

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Initial preparation date: : 01.15.2015**Starch Indicator Solution, 0.5% w/v****SECTION 1: Identification of the substance/mixture and of the supplier****Product name:** Starch Indicator Solution, 0.5% w/v**Manufacturer/Supplier Article number:** AR-1076-60**Recommended uses of the product and restrictions on use:** Laboratory**Manufacturer Details:**

Aqua Analytics
245 Matheson Blvd East, Units 1 & 2 Mississauga, Ontario Canada L4Z 3C9
(888) 712-4000

Emergency telephone number:

Emergency Phone No. (613) 996-6666

SECTION 2: Hazards identification**Classification of the substance or mixture:****Corrosive**

Serious eye damage, category 1

**Irritant**

Skin irritation, category 2

Chronic aquatic hazard, category 3

Signal word: Danger**Hazard statements:**

Causes serious eye damage.
Causes skin irritation.
Harmful to aquatic life with long lasting effects.

Precautionary statements:

Wash skin thoroughly after handling.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
Specific treatment (see supplemental first aid instructions on this label).
Take off contaminated clothing and wash before reuse.
IF ON SKIN: Wash with soap and water.
If skin irritation occurs: Get medical advice/attention.
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 or doctor/physician.
Dispose of contents and container as instructed in Section 13.

Other Non-GHS Classification: None**SECTION 3: Composition/information on ingredients****Ingredients:**

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Ingredients:		
CAS 69-72-7	Salicylic Acid	0.1 %
CAS 9005-84-9	Starch, soluble	0.5 %
CAS 7646-85-7	Zinc Chloride	0.4 %
CAS 64-19-7	Acetic Acid	0.36 %
CAS 7732-18-5	Water	96.07 %
CAS 1310-73-2	Sodium Hydroxide	0.62 %
CAS 7647-01-0	Hydrochloric acid	1.95 %
Percentages are by weight		

SECTION 4: First aid measures**Description of first aid measures****After inhalation:**

Loosen clothing as necessary and position individual in a comfortable position. Give artificial respiration if necessary. Move exposed individual to fresh air. Seek medical advice if discomfort or irritation persists.

After skin contact:

Seek medical advice if discomfort or irritation persists. Wash affected area with soap and water. Rinse/flush exposed skin gently using water for 15-20 minutes. Seek immediate medical attention.

After eye contact:

Protect unexposed eye. Rinse or flush exposed eye gently using water for 15-20 minutes. Remove contact lenses while rinsing. Immediately get medical assistance.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Get medical assistance. Have exposed individual drink sips of water. Seek medical attention if irritation, discomfort or vomiting persists.

Most important symptoms and effects, both acute and delayed:

Irritation. Nausea. Headache. Shortness of breath.

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention provide SDS document to physician. Physician should treat symptomatically. DO NOT use mouth-to-mouth resuscitation without a barrier device to prevent responder from receiving burns. Follow with gastric lavage with activated charcoal. If available, administer ferric hexacyanoferrate as a gastrointestinal trapping agent. Persons with pre - existing skin disorders, eye problems, or impaired kidney function may be more susceptible to the effects of this substance.

SECTION 5: Firefighting measures**Extinguishing media****Suitable extinguishing agents:**

Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam. In laboratory setting, follow laboratory fire suppression procedures. Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition.

Unsuitable extinguishing agents:

Water or foam may cause frothing.

Special hazards arising from the substance or mixture:

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Use water spray to cool unopened containers. Combustion products may include carbon oxides or other toxic vapors.

Advice for firefighters:**Protective equipment:**

Wear protective eyewear, gloves, and clothing. Refer to Section 8. Wear special protective clothing and positive pressure self-contained breathing apparatus. Wear protective eyewear, gloves, and clothing. Use NIOSH-approved respiratory protection/breathing apparatus. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls.

Additional information (precautions):

Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Remove all sources of ignition. Dusts at sufficient concentrations can form explosive mixtures with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Avoid contact with skin, eyes and clothing. Dust deposits should not be allowed to accumulate on surfaces. Use spark-proof tools and explosion-proof equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Move product containers away from fire or keep cool with water spray as a protective measure, where feasible. Use spark-proof tools and explosion-proof equipment. Do not inhale gases, fumes, dust, mist, vapor, and aerosols.

SECTION 6: Accidental release measures**Personal precautions, protective equipment and emergency procedures:**

Ensure adequate ventilation. Protect from heat. Stop the spill, if possible. When necessary use NIOSH approved breathing equipment. Wear protective equipment. Transfer to a disposal or recovery container. Use respiratory protective device against the effects of fumes/dust/aerosol. Contain spilled material by diking or using inert absorbent.

Environmental precautions:

Should not be released into environment. Prevent from reaching drains, sewer, or waterway. Collect contaminated soil for characterization per Section 13.

Methods and material for containment and cleaning up:

Absorb with suitable material. Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Wear protective eyewear, gloves, and clothing. Refer to Section 8. Always obey local regulations. If in a laboratory setting, follow Chemical Hygiene Plan procedures. Place into properly labeled containers for recovery or disposal. If necessary, use trained response staff/contractor. Absorb with suitable absorbent material such as sand or earth and containerize for disposal.

Reference to other sections: None

SECTION 7: Handling and storage**Precautions for safe handling:**

Avoid contact with skin, eyes and clothing. Absorb spillage to prevent material damage. Follow good hygiene procedures when handling chemical materials. Do not eat, drink, smoke, or use personal products when handling chemical substances. Use only in well ventilated areas. Wash hands after handling.

Conditions for safe storage, including any incompatibilities:

Provide ventilation for containers. Store away from foodstuffs. Store in cool, dry conditions in well sealed containers. Store with like hazards. Protect from freezing and physical damage. Provide ventilation for containers. Keep away from food and beverages. Protect from freezing and physical damage. Store away from incompatible materials.

SECTION 8: Exposure controls/personal protection

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64-19-7, Acetic Acid, ACGIH TLV: 25 mg/m³.
 64-19-7, Acetic Acid, OSHA PEL: 25 mg/m³.
 7647-01-0, Hydrochloric acid, OSHA PEL Ceiling value: 5 ppm (7 mg/m³).
 7647-01-0, Hydrochloric acid, NIOSH IDLH: 50 ppm.
 1310-73-2, Sodium Hydroxide, OSHA TWA 2.0 mg/m³.
 1310-73-2, Sodium Hydroxide, ACGIH C 2.0 mg/m³.
 1310-73-2, Sodium Hydroxide, NIOSH C 2.0 mg/m³.
 7646-85-7, Zinc Chloride, OSHA PEL: TWA value 1 mg/m³.
 7646-85-7, Zinc Chloride, ACGIH TLV: 1 mg/m³.

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or dusts (total/respirable) below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above. Normal ventilation is adequate. Ensure eyewash and safety shower are available.

Respiratory protection:

Not required under normal conditions of use. Use suitable respiratory protective device when high concentrations are present. Normal ventilation is adequate. Where risk assessment shows air-purifying respirators are refer to Section 6.

Protection of skin:

Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Wear protective clothing.

Eye protection:

Safety glasses or goggles are appropriate eye protection.

General hygienic measures:

Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin. Wash hands and exposed skin with soap and plenty of water. Perform routine housekeeping. Before re-wearing, wash contaminated clothing.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Translucent liquid	Explosion limit lower: Explosion limit upper:	Not Determined Not Determined
Odor:	Not Determined	Vapor pressure at 20°C:	Not Determined
Odor threshold:	Not Determined	Vapor density:	Not Determined
pH-value:	Not Determined	Relative density:	Not Determined
Melting/Freezing point:	Not Determined	Solubilities:	Infinite solubility in water.
Boiling point/Boiling range:	Not Determined	Partition coefficient (n-octanol/water):	Not Determined
Flash point (closed cup):	Not Determined	Auto/Self-ignition temperature:	Not Determined
Evaporation rate:	Not Determined	Decomposition temperature:	Not Determined
Flammability (solid, gaseous):	Not Determined	Viscosity:	a. Kinematic: Not Determined b. Dynamic: Not Determined
Density at 20°C:	Not Determined		
Specific Gravity:	2.04		

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Does not react under normal conditions of use and storage.

Chemical stability:

Stable under normal conditions of use and storage.

Possible hazardous reactions:

None under normal conditions of use and storage.

Conditions to avoid:

None known.

Incompatible materials:

Strong oxidizing agents.

Hazardous decomposition products:

None known.

SECTION 11: Toxicological information**Acute Toxicity:****Oral:**

LD50 - Rat - 3310 mg/kg Acetic Acid.

LD50 - Rat - 891 mg/kg Salicylic Acid.

LD50 - Rat - 140 mg/kg Sodium Hydroxide.

Dermal:

LC50 - Rat - 5620 ppm/1 h Acetic Acid.

LD50 - Rabbit - 1,350 mg/kg Sodium Hydroxide.

LD50 - Rat - 350 mg/kg Zinc Chloride.

Inhalation:

LC50 - Rat - 3,124 mg/m³ 1hr Hydrochloric acid.

LCLo - Rat - 1960 mg/m³ 10M Zinc Chloride.

Chronic Toxicity: No additional information.

Skin corrosion/irritation:

Causes burns. Hydrochloric acid.

Causes severe burns. Sodium Hydroxide.

Causes skin damage. Zinc Chloride.

Serious eye damage/irritation:

Corrosive effect on the eyes. Hydrochloric acid.

Causes serious eye damage. Salicylic Acid.

Corrosive effect on the eyes. Sodium Hydroxide.

Respiratory or skin sensitization: No additional information.

Carcinogenicity: No additional information.

Germ cell mutagenicity: No additional information.

Reproductive Toxicity: No additional information.

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No additional information.

SECTION 12: Ecological information**Ecotoxicity:**

Hydrochloric Acid, Aquatic invertebrates, LC50; Species: Shrimp; Concentration: 100 to 330 ppm for 48 hr (salt water).

Sodium Hydroxide, Fish, LC50 - Gambusia affinis (Mosquito fish) - 125 mg/l - 96 h.

Zinc Chloride, Aquatic invertebrates, EC50 - Daphnia magna - 3.1 mg/L - 48 h.

Zinc Chloride, Fish, LC50 - Pimephales promelas - 2.5 mg/L 96hr.

Persistence and degradability: No additional information.**Bioaccumulative potential:** No additional information.**Mobility in soil:** No additional information.**Other adverse effects:** No additional information.**SECTION 13: Disposal considerations****Waste disposal recommendations:**

It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11).

SECTION 14: Transport information**US DOT****UN Number:**

ADR, ADN, DOT, IMDG, IATA

Not Regulated

Limited Quantity Exception:

None

Bulk:**RQ (if applicable):** None**Proper shipping Name:** Not Regulated.**Hazard Class:** None**Packing Group:** Not Regulated.**Marine Pollutant (if applicable):** No**Comments:** None**Non Bulk:****RQ (if applicable):** None**Proper shipping Name:** Not Regulated.**Hazard Class:** None**Packing Group:** Not Regulated.**Marine Pollutant (if applicable):** No**Comments:** None**SECTION 15: Regulatory information****United States (USA)****SARA Section 311/312 (Specific toxic chemical listings):**

Acute

SARA Section 313 (Specific toxic chemical listings):

7646-85-7 Zinc Chloride.

7647-01-0 Hydrochloric acid.

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None of the ingredients are listed.

TSCA (Toxic Substances Control Act) :

7732-18-5 Water: listed.
7647-01-0 Hydrochloric acid: listed.
69-72-7 Salicylic acid:: listed.
1310-73-2 Sodium hydroxide: listed.
9005-84-9 Starch, soluble: not listed.
7646-85-7 Zinc Chloride: listed.
64-19-7 Acetic Acid: listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

64-19-7 Acetic Acid 5000.
7646-85-7 Zinc Chloride 1000.
7647-01-0 Hydrochloric acid 5000.

Proposition 65 (California):**Chemicals known to cause cancer:**

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

Canada**Canadian Domestic Substances List (DSL) :**

7732-18-5 Water: listed.
7647-01-0 Hydrochloric acid: listed.
69-72-7 Salicylic acid:: listed.
1310-73-2 Sodium Hydroxide: listed.
9005-84-9 Starch, soluble: listed.
7646-85-7 Zinc Chloride: listed.
64-19-7 Acetic Acid: listed.

SECTION 16: Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

NFPA: 3-0-0**HMIS:** 3-0-0

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IMDG	International Maritime Code for Dangerous Goods
PNEC	Predicted No-Effect Concentration (REACH)
CFR	Code of Federal Regulations (USA)
SARA	Superfund Amendments and Reauthorization Act (USA)
RCRA	Resource Conservation and Recovery Act (USA)
TSCA	Toxic Substances Control Act (USA)
NPRI	National Pollutant Release Inventory (Canada)
DOT	US Department of Transportation
IATA	International Air Transport Association
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service (division of the American Chemical Society)
HMIS	Hazardous Materials Identification System (USA)
WHMIS	Workplace Hazardous Materials Information System (Canada)
DNEL	Derived No-Effect Level (REACH)
NFPA	National Fire Protection Association (USA)
NPRI	National Pollutant Release Inventory (Canada)