

Hardness Reagent A

R-0614

SDS Preparation Date (mm/dd/yyyy): 04/29/2016

Page 1 of 10

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Hardness Reagent A**

Product Code(s) : R-0614

Recommended use of the chemical and restrictions on use

: Use as directed by manufacturer for purposes directly related to water testing.
Use pattern: Professional Use Only
Recommended restrictions: None known.

Chemical family : Mixture

Name, address, and telephone number of the supplier:

Lowry & Associates, Div. of Chem-Aquascience, Inc.

5-1151 Gorham Street
Newmarket, ON, Canada
L3Y 8Y1

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

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

Name, address, and telephone number of the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear colourless liquid. Odorless.

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:

Serious eye damage/eye irritation - Category 1

Skin Corrosion/Irritation - Category 2

Label elements

Hazard pictogram(s)



Signal Word

DANGER!

Hazard statement(s)

Causes serious eye damage.

Causes skin irritation.

Precautionary statement(s)

Wash thoroughly after handling.

Wear eye protection/face protection.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Immediately call a POISON CENTRE or doctor/physician.

If on skin: Wash with plenty of water.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Hardness Reagent A

R-0614

SDS Preparation Date (mm/dd/yyyy): 04/29/2016

Page 2 of 10

SAFETY DATA SHEET

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)
2-Amino-2-methyl-1-propanol	Isobutolamine; AMP	124-68-5	25.00
1-Propanol, 2-amino-2-methyl-, hydrochloride	1-Propanol, 2-amino-2-methyl-, hydrochloride	3207-12-3	2.00
Glycine, N,N'-1,2-cyclohexanediylbis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2)	CDTA-Mg	63451-33-2	2.00

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Do NOT induce vomiting. Have victim rinse mouth with water, then give one to two glasses of water to drink. Never give anything by mouth to an unconscious person. Call a physician.
- 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. Obtain medical attention if symptoms develop and persist.
- Skin contact* : Wash off immediately with plenty of water. Remove and wash contaminated clothing before re-use. If irritation or symptoms develop, seek medical attention.
- Eye contact* : Flush eyes with water for at least 15 minutes. Immediately call a POISON CENTER or doctor/physician.

Most important symptoms and effects, both acute and delayed

- : Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Causes skin irritation. Symptoms may include redness, itching and swelling.

Indication of any immediate medical attention and special treatment needed

- : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

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

- : Burning may produce irritating, toxic and obnoxious fumes.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

Hazardous combustion products

- : Carbon oxides

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

Hardness Reagent A

R-0614

SDS Preparation Date (mm/dd/yyyy): 04/29/2016

Page 3 of 10

SAFETY DATA SHEET

: 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

: 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. Wear suitable protective equipment. Refer to protective measures listed in sections 7 and 8. Restrict access to area until completion of clean-up.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces.

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. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13).

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. Do not breathe mist or vapor. Avoid contact with eyes, skin and clothing. Keep away from extreme heat and flame. Keep away from incompatibles. Keep containers tightly closed when not in use. Wash thoroughly after handling.

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 : None known or reported by the manufacturer.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Chemical Name	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
2-Amino-2-methyl-1-propanol	N/Av	N/Av	N/Av	N/Av
1-Propanol, 2-amino-2-methyl-, hydrochloride	N/Av	N/Av	N/Av	N/Av
Glycine, N,N'-1,2-cyclohexanediybis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2)]	N/Av	N/Av	N/Av	N/Av

Hardness Reagent A

R-0614

SDS Preparation Date (mm/dd/yyyy): 04/29/2016

Page 4 of 10

SAFETY DATA SHEET**Exposure controls****Ventilation and engineering measures**

: Use in a well-ventilated area. Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection

: If airborne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. 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. Wear safety glasses with side shields (or goggles).

Other protective equipment

: Wear sufficient clothing to prevent skin contact. An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations

: Do not breathe mist or vapor. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Do not eat, drink, smoke or use cosmetics while working with 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. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

: Clear colourless liquid.

Odour

: Odorless.

Odour threshold

: N/Av

pH

: 10

Melting/Freezing point

: Not available.

Initial boiling point and boiling range

: Not available.

Flash point

: Not applicable.

Flashpoint (Method)

: Not applicable.

Evaporation rate (BuAe = 1)

: N/Av

Flammability (solid, gas)

: Not applicable.

Lower flammable limit (% by vol.)

: Not applicable.

Upper flammable limit (% by vol.)

: Not applicable.

Oxidizing properties

: None known.

Explosive properties

: Not explosive

Vapour pressure

: 17 mmHg

Vapour density

: 6

Relative density / Specific gravity

: 1

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 available.

Viscosity

: Not available.

Volatiles (% by weight)

: 97.5%

Hardness Reagent A

R-0614

SDS Preparation Date (mm/dd/yyyy): 04/29/2016

Page 5 of 10

SAFETY DATA SHEET

Volatile organic Compounds (VOC's)

: Not available.

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 : Material is stable under normal conditions.

Possibility of hazardous reactions

: Hazardous polymerization does not occur.

Conditions to avoid

: Avoid excessive heat, sparks and open flame. Avoid contact with incompatible materials. Do not use in areas without adequate ventilation.

Incompatible materials

: See Section 7 (Handling and Storage) for further details.

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

: YES

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: May cause respiratory irritation. Symptoms may include sore throat, running nose and shortness of breath.

Sign and symptoms ingestion

: Harmful if swallowed. Ingestion may irritate digestive tract and cause nausea, vomiting and diarrhea.

Sign and symptoms skin

: Causes skin irritation. Symptoms may include redness, blistering, pain and swelling.

Sign and symptoms eyes

: Causes serious eye damage. Symptoms may include stinging, tearing, redness and swelling. Permanent eye damage including blindness could result.

Potential Chronic Health Effects

: Prolonged or repeated skin contact may cause defatting and drying resulting in irritation and possible dermatitis.

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.

Hardness Reagent A

R-0614

SDS Preparation Date (mm/dd/yyyy): 04/29/2016

Page 6 of 10

SAFETY DATA SHEET

Specific target organ effects : This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Medical conditions aggravated by overexposure

: None known.

Synergistic materials

: Not available.

Toxicological data

: There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
2-Amino-2-methyl-1-propanol	N/Av	2900 mg/kg	N/Av
1-Propanol, 2-amino-2-methyl-, hydrochloride	N/Av	N/Av	N/Av
Glycine, N,N'-1,2-cyclohexanediybis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2)]	N/Av	N/Av	N/Av

Other important toxicological hazards

: None known.

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. Do not allow material to contaminate ground water system. See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC₅₀ / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
2-Amino-2-methyl-1-propanol	124-68-5	190 mg/L (Rainbow trout)	N/Av	None.
1-Propanol, 2-amino-2-methyl-, hydrochloride	3207-12-3	N/Av	N/Av	None.
Glycine, N,N'-1,2-cyclohexanediybis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2)]	63451-33-2	N/Av	N/Av	None.

Hardness Reagent A

R-0614

SDS Preparation Date (mm/dd/yyyy): 04/29/2016

Page 7 of 10

SAFETY DATA SHEET

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
2-Amino-2-methyl-1-propanol	124-68-5	193 mg/L (Daphnia magna)	N/Av	None.
1-Propanol, 2-amino-2-methyl-, hydrochloride	3207-12-3	N/Av	N/Av	None.
Glycine, N,N'-1,2-cyclohexanediylbis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2)]	63451-33-2	N/Av	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
2-Amino-2-methyl-1-propanol	124-68-5	520 mg/L (Green algae)	N/Av	None.
1-Propanol, 2-amino-2-methyl-, hydrochloride	3207-12-3	N/Av	N/Av	None.
Glycine, N,N'-1,2-cyclohexanediylbis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2)]	63451-33-2	N/Av	N/Av	None.

Persistence and degradability

: No information available.

Bioaccumulation potential

: No information available.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
2-Amino-2-methyl-1-propanol (CAS 124-68-5)	N/Av	N/Av
1-Propanol, 2-amino-2-methyl-, hydrochloride (CAS 3207-12-3)	N/Av	N/Av
Glycine, N,N'-1,2-cyclohexanediylbis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2)] (CAS 63451-33-2)	N/Av	N/Av

Mobility in soil

: No information available.

Other Adverse Environmental effects

: No information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle waste according to recommendations in Section 7.

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. For disposal of unused or waste material, check with local, state and federal environmental agencies.

Hardness Reagent A


R-0614

SDS Preparation Date (mm/dd/yyyy): 04/29/2016

Page 8 of 10

SAFETY DATA SHEET

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				

Special precautions for user : None known or reported by the manufacturer.

Environmental hazards : This substance does not meet the criteria for an environmentally hazardous substance 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.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

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

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity (RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
2-Amino-2-methyl-1-propanol	124-68-5	Yes	N/Ap	N/Av	No	N/Ap
1-Propanol, 2-amino-2-methyl-, hydrochloride	3207-12-3	Yes	N/Ap	N/Av	No	N/Ap
Glycine, N,N'-1,2-cyclohexanediyl bis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2)	63451-33-2	Yes	N/Ap	N/Av	No	N/Ap

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: 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:

Hardness Reagent A

R-0614

SDS Preparation Date (mm/dd/yyyy): 04/29/2016

Page 9 of 10

SAFETY DATA SHEET

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
2-Amino-2-methyl-1-propanol	124-68-5	No	N/Ap	No	Yes	No	Yes	Yes	No
1-Propanol, 2-amino-2-methyl-, hydrochloride	3207-12-3	No	N/Ap	No	No	No	No	No	No
Glycine, N,N'-1,2-cyclohexanediylbis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2)]	63451-33-2	No	N/Ap	No	No	No	No	No	No

Canadian Information:

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (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
2-Amino-2-methyl-1-propanol	124-68-5	204-709-8	Present	Present	(9)-118	KE-01473	Present	HSR003544
1-Propanol, 2-amino-2-methyl-, hydrochloride	3207-12-3	221-713-5	Present	Present		KE-01474	Present	
Glycine, N,N'-1,2-cyclohexanediylbis[N-(carboxymethyl)-, magnesium sodium salt (1:1:2)]	63451-33-2	264-195-6	No data available.	No data available.	No data available.	No data available.	No data available.	No data available.

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- CSA: Canadian Standards Association
- 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
- LC: Lethal Concentration
- LD: Lethal Dose
- MN: Minnesota
- N/Ap: Not Applicable
- N/Av: Not Available
- NFPA: National Fire Protection Association

Hardness Reagent A

R-0614

SDS Preparation Date (mm/dd/yyyy): 04/29/2016

Page 10 of 10

SAFETY DATA SHEET

NIOSH: National Institute of Occupational Safety and Health
 NJ: New Jersey
 NTP: National Toxicology Program
 OECD: Organisation for Economic Co-operation and Development
 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
 TLV: Threshold Limit Values
 TWA: Time Weighted Average
 WHMIS: Workplace Hazardous Materials Identification System

References


- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2016.
- 2. International Agency for Research on Cancer Monographs, searched 2016.
- 3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2016 (Chempendium, HSDB and RTECs).
- 4. Material Safety Data Sheets from manufacturer.
- 5. US EPA Title III List of Lists - 2016 version.
- 6. California Proposition 65 List

Preparation Date (mm/dd/yyyy)

: 04/29/2016

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p><u>Prepared for:</u> Lowry & Associates, Div. of Chem-Aquascience, Inc. 5-1151 Gorham Street Newmarket, ON L3Y 8Y1 www.lowryassociates.ca</p>	
<p><u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.); (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	

DISCLAIMER

This Safety Data Sheet was prepared by ICC The Compliance Center Inc using information provided by / obtained from Lowry & Associates, Div. of Chem-Aquascience, Inc. and CCOHS' Web Information Service. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc and Lowry & Associates, Div. of Chem-Aquascience, Inc. expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc and Lowry & Associates, Div. of Chem-Aquascience, Inc..

END OF DOCUMENT