAS 102-71-6)		
Acute		
Dermal LD50	Rabbit	>19870 mg/kg
Inhalation LC50	Rat	Not available
Oral LD50	Rat	6110 mg/kg
Deionized water (CAS 7732-18-5)		
Acute		
Dermal LD50	Rabbit	Not available
Inhalation LC50	Rat	Not available
Oral LD50	Rat	>89840 mg/kg
Skin corrosion/irritation	Causes skin irritation	
Serious eye damage/eye irritation	Causes severe eye irritation	
Respiratory sensitization	Not expected to be a respiratory sensitizer	
Skin sensitization	Not expected to be a skin sensitizer	

Germ cell mutagenicity	Not expected to be mutagenic
Carcinogenicity	This product is not considered to be a carcinogen by IARC, NTP, OSHA, or U.S. ACGIH.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Triethanolamine (CAS 102-71-6)	3 Not classifiable as to carcinogenicity to humans
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096)	Not regulated
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity, single exposure	
Specific target organ toxicity, repeated exposure	
May cause drowsiness or dizziness. May cause respiratory irritation.	
Not classified as a specific target organ toxicity – repeated exposure	
Aspiration toxicity	Not expected to be an aspiration hazard
Chronic effects	Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis. Frequent or prolonged inhalation of fumes or vapors may cause chronic lung conditions such as bronchitis. Frequent or prolonged overexposure may affect the kidneys.

## 12. ECOLOGICAL INFORMATION

Ecotoxicity This product is not classified as environmentally hazardous; however, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Isopropanol (CAS 67-63-0) – Aquatic		
Acute		
Crustacea EC50	Water flea ( <i>Daphnia magna</i> )	1400 mg/L, 48 hours
LC50	Fathead minnow ( <i>Pimephales promelas</i> )	9640 mg/L, 96 hours
Chronic		
Crustacea		
NOEC	Water flea ( <i>Daphnia magna</i> )	30 mg/L, 21 days
Triethanolamine (CAS 102-71-6) – Aquatic		
Acute		
Algae		
EC50	Green algae ( <i>Desmodesmus subspicatus</i> )	512 mg/L, 72 hours
Crustacea		
EC50	Water flea ( <i>Ceriodaphnia affinis</i> )	609.88 mg/L, 48 hours
Chronic		
Crustacea		
NOEC	Water flea ( <i>Daphnia magna</i> )	16 mg/L, 21 days
Persistence and degradability	Not available	
Bioaccumulative potential		
Partition coefficient n-octanol / water (log Kow)		
Isopropanol (CAS 67-63-0)	0.05	
Triethanolamine (CAS 102-71-6)	-1	
Bioconcentration factor (BCF)		
Isopropanol (CAS 67-63-0)	1	
Mobility in soil		
Not available		
Other adverse effects	No other adverse environmental effects (e.g., ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.	

## 13. DISPOSAL CONSIDERATION

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion with the user, the producer, and the waste disposal company.
Waste from residues/unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (refer to Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste-handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

**14. TRANSPORT INFORMATION****DOT**

UN number UN1993  
 UN proper shipping name Flammable liquids, N.O.S. (Isopropanol)  
 Transport hazard class(es) Class 3  
 Subsidiary risk Not listed  
 Label(s) 3  
 Packing group II  
 Special precautions for user Read safety instructions, SDS, and emergency procedures before handling.  
 Special provisions IB2, T7, TP8, TP28  
 Packaging exceptions 150  
 Packaging, non-bulk 202  
 Packaging, bulk 242

**IATA**

UN number UN1993  
 UN proper shipping name Flammable liquids, N.O.S. (Isopropanol)  
 Transport hazard class(es) Class 3  
 Subsidiary risk Not listed  
 Packing group II Environmental hazards Not listed ERG code 3H  
 Special precautions for user Read safety instructions, SDS, and emergency procedures before handling.  
 Other information  
 Passenger and cargo aircraft Allowed

**IMDG**

Cargo aircraft only Allowed  
 UN number UN1993  
 UN proper shipping name Flammable liquids, N.O.S. (Isopropanol)  
 Transport hazard class(es) Class 3  
 Subsidiary risk Not listed Packing group II Environmental hazards  
 Marine pollutant No  
 EmS F-E, S-E  
 Special precautions for user Read safety instructions, SDS, and emergency procedures before handling.  
 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

**DOT**

IATA; IMDG

**15. REGULATORY INFORMATION**

U.S. federal regulations	All components are on the U.S. EPA TSCA Inventory list.		
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated		
CERCLA Hazardous Substance (40 CFR 302.4)	Isopropanol (CAS 67-63-0)		
SARA 304 Emergency Release Notification	Not regulated		
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096)	Not regulated		
Superfund Amendments and Reauthorization Act of 1986 (SARA) Hazard categories			
Immediate hazard – yes	Delayed hazard – no	Fire hazard – yes	Pressure hazard – no
SARA 302 Extremely Hazardous Substance	Not regulated		
SARA 311/312 Hazardous	Chemical Listed		
SARA 313 (TRI reporting)	Chemical name	CAS number	% by weight
	Isopropanol	67-63-0	23
Other federal regulations			
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAP)	Not regulated		
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)	Not regulated		
Safe Drinking Water Act (SDWA)	Not regulated		
U.S. state regulations			
California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)	Not regulated		
Massachusetts Right-to-Know Act	Isopropanol (CAS 67-63-0)	Triethanolamine (CAS 102-71-6)	
New Jersey Worker and Community Right-to-Know Act	Isopropanol (CAS 67-63-0)	Triethanolamine (CAS 102-71-6)	
Pennsylvania Worker and Community Right-to-Know Act	Isopropanol (CAS 67-63-0)	Triethanolamine (CAS 102-71-6)	
Rhode Island Right-to-Know Act	Isopropanol (CAS 67-63-0)		
California Proposition 65			
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):	This material contains a chemical known to cause cancer.		
International inventories			
Country(ies) or region	Inventory name	On inventory	
(yes/no)*			
Australia	Australian Inventory of Chemical Substances (AICS)	yes	
Canada	Domestic Substances List (DSL)	yes	
Canada	Non-Domestic Substances List (NDSL)	no	
China	Inventory of Existing Chemical Substances Produced or Imported in China (IECSC)	yes	
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	yes	
Europe	European List of Notified Chemical Substances (ELINCS)	no	
Japan	Existing and New Chemical Substances (ENCS)	yes	
Korea	Existing Chemicals List (ECL)	yes	
New Zealand	New Zealand Inventory of Chemical (NZIoC)	yes	
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	yes	
United States & Puerto Rico	Toxic Substances Control Act (TSCA)	yes	

\*A "yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(ies). A "no" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(ies).

**16. OTHER INFORMATION**

## Notice

Aqua Chemical Supply, Inc. expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein, and shall under no circumstances be liable for incidental or consequential damages.

Do not use ingredient information and/or ingredient percentages in this SDS as a product specification. For product specification information refer to a product specification sheet and/or a certificate of analysis. These can be obtained from your local Aqua Chemical Supply, Inc. sales office.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Aqua Chemical Supply, Inc. makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Aqua Chemical Supply, Inc.'s control and therefore users



are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein.

This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.