

MATERIAL SAFETY DATA SHEET

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Version 2.9

Section 1 - Product and Company Information

Product Name BOUIN'S SOLUTION
Product Number HT10132
Brand SIGMA

Company Sigma-Aldrich
Address 3050 Spruce Street
SAINT LOUIS MO 63103 US

Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #		SARA 313
BOUIN'S SOLUTION	None		Yes
Ingredient Name	CAS #	Percent	SARA 313
WATER	7732-18-5	85.1	No
FORMALDEHYDE	50-00-0	9	Yes
ACETIC ACID	64-19-7	5	No
PICRIC ACID	88-89-1	0.9	Yes

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Harmful.

Explosive when dry. Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.

Contains formaldehyde. Lachrymator. Readily absorbed through skin. Target organ(s): Eyes. Kidneys. Blood. Liver. Heart. Teeth. Calif. Prop. 65 carcinogen.

HMIS RATING

HEALTH: 3*

FLAMMABILITY: 0

REACTIVITY: 1

NFPA RATING

HEALTH: 3

FLAMMABILITY: 0

REACTIVITY: 1

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

EXPLOSION HAZARDS

Dry material is explosive. If material is involved in a fire, evacuate the area and allow it to burn. If not involved in a fire, keep material wet.

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.
Specific Method(s) of Fire Fighting: Use water spray to cool fire-exposed containers.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Contain spill. If solids are present, add water to the solids without stirring. Recover spilled materials into a non-metallic water impervious container. Keep spilled material wet with water. Do not allow to dry! Use a spill response pad or pillow damp with water to absorb remaining spilled material and absorbent pads or pillows in accordance with governmental requirements.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves. Wear disposable coveralls and discard them after use.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material

pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). 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. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Liquid	
Property	Value	At Temperature or Pressure
Molecular Weight	N/A	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	

Optical Rotation N/A
Miscellaneous Data N/A
Solubility N/A

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: Readily absorbed through skin. Harmful if absorbed through skin.

Eye Contact: Causes eye irritation.

Inhalation: Harmful if inhaled. Vapor or mist is irritating to the mucous membranes and upper respiratory tract.

Ingestion: Harmful if swallowed.

SENSITIZATION

Skin: May cause allergic skin reaction.

TARGET ORGAN(S) OR SYSTEM(S)

Blood. Teeth. Eyes. Kidneys. Liver. Heart.

SIGNS AND SYMPTOMS OF EXPOSURE

Discoloration of the skin. Exposure can cause:

CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

OSHA CARCINOGEN LIST

Rating: Potential cancer hazard.

CHRONIC EXPOSURE - MUTAGEN

Result: Laboratory experiments have shown mutagenic effects.

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations. (DN)Requires special label: "Contains a substance which is regulated by Danish work environmental law due to the risk of carcinogenic properties."

Section 14 - Transport Information

DOT

Proper Shipping Name: None
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xn
Indication of Danger: Harmful.
R: 1-20/21/22-36/37/38-40-43
Risk Statements: Explosive when dry. Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.
S: 26-35-36/37
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. This material and its container must be disposed of in a safe way. Wear suitable protective clothing and gloves.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Harmful.
Risk Statements: Explosive when dry. Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.
Safety Statements: Keep locked up and out of the reach of children. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. This material and its container must be disposed of in a safe way. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Use only in well ventilated areas.
US Statements: Contains formaldehyde. Lachrymator. Readily absorbed through skin. Target organ(s): Eyes. Kidneys. Blood. Liver. Heart. Teeth. Calif. Prop. 65 carcinogen.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes
NOTES: This product is or contains a component that is subject to SARA313 reporting requirements.

UNITED STATES - STATE REGULATORY INFORMATION

CALIFORNIA PROP - 65

California Prop - 65: This product is or contains chemical(s) known to the state of California to cause cancer.

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: No
NDSL: No

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.