

1. Product and Company Identification

Product identifier	BOILERMATE 9100 Hardness Checker	
Other means of identification	Not available	
Recommended use	Boiler Water Treatment	
Recommended restrictions	None known.	
Manufacturer	Miura America Co., Ltd. 2200 Steven B Smith Blvd Rockmart, GA 30153 U.S.A. Phone: 678-685-0929 Toll Free: 1-888-309-557 Fax: 678-685-0930 Emergency Phone: 1-800-424-9300 (CHEMTREC)	

2. Hazards Identification

Physical hazards	Not classified.	
Health hazards	Serious eye damage/eye irritation	Category 2
	Carcinogenicity	Category 2
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements



Signal word	Warning
Hazard statement	Causes serious eye irritation. Suspected of causing cancer.

Precautionary statement

Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.
Response	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 exposed or concerned: Get medical advice/attention.
Storage	Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information 100% of the mixture consists of component(s) of unknown acute inhalation toxicity.
1% of the mixture consists of component(s) of unknown acute oral toxicity.

3. Composition/Information on Ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
1,2-Propanediol		57-55-6	60 - 100
Ethanol, 2,2",2""-nitriлотris-		102-71-6	10 - 30
Ethanol, 2,2"-iminobis-		111-42-2	0.1 - 1

Composition comments US GHS: The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

4. First Aid Measures

Inhalation If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.

Skin contact	Flush with cool water. Wash with soap and water. Obtain medical attention if irritation persists.
Eye contact	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.
Ingestion	Rinse mouth. Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Never give anything by mouth if victim is unconscious, or is convulsing. Obtain medical attention immediately.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed	Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Keep out of reach of children.

5. Fire Fighting Measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Not available.
Specific hazards arising from the chemical	Firefighters should wear a self-contained breathing apparatus.
Special protective equipment and precautions for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Fire-fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.
Hazardous combustion products	May include and are not limited to: Oxides of nitrogen. Oxides of carbon.
Explosion data	
Sensitivity to mechanical impact	Not available.
Sensitivity to static discharge	Not available.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Keep people away from and upwind of spill/leak. Keep out of low areas. 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 protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Stop leak if you can do so without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Never return spills in original containers for re-use. Clean surface thoroughly to remove residual contamination. Following product recovery, flush area with water. Prevent entry into waterways, sewer, basements or confined areas. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Do not discharge into lakes, streams, ponds or public waters.

7. Handling and Storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists of this product. Wear appropriate personal protective equipment. Use only with adequate ventilation. Avoid prolonged exposure.
Conditions for safe storage, including any incompatibilities	Observe good industrial hygiene practices. When using do not eat or drink. Wash thoroughly after handling. Store locked up. Store in a cool, dry, well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep out of reach of children.

8. Exposure Controls/Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Ethanol, 2,2",2""-nitrioltris- (CAS 102-71-6)	TWA	5 mg/m3	
Ethanol, 2,2"-iminobis- (CAS 111-42-2)	TWA	1 mg/m3	Inhalable fraction and vapor.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Ethanol, 2,2"-iminobis- (CAS 111-42-2)	TWA	15 mg/m3	
		3 ppm	

US. AIHA Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value	Form
1,2-Propanediol (CAS 57-55-6)	TWA	10 mg/m3	Aerosol.

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines Chemicals listed in section 3 that are not listed here do not have established limit values for ACGIH or OSHA PEL.

Appropriate engineering controls Ensure adequate ventilation.

Individual protection measures, such as personal protective equipment

Eye/face protection Face shield or chemical goggles.

Skin protection

Hand protection Impervious gloves. Confirm with reputable supplier first.

Other As required by employer code.

Respiratory protection Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.

Thermal hazards Not applicable.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. When using do not eat or drink.

9. Physical and Chemical Properties

Appearance Aqueous solution.

Physical state Liquid.

Form Liquid.

Color dark blue / Purple

Odor Slight amine

Odor threshold Not available.

pH 10.1 (1% solution)

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Pour point Not available.

Specific gravity 1.1

Partition coefficient (n-octanol/water) Not available.

Flash point 248.0 °F (120.0 °C)

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Miscible
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and Reactivity

Reactivity	This product may react with acids. This product may react with strong bases.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	Avoid temperatures exceeding the flash point. Do not mix with other chemicals.
Incompatible materials	Acids. Caustics.
Hazardous decomposition products	May include and are not limited to: Oxides of carbon. Oxides of nitrogen.

11. Toxicological Information

Routes of exposure Eye, Skin contact, Inhalation, Ingestion.

Information on likely routes of exposure

Ingestion	May cause stomach distress, nausea or vomiting.
Inhalation	Prolonged inhalation may be harmful.
Skin contact	Prolonged or repeated exposure may cause liver and kidney damage. These effects have not been observed in humans.

US ACGIH Threshold Limit Values: Skin designation

Ethanol, 2,2"-iminobis- (CAS 111-42-2) IV Can be absorbed through the skin.

Eye contact Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
1,2-Propanediol (CAS 57-55-6)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	20800 mg/kg
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Dog	19000 mg/kg
	Guinea pig	184000 mg/kg
	Mouse	23900 mg/kg
	Rabbit	14800 mg/kg
	Rat	20000 mg/kg
Ethanol, 2,2",2""-nitritotris- (CAS 102-71-6)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	>= 2000 mg/kg
<i>Inhalation</i>		
LC50	Not available	

Components	Species	Test Results
<i>Oral</i>		
LD50	Guinea pig	2200 mg/kg
	Mouse	5846 mg/kg
	Rabbit	2200 mg/kg
	Rat	5530 mg/kg
Ethanol, 2,2"-iminobis- (CAS 111-42-2)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	11.9 ml/kg
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Rat	710 mg/kg
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.	
Exposure minutes	Not available.	
Erythema value	Not available.	
Oedema value	Not available.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Corneal opacity value	Not available.	
Iris lesion value	Not available.	
Conjunctival reddening value	Not available.	
Conjunctival oedema value	Not available.	
Recover days	Not available.	
Respiratory or skin sensitization		
Respiratory sensitization	Not available.	
Skin sensitization	This product is not expected to cause skin sensitization.	
US ACGIH Threshold Limit Values: Skin designation		
Ethanol, 2,2"-iminobis- (CAS 111-42-2)	IV Can be absorbed through the skin.	
US ACGIH Threshold Limit Values: Skin designation		
Ethanol, 2,2"-iminobis- (CAS 111-42-2)	IV Can be absorbed through the skin.	
Germ cell mutagenicity	Not classified.	
Mutagenicity	Not classified.	
Carcinogenicity	See below.	
ACGIH Carcinogens		
Ethanol, 2,2"-iminobis- (CAS 111-42-2)	A3 Confirmed animal carcinogen with unknown relevance to humans.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Ethanol, 2,2",2""-nitrotris- (CAS 102-71-6)	Volume 77 - 3 Not classifiable as to carcinogenicity to humans.	
Ethanol, 2,2"-iminobis- (CAS 111-42-2)	Volume 77, Volume 101 - 2B Possibly carcinogenic to humans.	
US - California Proposition 65 - CRT: Listed date/Carcinogenic substance		
Ethanol, 2,2"-iminobis- (CAS 111-42-2)	Carcinogenic.	
Reproductive toxicity	Not classified.	
Teratogenicity	Not classified.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not classified.	
Chronic effects	Prolonged inhalation may be harmful.	
Further information	Not available.	
Name of Toxicologically Synergistic Products	Not available.	

12. Ecological Information

Ecotoxicity See below

Components		Species	Test Results
1,2-Propanediol (CAS 57-55-6)			
Crustacea	EC50	Daphnia	10000 mg/L, 48 Hours
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	710 mg/l, 96 hours
Ethanol, 2,2",2""-nitritoltris- (CAS 102-71-6)			
Algae	IC50	Algae	216 mg/L, 72 Hours
Aquatic			
Crustacea	EC50	Water flea (Ceriodaphnia dubia)	565.2 - 658.3 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	10610 - 13010 mg/l, 96 hours
Ethanol, 2,2"-iminobis- (CAS 111-42-2)			
Algae	IC50	Algae	7.8 mg/L, 72 Hours
Crustacea	EC50	Daphnia	55 mg/L, 48 Hours
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	100 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Mobility in general 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 Considerations

Disposal instructions 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 between 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 (see: 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

General Canada: TDG Proof of Classification: In accordance with Part 2.2.1 (SOR/2014-152) of the Transportation of Dangerous Goods Regulations, we certify that the classification of this product is correct as of the SDS date of issue. If applicable, the technical name and the classification of the product will appear below.

U.S. Department of Transportation (DOT)

Not regulated as dangerous goods.

Transportation of Dangerous Goods (TDG - Canada)

Not regulated as dangerous goods.

15. Regulatory Information

Canadian federal regulations This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Canada WHMIS Ingredient Disclosure: Threshold limits

1,2-Propanediol (CAS 57-55-6)	1 %
Ethanol, 2,2",2""-nitritoltris- (CAS 102-71-6)	1 %
Ethanol, 2,2"-iminobis- (CAS 111-42-2)	1 %

WHMIS status Controlled

WHMIS classification Class D - Division 2A, 2B



US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

Ethanol, 2,2"-iminobis- (CAS 111-42-2) 1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Ethanol, 2,2"-iminobis- (CAS 111-42-2) Listed.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Ethanol, 2,2"-iminobis- (CAS 111-42-2) Listed.

US CAA Section 111 Volatile Organic Compounds: Listed substance

1,2-Propanediol (CAS 57-55-6) Listed.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Ethanol, 2,2"-iminobis- (CAS 111-42-2) Listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Not regulated.

US state regulations WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Hazardous Substances (Director's): Listed substance

Ethanol, 2,2"-iminobis- (CAS 111-42-2) Listed.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Ethanol, 2,2"-iminobis- (CAS 111-42-2) Listed.

US - Illinois Chemical Safety Act: Listed substance

Ethanol, 2,2"-iminobis- (CAS 111-42-2) Listed.

US - Louisiana Spill Reporting: Listed substance

Ethanol, 2,2"-iminobis- (CAS 111-42-2) Listed.

US - Minnesota Haz Subs: Listed substance

1,2-Propanediol (CAS 57-55-6) Listed.

Ethanol, 2,2",2""-nitrioltris- (CAS 102-71-6) Listed.

Ethanol, 2,2"-iminobis- (CAS 111-42-2) Listed.

US - New Jersey RTK - Substances: Listed substance

1,2-Propanediol (CAS 57-55-6) Listed.

Ethanol, 2,2",2""-nitrioltris- (CAS 102-71-6) Listed.

Ethanol, 2,2"-iminobis- (CAS 111-42-2) Listed.

US - New York Release Reporting: Hazardous Substances: Listed substance

Ethanol, 2,2"-iminobis- (CAS 111-42-2) Listed.

US - Texas Effects Screening Levels: Listed substance

1,2-Propanediol (CAS 57-55-6) Listed.

Ethanol, 2,2",2""-nitrioltris- (CAS 102-71-6) Listed.

Ethanol, 2,2"-iminobis- (CAS 111-42-2) Listed.

US. Massachusetts RTK - Substance List

Ethanol, 2,2",2""-nitrotris- (CAS 102-71-6) Listed.
 Ethanol, 2,2"-iminobis- (CAS 111-42-2) Listed.

US. Pennsylvania RTK - Hazardous Substances

1,2-Propanediol (CAS 57-55-6) Listed.
 Ethanol, 2,2",2""-nitrotris- (CAS 102-71-6) Listed.
 Ethanol, 2,2"-iminobis- (CAS 111-42-2) Listed.

US. Rhode Island RTK

Ethanol, 2,2"-iminobis- (CAS 111-42-2) Listed.

Inventory status

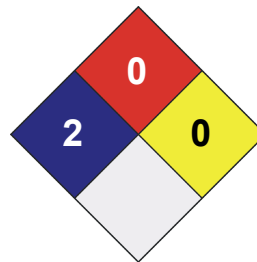
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

HEALTH	* 2
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	X

**Disclaimer**

Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

Issue date

16-July-2015

Effective date

16-July-2015

Further information

For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.

Prepared by

Dell Tech Laboratories, Ltd. Phone: (519) 858-5021

Other information

This Safety Data Sheet was prepared to comply with the current OSHA Hazard Communication Standard (HCS) adoption of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).
 This SDS conforms to the ANSI Z400.1/Z129.1-2010 Standard.