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<b>SAFETY DATA SHEET</b>		Revision Date: 09/04/2017
		Print Date: 7/30/2018
		SDS Number: R0247408
Amertrol™ 1100 ODT BOILER WATER TREATMENT ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 825378		Version: 2.0

## 1. PRODUCT AND COMPANY IDENTIFICATION

### Product identifier

Trade name : Amertrol™ 1100 ODT  
BOILER WATER TREATMENT  
™ Trademark, Solenis or its subsidiaries or affiliates,  
registered in various countries

### Recommended use of the chemical and restrictions on use

<b>Details of the supplier of the safety data sheet</b> Solenis Singapore Pte Ltd 100H Pasir Panjang Road #04-02 OC@Pasir Panjang Singapore 118524 Singapore  EHSProductSafetyTeam@solenis.com	<b>Emergency telephone number</b> 001 800-7653-6472 , or contact your local emergency telephone number at 995  <b>Product Information</b> +65 6775 5366
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## 2. HAZARDS IDENTIFICATION

### GHS Classification

Skin corrosion/irritation : Category 1

Serious eye damage/eye irritation : Category 1

### GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**  
P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
**Response:**  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

P305 + P351 + P338 + P310 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 CENTER/doctor.

P363 Wash contaminated clothing before reuse.

**Storage:**

P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards which do not result in classification**

No information available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Mixture

**Hazardous components**

**4. FIRST AID MEASURES**

General advice : Move out of dangerous area.  
 Consult a physician.  
 Show this safety data sheet to the doctor in attendance.  
 Do not leave the victim unattended.

If inhaled : Move to fresh air.  
 If breathed in, move person into fresh air.  
 Keep patient warm and at rest.  
 If unconscious, place in recovery position and seek medical advice.  
 If symptoms persist, call a physician.

In case of skin contact : If on skin, rinse well with water.  
 Wash contaminated clothing before re-use.

In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 Continue rinsing eyes during transport to hospital.  
 Remove contact lenses.  
 Protect unharmed eye.

If swallowed : Get medical attention immediately.

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Do NOT induce vomiting.  
 Rinse mouth with water.  
 Do not give milk or alcoholic beverages.  
 Never give anything by mouth to an unconscious person.  
 If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed : Sulfur dioxide may be released if this material comes into contact with acids, water and/or ice. In contact with moisture, sulfur dioxide forms sulfuric acid which is corrosive to skin and mucous membranes.  
 Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:  
 stomach or intestinal upset (nausea, vomiting, diarrhea)  
 irritation (nose, throat, airways)  
 Cough  
 lung edema (fluid buildup in the lung tissue)  
 Difficulty in breathing  
 Causes serious eye damage.  
 Causes severe burns.

Notes to physician : No hazards which require special first aid measures.

**5. FIREFIGHTING MEASURES**

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
 Water spray  
 Foam  
 Carbon dioxide (CO2)  
 Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Oxides of phosphorus  
 potassium oxide  
 sodium monoxide  
 sodium sulfide residue  
 sulfur dioxide  
 toxic fumes  
 Ammonia  
 carbon dioxide and carbon monoxide  
 nitrogen oxides (NOx)

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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Product is compatible with standard fire-fighting agents.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

**6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

**7. HANDLING AND STORAGE**

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust. Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. When diluting, always add the product to water. Never add water to the product. Container hazardous when empty. Avoid contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8. Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Components with workplace control parameters**

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Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
POTASSIUM HYDROXIDE	1310-58-3	STEL	2 mg/m <sup>3</sup>	SG OEL
2-DIETHYLAMINOETHANOL	100-37-8	TWA	2 ppm 9,6 mg/m <sup>3</sup>	SG OEL

**Engineering measures** : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

**Personal protective equipment**

## Hand protection

## Remarks

: The suitability for a specific workplace should be discussed with the producers of the protective gloves.

## Eye protection

: Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.  
 Maintain eye wash station in immediate work area.

## Skin and body protection

: Wear as appropriate:  
 Impervious clothing  
 Chemical resistant apron  
 Safety shoes  
 Choose body protection according to the amount and concentration of the dangerous substance at the work place.  
 Discard gloves that show tears, pinholes, or signs of wear.

## Hygiene measures

: Wash hands before breaks and at the end of workday.  
 When using do not eat or drink.  
 Ensure that eyewash stations and safety showers are close to the workstation location.  
 When using do not smoke.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state : liquid  
 Odour : No data available  
 Odour Threshold : No data available  
 pH : 13,9  
 Melting point/freezing point : No data available  
 Boiling point/boiling range : > 100 °C

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- Flash point : Not applicable
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available
- Upper explosion limit : 11,7 %(V)  
Calculated Explosive Limit
- Lower explosion limit : 6,7 %(V)  
Calculated Explosive Limit
- Vapour pressure : 27,9972 hPa (20 °C)  
Calculated Vapor Pressure
- Relative vapour density : No data available
- Relative density : No data available
- Density : 1,273 g/cm3 (25 °C)
- Solubility(ies)
  - Water solubility : No data available
  - Solubility in other solvents : No data available
- Partition coefficient: n-octanol/water : No data available
- Thermal decomposition : No data available
- Viscosity
  - Viscosity, dynamic : No data available
  - Viscosity, kinematic : No data available
- Oxidizing properties : No data available

**10. STABILITY AND REACTIVITY**

- Reactivity : No decomposition if stored and applied as directed.
- Chemical stability : Stable under recommended storage conditions.
- Possibility of hazardous reactions : Product will not undergo hazardous polymerization.
- Conditions to avoid : excessive heat  
Exposure to moisture
- Incompatible materials : Acids

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- Alcohols
- aluminum
- Amines
- chlorinated solvents
- halogenated hydrocarbons
- Metals
- nitrates
- organic solvent
- peroxides
- Strong oxidizing agents
- water
- Zinc

Aqueous solutions of this product corrode steel. This product should not be used in conjunction with trimethylol propane or trimethylol propane-derived products. There is a possibility that bicyclic phosphates or phosphites can be produced as a result of the thermal decomposition of this product in combination with trimethylol propane, trimethylol propane-derived products or their corresponding trimethylol propane alkane homologs. Bicyclic phosphates and phosphites are a class of materials with acute neurotoxic properties which produce characteristic convulsive seizures in test animals.

Hazardous decomposition products : carbon dioxide and carbon monoxide  
 Nitrogen oxides (NOx)  
 Oxides of phosphorus  
 potassium oxide  
 Sodium oxides  
 sodium sulfide residue  
 toxic fumes

**11. TOXICOLOGICAL INFORMATION**

Information on likely routes of exposure : Inhalation  
 Skin contact  
 Eye Contact  
 Ingestion

**Acute toxicity**

Not classified based on available information.

**Product:**

Acute oral toxicity : Acute toxicity estimate : > 2.000 mg/kg  
 Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate : > 20 mg/l  
 Exposure time: 4 h  
 Test atmosphere: vapour  
 Method: Calculation method

Remarks: Excessive heat or contact with acids, water and/or ice, releases sulfur dioxide gas which may be harmful or

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deadly if inhaled.

Acute dermal toxicity : Acute toxicity estimate : > 2.000 mg/kg  
 Method: Calculation method

**Skin corrosion/irritation**

Causes severe burns.

**Product:**

Remarks: Causes severe skin burns and eye damage., The feeling of irritation or pain may be delayed.

**Serious eye damage/eye irritation**

Causes serious eye damage.

**Product:**

Remarks: May cause irreversible eye damage., Solutions may be severely irritating or cause burns.

**Respiratory or skin sensitisation**

Skin sensitisation: Not classified based on available information.

Respiratory sensitisation: Not classified based on available information.

**Germ cell mutagenicity**

Not classified based on available information.

**Carcinogenicity**

Not classified based on available information.

**Reproductive toxicity**

Not classified based on available information.

**STOT - single exposure**

Not classified based on available information.

**STOT - repeated exposure**

Not classified based on available information.

**Aspiration toxicity**

Not classified based on available information.

**Further information**

**Product:**

Remarks: No data available

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Product:**

Toxicity to fish : LC 50 (Oncorhynchus mykiss (rainbow trout)): 5.487 mg/l  
 Exposure time: 96 h  
 Test Type: static test

LC 50 (Pimephales promelas (fathead minnow)): 2.745 mg/l  
 Exposure time: 96 h  
 Test Type: static test

Toxicity to daphnia and other : LC 50 (Water flea (Ceriodaphnia dubia)): 2.500 mg/l



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aquatic invertebrates

Exposure time: 48 h  
 Test Type: static test

**Persistence and degradability**

No data available

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**Other adverse effects**

No data available

**Product:**

Additional ecological information : No data available

**13. DISPOSAL CONSIDERATIONS**

**Disposal methods**

General advice : Do not dispose of waste into sewer.  
 Do not contaminate ponds, waterways or ditches with chemical or used container.  
 Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.  
 Dispose of as unused product.  
 Empty containers should be taken to an approved waste handling site for recycling or disposal.  
 Do not re-use empty containers.

**14. TRANSPORT INFORMATION**

**International transport regulations**

**REGULATION**

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.
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**INTERNATIONAL MARITIME DANGEROUS GOODS**

UN 1719	CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE)	8		III	
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**INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO**

UN 1719	Caustic alkali liquid, n.o.s. (POTASSIUM HYDROXIDE)	8		III	
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**INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER**

UN	1719	Caustic alkali liquid, n.o.s. (POTASSIUM HYDROXIDE)	8	III
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**\*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID**

Marine pollutant	no
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Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

**15. REGULATORY INFORMATION**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subjected to the SDS, labelling, PEL and other requirements in the Act/Regulations.**

Singapore. Hazardous Substances Control List (Environmental Pollution Cont Substances) :


Singapore. CWC. Chemical Weapons (Prohibition) Act, (Schedule, Parts 1-3) as amended : Neither banned nor restricted

Singapore. Explosive Precursors (Arms and Explosives Act, Second Schedule, 2003 Revision, as amended) : Neither banned nor restricted

Singapore. Hazardous Substances Transport, Storage & Use Permissions (Environmental Protection and Management (Hazardous Substances) Regulations) : Neither banned nor restricted

**The components of this product are reported in the following inventories:**

- TSCA : On TSCA Inventory
- DSL : All components of this product are on the Canadian DSL
- AICS : On the inventory, or in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory

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IECSC : On the inventory, or in compliance with the inventory

#### Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

## 16. OTHER INFORMATION

#### Further information

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#### Full text of H-Statements referred to under section 3.

H226 Flammable liquid and vapour.  
H290 May be corrosive to metals.

#### Further information

Other information : The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by the Solenis Environmental Health and Safety Department.

#### Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :

ACGIH : American Conference of Industrial Hygienists

BEI : Biological Exposure Index

CAS : Chemical Abstracts Service (Division of the American Chemical Society).

CMR : Carcinogenic, Mutagenic or Toxic for Reproduction

FG : Food grade

GHS : Globally Harmonized System of Classification and Labeling of Chemicals.


H-statement : Hazard Statement

IATA : International Air Transport Association.

IATA-DGR : Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

ICAO : International Civil Aviation Organization

ICAO-TI (ICAO) : Technical Instructions by the "International Civil Aviation Organization"

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IMDG : International Maritime Code for Dangerous Goods  
 ISO : International Organization for Standardization  
 logPow : octanol-water partition coefficient  
 LCxx : Lethal Concentration, for xx percent of test population  
 LDxx : Lethal Dose, for xx percent of test population.  
 ICxx : Inhibitory Concentration for xx of a substance  
 Ecxx : Effective Concentration of xx  
 N.O.S.: Not Otherwise Specified  
 OECD : Organization for Economic Co-operation and Development  
 OEL : Occupational Exposure Limit  
 P-Statement : Precautionary Statement  
 PBT : Persistent , Bioaccumulative and Toxic  
 PPE : Personal Protective Equipment  
 STEL : Short-term exposure limit  
 STOT : Specific Target Organ Toxicity  
 TLV : Threshold Limit Value  
 TWA : Time-weighted average  
 vPvB : Very Persistent and Very Bioaccumulative  
 WEL : Workplace Exposure Level

AU OEL : Australia. Workplace Exposure Standards for Airborne Contaminants.  
 CN OEL : China. Occupational Exposure Limits  
 HK OEL : Hong Kong. Code of Practice on Control of Air Impurities (Chemical Substances) in the Workplace  
 IN OEL : India. Permissible levels of certain chemical substances in work environment.  
 ID OEL : Indonesia. Occupational Exposure Limits  
 JPJSOH OEL : Japan. The Japan Society for Occupational Health. Recommendation of Occupational Exposure Limits  
 JPISHL OEL : Japan. Administrative Control Levels  
 KOR OEL : Korea. Occupational Exposure Limits  
 MY OEL : Malaysia. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health)  
 NZ OEL : New Zealand. Workplace Exposure Standards for Atmospheric Contaminants  
 PH OEL : Philippines. Threshold Limit Values For Airborne Contaminants  
 SG OEL : Singapore. Workplace Safety and Health Act - First Schedule Permissible Exposure Limits of Toxic Substances  
 TW OEL : Taiwan. Standards on the Concentration Levels of Hazardous Substances in the Air at Workplace  
 TH OEL : Thailand. Occupational Exposure Limits  
 VN OEL : Vietnam. Occupational Exposure Limits