

Telephone: (905) 836 0505

Total Hardness Reagent

R-0854

SDS Preparation Date (mm/dd/yyyy): 02/21/2016

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SECTION 1. IDENTIFICATION

Product identifier used on the label

: Total Hardness Reagent

Product Code(s)

Recommended use of the chemical and restrictions on use

: Use as directed by manufacturer for purposes directly related to water testing.

Restriction on use: None known

Chemical family : Mixture

Name, address, and telephone number Name, address, and telephone number of

of the supplier: the manufacturer: Lowry & Associates, Div. of Chem-Aquascience, Refer to supplier

Inc.

5-1151 Gorham Street Newmarket, ON, Canada

L3Y 8Y1

Supplier's Telephone # : (905) 836-0505, Hours 09:00 to 16:30

: (613) 996-6666 (CANUTEC) 24 Hr. Emergency Tel #

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Dark blue liquid. Ammonia odour.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

Flammable Liquids - Category 2 Serious eye damage/eye irritation - Category 2A Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects Specific target organ toxicity, single exposure - Category 3 respiratory tract irritation

Label elements

Hazard pictogram(s)





Signal Word

DANGER!

Hazard statement(s)

Highly flammable liquid and vapor. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.



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Precautionary statement(s)

Keep away from heat, open flames and hot surfaces. - No smoking.

Keep container tightly closed.

Ground and bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Do not breath mist or vapor.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Wear protective gloves and eye/face protection.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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.

If inhaled: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER or doctor/physician if you feel unwell.

In case of fire: Use water fog, dry chemical, CO2 or 'alcohol' foam to extinguish.

Store locked up.

Store in a well-ventilated place. Keep cool.

Keep container tightly closed.

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

Other hazards which do not result in classification: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Chemical name	Common name and synonyms	CAS#	Concentration (% by weight)
Triethanolamine	Ethyl alcohol Ethyl hydrate	102-71-6	79.6
Isopropanol	Isopropyl alcohol 2-Propanol	67-63-0	23

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

Ingestion : Call a physician or poison control centre immediately. Do not induce vomiting. If

vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk

of aspiration. Never give anything by mouth to an unconscious person.

Inhalation : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration. Get medical

attention if symptoms persist.

Skin contact: Wash off with soap and plenty of water. If irritation or symptoms develop, seek medical

attention. Wash contaminated clothing before re-use.

Eye contact : Immediately flush eyes with running water for at least 15 minutes. Obtain medical

attention if irritation persists.



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Most important symptoms and effects, both acute and delayed

: Causes serious eye irritation. Symptoms may include redness, pain, tearing and conjunctivitis. Direct skin contact may cause slight or mild, transient irritation. May cause respiratory irritation. Symptoms may include upper respiratory irritation, coughing and breathing difficulties. May cause central nervous system effects. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Indication of any immediate medical attention and special treatment needed

: Treat symptomatically. This product is a CNS depressant.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Use water fog or fine spray, foams, carbon dioxide or dry chemical. Do not use a solid water stream as it may scatter and spread fire.

Unsuitable extinguishing media

: Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

: Highly flammable liquid and vapor. Vapors may travel considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. Static discharge, impact, friction, and heat may ignite exposed chemical material.

Flammability classification (OSHA 29 CFR 1910.106)

: Flammable Liquids - Category 2

Hazardous combustion products

: Carbon dioxide, carbon monoxide and other unidentified organic compounds.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Special fire-fighting procedures

: Fight fires from a safe distance. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. Individuals involved in the cleanup must wear appropriate personal protective equipment. For personal protection see section 8.

Environmental precautions

Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Methods and material for containment and cleaning up

: Ventilate area of release. Stop spill or leak at source if safely possible. Dike for water control. Use only non-sparking tools and equipment in the clean-up process. Contain and absorb spilled liquid with inert, non-combustible absorbent material (e.g. sand, vermiculite), then place material into open, unsealed containers. For waste disposal, see Section 13 of the SDS.



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Special spill response procedures

If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).

US CERCLA Reportable quantity (RQ): None.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

Use only in well-ventilated areas. Wear protective gloves and eye/face protection. Avoid breathing vapours. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Keep away from heat and flame. Use only non-sparking tools with this material. Avoid contact with incompatible materials. Keep containers tightly closed when not in use. Empty containers retain residue (liquid and/or vapour) and can be dangerous. Do not use pressure to empty drums. Do not cut, weld, drill or grind on or near this container. Follow labeled warnings even after container is emptied.

Conditions for safe storage :

Store in a cool, dry, well-ventilated area. Store away from incompatible materials. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

Incompatible materials

Strong oxidizing agents.; Alkali metals.; Strong acids; Aluminium.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:							
Chemical Name	ACGIF	ACGIH TLV OSHA PEL					
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>			
Triethanolamine	5 mg/m³	N/Av	N/Av	N/Av			
Isopropanol	200 ppm	400 ppm	400 ppm (980 mg/m³)	N/Av			

Exposure controls

Ventilation and engineering measures

: Ensure adequate ventilation, especially in confined areas. Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection

Respiratory protection is required if the concentrations exceed the TLV. NIOSH-approved respirators are recommended. Advice should be sought from respiratory protection specialists. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Skin protection

Wear protective gloves. Advice should be sought from glove suppliers.

Eye / face protection

Wear eye/face protection. Chemical splash goggles are recommended. A full face shield may also be necessary.

Other protective equipment :

An eyewash station and safety shower should be made available in the immediate working area. Depending on conditions of use, an impervious apron should be worn. Other equipment may be required depending on workplace standards.

General hygiene considerations

: Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Do not ingest. Do not eat, drink or smoke when using this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.



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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Dark blue liquid.Odour: Ammonia odour.Odour threshold: Not available.

pH : 10.3

Melting/Freezing point: Not available.

Initial boiling point and boiling range

: 260-315.56°C (500-600°F)

Flash point : 18.9°C (66.0°F)
Flashpoint (Method) : Closed cup
Evaporation rate (BuAe = 1) : Not available.
Flammability (solid, gas) : Not applicable.

Lower flammable limit (% by vol.)

: 2%

Upper flammable limit (% by vol.)

: 12%

Oxidizing properties : None.

Explosive properties : Not explosive **Vapour pressure** : Not available.

Vapour density : 2 Relative density / Specific gravity

: 1.02

Solubility in water : Soluble
Other solubility(ies) : Not available.

Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not applicable.

Viscosity : Not available.

Volatiles (% by weight) : 99% Volatile organic Compounds (VOC's)

: N/Av

Absolute pressure of container

: N/Ap

Flame projection length : N/Ap Other physical/chemical comments

: None known or reported by the manufacturer.

SECTION 10. STABILITY AND REACTIVITY

Reactivity: Not normally reactive.

Chemical stability : Stable under the recommended storage and handling conditions prescribed.

Possibility of hazardous reactions

: Hazardous polymerization will not occur.

Conditions to avoid : Keep away from excessive heat, open flames, sparks and other possible sources of

ignition. Avoid contact with incompatible materials. Do not use in areas without adequate ventilation. Avoid heat, open flames, sparks, static electricity and electrical

equipment.

Incompatible materials: Strong oxidizing agents.; Alkali metals.; Strong acids; Aluminium.



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Hazardous decomposition products

: None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES
Routes of entry skin & eye : YES
Routes of entry Ingestion : YES
Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

May cause irritation of the nose, throat, mucous membranes, and respiratory tract. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and

other central nervous system effects.

Sign and symptoms ingestion

Ingestion can cause gastrointestinal irritation, nausea, and diarrhea.

Sign and symptoms skin

: May cause mild skin irritation.

Sign and symptoms eyes

May cause severe eye irritation. Symptoms may include severe pain, tearing, redness, swelling and blurred vision.

Potential Chronic Health Effects

: Prolonged or repeated skin contact may cause drying and irritation.

Mutagenicity: Not expected to be mutagenic in humans.

Carcinogenicity : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Specific target organ effects: This material is classified as hazardous under U.S. OSHA regulations (29CFR

1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products

Regulations) (WHMIS 2015). Classification:

Specific Target Organ Toxicity, Single Exposure -Category 3 (respiratory) Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects

May cause respiratory irritation. May cause drowsiness or dizziness.

Not classified as specific target organ toxicity-repeated exposure.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

None known or reported by the manufacturer.

Toxicological data

There is no available data for the product itself, only for the ingredients. See below

for individual ingredient acute toxicity data.



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	LC₅₀(4hr)	LD50			
Chemical name	inh, rat	(Oral, rat)	(Rabbit, dermal)		
Triethanolamine	N/Av	6110 mg/kg	> 19 870 mg/kg		
Isopropanol	17 000 ppm (41.8 mg/L) (vapour)	4720 mg/kg	12 890 mg/kg		

Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

: Not expected to be harmful to aquatic organisms. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. See the following tables for individual ingredient ecotoxicity data. Do not allow material to contaminate ground water system.

Ecotoxicity data:

l., .,,, ., ., ., ., .	0.000	1	Toxicity to Fish			
<u>Ingredients</u>	CAS No	LC50 / 96h	NOEC / 21 day	M Factor		
Triethanolamine	102-71-6	11 800 mg/L (Fathead minnow)	N/Av	None.		
Isopropanol	67-63-0	9640 mg/L (Fathead minnow)	N/Av	None.		

<u>Ingredients</u>	CAS No	Toxicity to Daphnia			
	EC50 / 48h	NOEC / 21 day	M Factor		
Triethanolamine	102-71-6	1386 mg/L/24hr (Daphnia magna)	16 mg/L	None.	
Isopropanol	67-63-0	> 10 000 mg/L/24hr (Daphnia magna)	N/Av	None.	

<u>Ingredients</u>	CAS No	То	xicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor	
Triethanolamine	102-71-6	169 mg/L/96hr (Green algae)	N/Av	None.	
Isopropanol	67-63-0	N/Av	N/Av	None.	

Persistence and degradability

: Readily biodegradable

Bioaccumulation potential: No data is available on the product itself.

<u>Components</u>	Partition coefficient n-octanol/water (log Kow)	Bioconcentration factor (BCF)
Triethanolamine (CAS 102-71-6)	-2.53	Not expected to bioaccumulate.
Isopropanol (CAS 67-63-0)	0.05	1



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Mobility in soil : No data is available on the product itself.

Other Adverse Environmental effects

: No data is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal : See Section 7 (Handling and Storage) for further details. Empty containers retain

residue (liquid and/or vapour) and can be dangerous. Do not cut, weld, drill or grind on

or near this container.

Methods of Disposal : Dispose in accordance with all applicable federal, state, provincial and local

regulations.

RCRA: If this product, as supplied, becomes a waste in the United States, it may meet the

criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and

disposal method.

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label	
TDG	UN1993	FLAMMABLE LIQUID, N.O.S. (Isopropanol)	3	II	3	
TDG Additional information	Must be a consexceed 30 kg g	sumer-type product, in Limited Quantity size, no larger to pross.	han 1 L per can. P	ackage wei	ght must not	
49CFR/DOT	UN1993	Flammable Liquids, n.o.s. (Isopropanol)	3	II	3	
49CFR/DOT Additional information	May be shippe kg gross mass	d as LIMITED QUANTITY when transported in cans no	larger than 1 L, in	packages n	ot exceeding 3	
ICAO/IATA	UN1993	Flammable liquid, n.o.s. (Isopropanol)	3	II	3	
ICAO/IATA	Refer to ICAO/	IATA Packing Instruction	!		•	
Additional information						
	UN1993	FLAMMABLE LIQUID, N.O.S. (Isopropanol)	3	II	<u>₹</u>	

Special precautions for user: Keep away from heat, sparks and open flame. - No smoking.

Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture,

according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: Not available.



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SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

La sura di suria		TSCA	CERCLA Reportable	SARA TITLE III: Sec. 302, Extremely	SARA TITLE III: S 372, Specific To	,	
<u>Ingredients</u>	CAS#	Inventory	Quantity(RQ) (40 CFR 117.302):	Hazardous Substance, 40 CFR 355:	Toxic Chemical	de minimus Concentration	
Triethanolamine	102-71-6	Yes	N/Ap	N/Ap	No	N/Ap	
Isopropanol	67-63-0	Yes	None.	None.	Yes	1%	

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Fire Hazard; Immediate (Acute) health hazard; Chronic Health Hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS#	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Triethanolamine	102-71-6	No	N/Ap	No	Yes	Yes	Yes	Yes	Yes
Isopropanol	67-63-0	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes

Canadian Information:

WHMIS Classification: Refer to Section 2 for a WHMIS Classification for this product. All ingredients are present on the DSL.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS#	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Triethanolamine	102-71-6	203-049-8	Present	Present	(2)-308	KE-25940	Present	HSR002785
Isopropanol	67-63-0	200-661-7	Present	Present	(2)-207	KE-29363	Present	HSR001180

SECTION 16. OTHER INFORMATION

Legend : ACGIH: American Conference of Governmental Industrial Hygienists

CA: California

CAS: Chemical Abstract Services

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act

of 1980

CFR: Code of Federal Regulations
CNS: Central Nervous System

CSA: Canadian Standards Association



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DOT: Department of Transportation EPA: Environmental Protection Agency

HMIS: Hazardous Materials Identification System HSDB: Hazardous Substances Data Bank

IARC: International Agency for Research on Cancer

Inh: Inhalation

IUCLID: International Uniform Chemical Information Database

LC: Lethal Concentration

LD: Lethal Dose MA: Massachusetts MN: Minnesota N/Ap: Not Applicable N/Av: Not Available

NFPA: National Fire Protection Association

NIOSH: National Institute of Occupational Safety and Health

NJ: New Jersey

NTP: National Toxicology Program

OSHA: Occupational Safety and Health Administration

PA: Pennsylvania

PEL: Permissible exposure limit

RCRA: Resource Conservation and Recovery Act

RI: Rhode Island

RTECS: Registry of Toxic Effects of Chemical Substances SARA: Superfund Amendments and Reauthorization Act

STEL: Short Term Exposure Limit

TDG: Canadian Transportation of Dangerous Goods Act & Regulations

TLV: Threshold Limit Values TWA: Time Weighted Average

WHMIS: Workplace Hazardous Materials Identification System

.

: Canadian Centre for Occupational Health and Safety, CCInfoWeb Databases, 2015

(Chempendium, RTECs, HSDB, INCHEM).

European Chemicals Agency, Classification Legislation, 2015

OECD- The Global Portal to Information on Chemical Substances - eChemPortal,

2015

Material Safety Data Sheet from manufacturer

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Other special considerations for handling

: Provide adequate information, instruction and training for operators.

Prepared for:

References

Lowry & Associates, Div. of Chem-Aquascience, Inc. 5-1151 Gorham Street Newmarket, ON L3Y 8Y1

ASSOCIATES

Prepared by:

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http://www.thecompliancecenter.com



DISCLAIMER



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