

## Section 1 Identification

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**INNOVATING SCIENCE**® by Aldon  
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221 Rochester Street  
 Avon, NY 14414-9409  
 (585) 226-6177

**CHEMTREC 24 Hour Emergency**  
**Phone Number (800) 424-9300**  
 For laboratory and industrial use only.  
 Not for drug, food or household use.

|                 |   |
|-----------------|---|
| <b>Product</b>  | <b>SIMULATED BLOOD, TYPE O-</b>           |
| <b>Synonyms</b> | Simulated Blood, Type O Negative / Victim |

## Section 2 Hazards identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

**Signal word:** None required  
**Pictograms:** No symbol required  
**Target organs:** None known

**GHS Classification:** None required  
**GHS Label information: Hazard statement:** None required  
**Precautionary statement:** None required

**Supplemental information:**

Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Not Known  
 Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

| Chemical Name | CAS #     | %    | EINECS    |
|---------------|-----------|------|-----------|
| Water         | 7732-18-5 | >99% | 231-791-2 |
| Food Coloring | Mixture   | 0.6% | Mixture   |

## Section 4 First aid measures

**INGESTION:** Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Use any media suitable for extinguishing supporting fire.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

## Section 6 Accidental release measures

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Store in a cool, well-ventilated area away from incompatible substances.

## Section 8 Exposure controls / personal protection

| Exposure Limits: | Chemical Name        | ACGIH (TLV)      | OSHA (PEL)       | NIOSH (REL)      |
|------------------|----------------------|------------------|------------------|------------------|
|                  | No components listed | None established | None established | None established |

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

## Section 9 Physical and chemical properties

|   |   |   |
|---|---|---|
| <b>Appearance:</b> Red liquid.<br><b>Odor:</b> No odor.<br><b>Odor threshold:</b> Data not available.<br><b>pH:</b> Data not available.<br><b>Melting / Freezing point:</b> Approximately 0°C (32°F) (water)<br><b>Boiling point:</b> Approximately 100°C (212°F) (water)<br><b>Flash point:</b> Data not available | <b>Evaporation rate ( Water = 1):</b> <1<br><b>Flammability (solid/gas):</b> Data not available.<br><b>Explosion limits: Lower / Upper:</b> Data not available<br><b>Vapor pressure (mm Hg):</b> 14 (water)<br><b>Vapor density (Air = 1):</b> 0.7 (water)<br><b>Relative density (Specific gravity):</b> Approximately 1.0 (water)<br><b>Solubility(ies):</b> Complete in water. | <b>Partition coefficient:</b> Data not available<br><b>Auto-ignition temperature:</b> Data not available<br><b>Decomposition temperature:</b> Data not available.<br><b>Viscosity:</b> Data not available.<br><b>Molecular formula:</b> Mixture<br><b>Molecular weight:</b> Mixture |
|---|---|---|

## Section 10 Stability and reactivity

**Chemical stability:** Stable **Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures to cause evaporation.

**Incompatible materials:** Strong oxidizers and reducing agents may destroy color.

**Hazardous decomposition products:** Carbon oxides, nitrogen oxides, sulfur oxides.

## Section 11 Toxicological information

**Acute toxicity:** Data not available  
**Skin corrosion/irritation:** Data not available  
**Serious eye damage/irritation:** Data not available  
**Respiratory or skin sensitization:** Data not available  
**Germ cell mutagenicity:** Data not available  
**Carcinogenicity:** Data not available  
 NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.  
 IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.  
 OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.  
 Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.  
**Reproductive toxicity:** Data not available  
**STOT-single exposure:** Data not available  
**STOT-repeated exposure:** Data not available  
**Aspiration hazard:** Data not available  
**Potential health effects:**  
 Inhalation: May be harmful if inhaled.  
 Ingestion: May be harmful if swallowed.  
 Skin: Repeated or prolonged contact with skin may cause irritation.  
 Eyes: Contact may cause irritation.  
**Signs and symptoms of exposure:** To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.  
**Additional information: RTECS #:** Data not available

## Section 12 Ecological information

**Toxicity to fish:** No data available  
**Toxicity to daphnia and other aquatic invertebrates:** No data available  
**Toxicity to algae:** No data available  
**Persistence and degradability:** No data available **Bioaccumulative potential:** No data available  
**Mobility in soil:** No data available **PBT and vPvB assessment:** No data available  
**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13 Disposal considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

## Section 14 Transport information

**UN/NA number:** Not applicable **Shipping name:** Not Regulated  
**Hazard class:** Not applicable **Packing group:** Not applicable **Reportable Quantity:** No **Marine pollutant:** No  
**Exceptions:** Not applicable **2020 ERG Guide #** Not applicable

## Section 15 Regulatory information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

| Component   | TSCA   | CERLCA (RQ) | RCRA code  | DSL    | NDSL       | CA Prop 65   |
|---|--------|-------------|------------|--------|------------|--|
| All components listed with the following agencies | Listed | Not listed  | Not listed | Listed | Not listed | This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity. |

## Section 16 Other information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

## Section 1 Identification

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|                 |   |
|-----------------|---|
| <b>Product</b>  | <b>SIMULATED BLOOD, TYPE B-</b>               |
| <b>Synonyms</b> | Simulated Blood, Type B Negative / Suspect #1 |

## Section 2 Hazards identification

**Signal word:** WARNING  
**Pictograms:** GHS07  
**Target organs:** Blood



**GHS Classification:**  
 Acute toxicity, oral (Category 5)  
 Skin irritation (Category 2)  
 Eye irritation (Category 2B)

**GHS Label information: Hazard statement(s):**  
 H303: May be harmful if swallowed.  
 H315: Causes skin irritation.  
 H320: Causes eye irritation.

**Precautionary statement(s):**

P264: Wash hands thoroughly after handling.  
 P280: Wear protective gloves/protective clothing/eye protection/face protection.  
 P302+P352: IF ON SKIN: Wash with plenty of water and soap.  
 P332+P313: If skin irritation occurs: Get medical attention.  
 P361+P364: Take off immediately all contaminated clothing and wash it before reuse.  
 P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337+P313: If eye irritation persists: Get medical attention.  
 P312: Call a POISON CENTER or doctor if you feel unwell.

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Not Known  
 Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

| Chemical Name                 | CAS #      | %     | EINECS    |
|-------------------------------|------------|-------|-----------|
| Water                         | 7732-18-5  | 89.4% | 231-791-2 |
| Calcium nitrate, tetrahydrate | 13477-34-4 | 10.0% | 233-332-1 |
| Food Coloring                 | Mixture    | 0.6%  | Mixture   |

## Section 4 First aid measures

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** CAUSES EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Use any media suitable for extinguishing supporting fire.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

## Section 6 Accidental release measures

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Store in a cool, well-ventilated area away from incompatible substances.

## Section 8 Exposure controls / personal protection

| Exposure Limits: | Chemical Name   | ACGIH (TLV)      | OSHA (PEL)       | NIOSH (REL)      |
|------------------|-----------------|------------------|------------------|------------------|
|                  | Calcium nitrate | None established | None established | None established |

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

## Section 9 Physical and chemical properties

|   |   |   |
|---|---|---|
| <b>Appearance:</b> Red liquid.<br><b>Odor:</b> No odor.<br><b>Odor threshold:</b> Data not available.<br><b>pH:</b> Data not available.<br><b>Melting / Freezing point:</b> Approximately 0°C (32°F) (water)<br><b>Boiling point:</b> Approximately 100°C (212°F) (water)<br><b>Flash point:</b> Data not available | <b>Evaporation rate ( Water = 1):</b> <1<br><b>Flammability (solid/gas):</b> Data not available.<br><b>Explosion limits: Lower / Upper:</b> Data not available<br><b>Vapor pressure (mm Hg):</b> 14 (water)<br><b>Vapor density (Air = 1):</b> 0.7 (water)<br><b>Relative density (Specific gravity):</b> Approximately 1.0 (water)<br><b>Solubility(ies):</b> Complete in water. | <b>Partition coefficient:</b> Data not available<br><b>Auto-ignition temperature:</b> Data not available<br><b>Decomposition temperature:</b> Data not available.<br><b>Viscosity:</b> Data not available.<br><b>Molecular formula:</b> Mixture<br><b>Molecular weight:</b> Mixture |
|---|---|---|

## Section 10 Stability and reactivity

**Chemical stability:** Stable **Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures to cause evaporation.

**Incompatible materials:** Ammonia, hydrozine and other reducing agents.

**Hazardous decomposition products:** Nitrogen oxides.

## Section 11 Toxicological information

**Acute toxicity: Calcium nitrate:** Oral-rat LD50: 3,900 mg/kg

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Data not available

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

Skin: Contact with skin may cause irritation.

Eyes: Causes eye irritation.

**Signs and symptoms of exposure:** To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

**Additional information: RTECS #: Calcium nitrate:** EW3000000

## Section 12 Ecological information

**Toxicity to fish:** No data available

**Toxicity to daphnia and other aquatic invertebrates:** No data available

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13 Disposal considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

## Section 14 Transport information

**UN/NA number:** Not applicable

**Shipping name:** Not Regulated

**Hazard class:** Not applicable

**Packing group:** Not applicable

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** Not applicable

**2020 ERG Guide #:** Not applicable

## Section 15 Regulatory information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

| Component               | TSCA   | CERLCA (RQ) | RCRA code  | DSL    | NDSL       | CA Prop 65   |
|-------------------------|--------|-------------|------------|--------|------------|--|
| Calcium nitrate (solid) | Listed | Not listed  | Not listed | Listed | Not listed | This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity. |

## Section 16 Other information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

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|                 |   |
|-----------------|---|
| <b>Product</b>  | <b>SIMULATED BLOOD, TYPE A+</b>               |
| <b>Synonyms</b> | Simulated Blood, Type A Positive / Suspect #2 |

## Section 2 Hazards identification

**Signal word:** WARNING  
**Pictograms:** GHS07  
**Target organs:** Blood

**GHS Classification:**

Acute toxicity, oral (Category 5)  
Skin irritation (Category 2)  
Eye irritation (Category 2A)

**GHS Label information: Hazard statement(s):**

H303: May be harmful if swallowed.  
H315: Causes skin irritation.  
H319: Causes serious eye irritation.

**Precautionary statement(s):**

P264: Wash hands thoroughly after handling.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P302+P352: IF ON SKIN: Wash with plenty of water and soap.  
P332+P313: If skin irritation occurs: Get medical attention.  
P362+P364: Take off contaminated clothing and wash it before reuse.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+P313: If eye irritation persists: Get medical attention.  
P312: Call a POISON CENTER or doctor if you feel unwell.

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Not Known  
Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

| Chemical Name                 | CAS #     | %     | EINECS                                 |
|-------------------------------|-----------|-------|--|
| Water                         | 7732-18-5 | 90.1% | 231-791-2                              |
| Aluminum nitrate, nonahydrate | 7784-27-2 | 9.3%  | 236-751-8 (anhydrous CAS # 13473-90-0) |
| Food Coloring                 | Mixture   | 0.6%  | Mixture                                |

## Section 4 First aid measures

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** CAUSES SERIOUS EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Use any media suitable for extinguishing supporting fire.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

## Section 6 Accidental release measures

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Store in a cool, well-ventilated area away from incompatible substances.

## Section 8 Exposure controls / personal protection

| Exposure Limits: | Chemical Name    | ACGIH (TLV)      | OSHA (PEL)       | NIOSH (REL)      |
|------------------|------------------|------------------|------------------|------------------|
|                  | Aluminum nitrate | None established | None established | None established |

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

## Section 9 Physical and chemical properties

|   |   |   |
|---|---|---|
| <b>Appearance:</b> Red liquid.<br><b>Odor:</b> No odor.<br><b>Odor threshold:</b> Data not available.<br><b>pH:</b> Data not available.<br><b>Melting / Freezing point:</b> Approximately 0°C (32°F) (water)<br><b>Boiling point:</b> Approximately 100°C (212°F) (water)<br><b>Flash point:</b> Data not available | <b>Evaporation rate ( Water = 1):</b> <1<br><b>Flammability (solid/gas):</b> Data not available.<br><b>Explosion limits: Lower / Upper:</b> Data not available<br><b>Vapor pressure (mm Hg):</b> 14 (water)<br><b>Vapor density (Air = 1):</b> 0.7 (water)<br><b>Relative density (Specific gravity):</b> Approximately 1.0 (water)<br><b>Solubility(ies):</b> Complete in water. | <b>Partition coefficient:</b> Data not available<br><b>Auto-ignition temperature:</b> Data not available<br><b>Decomposition temperature:</b> Data not available.<br><b>Viscosity:</b> Data not available.<br><b>Molecular formula:</b> Mixture<br><b>Molecular weight:</b> Mixture |
|---|---|---|

## Section 10 Stability and reactivity

**Chemical stability:** Stable **Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures to cause evaporation.

**Incompatible materials:** Reducing agents, organic materials.

**Hazardous decomposition products:** Nitrogen oxides.

## Section 11 Toxicological information

**Acute toxicity: Aluminum nitrate:** Oral-rat LD50: 3,671 mg/kg

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Data not available

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

Skin: Contact with skin may cause irritation.

Eyes: Causes serious eye irritation.

**Signs and symptoms of exposure:** To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

**Additional information: RTECS #: Aluminum nitrate:** BD1050000

## Section 12 Ecological information

**Toxicity to fish:** No data available

**Toxicity to daphnia and other aquatic invertebrates:** No data available

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13 Disposal considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

## Section 14 Transport information

**UN/NA number:** Not applicable

**Shipping name:** Not Regulated

**Hazard class:** Not applicable

**Packing group:** Not applicable

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** Not applicable

**2020 ERG Guide #** Not applicable

## Section 15 Regulatory information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

| Component                     | TSCA   | CERLCA (RQ) | RCRA code  | DSL    | NDSL       | CA Prop 65   |
|-------------------------------|--------|-------------|------------|--------|------------|--|
| Aluminum nitrate, nonahydrate | Listed | Not listed  | Not listed | Listed | Not listed | This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity. |

## Section 16 Other information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

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|                 |  |
|-----------------|--|
| <b>Product</b>  | <b>SIMULATED BLOOD, TYPE A+</b>                |
| <b>Synonyms</b> | Simulated Blood, Type A Positive / Crime Scene |

## Section 2 Hazards identification

**Signal word:** WARNING  
**Pictograms:** GHS07  
**Target organs:** Blood



**GHS Classification:**  
 Acute toxicity, oral (Category 5)  
 Skin irritation (Category 2)  
 Eye irritation (Category 2A)

**GHS Label information: Hazard statement(s):**  
 H303: May be harmful if swallowed.  
 H315: Causes skin irritation.  
 H319: Causes serious eye irritation.

**Precautionary statement(s):**

P264: Wash hands thoroughly after handling.  
 P280: Wear protective gloves/protective clothing/eye protection/face protection.  
 P302+P352: IF ON SKIN: Wash with plenty of water and soap.  
 P332+P313: If skin irritation occurs: Get medical attention.  
 P362+P364: Take off contaminated clothing and wash it before reuse.  
 P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337+P313: If eye irritation persists: Get medical attention.  
 P312: Call a POISON CENTER or doctor if you feel unwell.

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Not Known  
 Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

| Chemical Name                 | CAS #     | %     | EINECS                                 |
|-------------------------------|-----------|-------|--|
| Water                         | 7732-18-5 | 90.1% | 231-791-2                              |
| Aluminum nitrate, nonahydrate | 7784-27-2 | 9.3%  | 236-751-8 (anhydrous CAS # 13473-90-0) |
| Food Coloring                 | Mixture   | 0.6%  | Mixture                                |

## Section 4 First aid measures

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** CAUSES SERIOUS EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Use any media suitable for extinguishing supporting fire.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

## Section 6 Accidental release measures

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Store in a cool, well-ventilated area away from incompatible substances.

## Section 8 Exposure controls / personal protection

| Exposure Limits: | Chemical Name    | ACGIH (TLV)      | OSHA (PEL)       | NIOSH (REL)      |
|------------------|------------------|------------------|------------------|------------------|
|                  | Aluminum nitrate | None established | None established | None established |

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

## Section 9 Physical and chemical properties

|   |   |   |
|---|---|---|
| <b>Appearance:</b> Red liquid.<br><b>Odor:</b> No odor.<br><b>Odor threshold:</b> Data not available.<br><b>pH:</b> Data not available.<br><b>Melting / Freezing point:</b> Approximately 0°C (32°F) (water)<br><b>Boiling point:</b> Approximately 100°C (212°F) (water)<br><b>Flash point:</b> Data not available | <b>Evaporation rate ( Water = 1):</b> <1<br><b>Flammability (solid/gas):</b> Data not available.<br><b>Explosion limits: Lower / Upper:</b> Data not available<br><b>Vapor pressure (mm Hg):</b> 14 (water)<br><b>Vapor density (Air = 1):</b> 0.7 (water)<br><b>Relative density (Specific gravity):</b> Approximately 1.0 (water)<br><b>Solubility(ies):</b> Complete in water. | <b>Partition coefficient:</b> Data not available<br><b>Auto-ignition temperature:</b> Data not available<br><b>Decomposition temperature:</b> Data not available.<br><b>Viscosity:</b> Data not available.<br><b>Molecular formula:</b> Mixture<br><b>Molecular weight:</b> Mixture |
|---|---|---|

## Section 10 Stability and reactivity

**Chemical stability:** Stable **Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures to cause evaporation.

**Incompatible materials:** Reducing agents, organic materials.

**Hazardous decomposition products:** Nitrogen oxides.

## Section 11 Toxicological information

**Acute toxicity: Aluminum nitrate:** Oral-rat LD50: 3,671 mg/kg

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Data not available

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

Skin: Contact with skin may cause irritation.

Eyes: Causes serious eye irritation.

**Signs and symptoms of exposure:** To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

**Additional information: RTECS #: Aluminum nitrate:** BD1050000

## Section 12 Ecological information

**Toxicity to fish:** No data available

**Toxicity to daphnia and other aquatic invertebrates:** No data available

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13 Disposal considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

## Section 14 Transport information

**UN/NA number:** Not applicable

**Shipping name:** Not Regulated

**Hazard class:** Not applicable

**Packing group:** Not applicable

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** Not applicable

**2020 ERG Guide #:** Not applicable

## Section 15 Regulatory information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

| Component                     | TSCA   | CERLCA (RQ) | RCRA code  | DSL    | NDSL       | CA Prop 65   |
|-------------------------------|--------|-------------|------------|--------|------------|--|
| Aluminum nitrate, nonahydrate | Listed | Not listed  | Not listed | Listed | Not listed | This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity. |

## Section 16 Other information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.



## Section 1 Identification

Page E1 of E2

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 Not for drug, food or household use.

|                 |                                       |
|-----------------|---------------------------------------|
| <b>Product</b>  | <b>SIMULATED ANTI-SERUM ANTI-A</b>    |
| <b>Synonyms</b> | Simulated Anti-A Serum / Anti-A Serum |

## Section 2 Hazards identification

**Signal word:** WARNING  
**Pictograms:** No symbol required  
**Target organs:** Liver

**GHS Classification:**  
 Eye irritation (Category 2B)

**GHS Label information: Hazard statement:**  
 H320: Causes eye irritation.

**Precautionary statement:**

P264: Wash hands thoroughly after handling.  
 P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337+P313: If eye irritation persists: Get medical attention.

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Not Known  
 Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

| Chemical Name                 | CAS #     | %      | EINECS    |
|-------------------------------|-----------|--------|-----------|
| Water                         | 7732-18-5 | 91.99% | 231-791-2 |
| Sodium salicylate             | 54-21-7   | 8.00%  | 200-198-0 |
| FD&C Blue #1 (C.I. No. 42090) | 3844-45-9 | 0.001% | 223-339-8 |

## Section 4 First aid measures

**INGESTION:** Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** CAUSES EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Use extinguishing agent suitable for type of surrounding fire.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

## Section 6 Accidental release measures

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Store in a cool, well-ventilated area away from incompatible substances. Light sensitive.

## Section 8 Exposure controls / personal protection

| Exposure Limits: | Chemical Name     | ACGIH (TLV)     | OSHA (PEL)      | NIOSH (REL)     |
|------------------|-------------------|-----------------|-----------------|-----------------|
|                  | Sodium salicylate | Not established | Not established | Not established |

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

## Section 9 Physical and chemical properties

|   |   |   |
|---|---|---|
| <b>Appearance:</b> Liquid. Clear blue.<br><b>Odor:</b> No odor.<br><b>Odor threshold:</b> Data not available.<br><b>pH:</b> Data not available.<br><b>Melting / Freezing point:</b> Approximately 0°C (32°F) (water)<br><b>Boiling point:</b> Approximately 100°C (212°F) (water)<br><b>Flash point:</b> Data not available | <b>Evaporation rate ( Water = 1):</b> <1<br><b>Flammability (solid/gas):</b> Data not available.<br><b>Explosion limits: Lower / Upper:</b> Data not available<br><b>Vapor pressure (mm Hg):</b> 14 (water)<br><b>Vapor density (Air = 1):</b> 0.7 (water)<br><b>Relative density (Specific gravity):</b> Approximately 1.0 (water)<br><b>Solubility(ies):</b> Complete in water. | <b>Partition coefficient:</b> Data not available<br><b>Auto-ignition temperature:</b> Data not available<br><b>Decomposition temperature:</b> Data not available.<br><b>Viscosity:</b> Data not available.<br><b>Molecular formula:</b> Mixture<br><b>Molecular weight:</b> Mixture |
|---|---|---|

## Section 10 Stability and reactivity

**Chemical stability:** Stable **Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures which cause evaporation. Protect from light.

**Incompatible materials:** Strong oxidizers, strong acids.

**Hazardous decomposition products:** Carbon oxides, sodium oxides.

## Section 11 Toxicological information

**Acute toxicity:** Oral-rat LD50: 11,625 mg/kg (acute toxicity estimate)

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Eyes-rabbit - mild irritant

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: Not expected to be a health hazard.

Ingestion: May be harmful by ingestion.

Skin: Contact causes irritation.

Eyes: Contact may cause irritation.

**Signs and symptoms of exposure:** To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

**Additional information: RTECS #:** VO5075000 [Sodium salicylate]

## Section 12 Ecological information

**Toxicity to fish:** LC50 - Pimephales promelas (fathead minnow) - 1,370 mg/l - 96 h [Sodium salicylate]

**Toxicity to daphnia and other aquatic invertebrates:** No data available

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13 Disposal considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

## Section 14 Transport information

**UN/NA number:** Not applicable

**Shipping name:** Not Regulated

**Hazard class:** Not applicable

**Packing group:** Not applicable

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** Not applicable

**2020 ERG Guide #** Not applicable

## Section 15 Regulatory information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

| Component         | TSCA   | CERLCA (RQ) | RCRA code  | DSL    | NDSL       | CA Prop 65   |
|-------------------|--------|-------------|------------|--------|------------|--|
| Sodium salicylate | Listed | Not listed  | Not listed | Listed | Not listed | This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity. |

## Section 16 Other information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

## Section 1 Identification

Page E1 of E2

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 Not for drug, food or household use.

|                 |                                       |
|-----------------|---------------------------------------|
| <b>Product</b>  | <b>SIMULATED ANTI-SERUM ANTI-B</b>    |
| <b>Synonyms</b> | Simulated Anti-B Serum / Anti-B Serum |

## Section 2 Hazards identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

**Signal word:** None required

**Pictograms:** No symbol required

**Target organs:** None known

**GHS Classification:** None required

**GHS Label information: Hazard statement:** None required

**Precautionary statement:** None required

**Supplemental information:**

Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Not Known

Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

| Chemical Name                   | CAS #     | %       | EINECS    |
|---------------------------------|-----------|---------|-----------|
| Water                           | 7732-18-5 | 84.992% | 231-791-2 |
| Sodium sulfate                  | 7757-82-6 | 15.000% | 231-820-9 |
| FD&C Yellow #5 (C.I. No. 19140) | 1934-21-0 | 0.008%  | 217-699-5 |

## Section 4 First aid measures

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** MAY BE HARMFUL IF INHALED. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** MAY CAUSE TRANSIENT IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** MAY CAUSE TRANSIENT IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Use extinguishing agent suitable for type of surrounding fire.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

## Section 6 Accidental release measures

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.



## Section 1 Identification

Page E1 of E2

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 Not for drug, food or household use.

**Product** SIMULATED ANTI-SERUM ANTI-RH  
**Synonyms** Simulated Anti-Rh Serum / Anti-Rh Serum

## Section 2 Hazards identification

**Signal word:** WARNING  
**Pictograms:** No symbol required  
**Target organs:** Liver

**GHS Classification:**  
 Eye irritation (Category 2B)

**GHS Label information: Hazard statement:**  
 H320: Causes eye irritation.

**Precautionary statement:**

P264: Wash hands thoroughly after handling.  
 P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337+P313: If eye irritation persists: Get medical attention.

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Not Known  
 Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

| Chemical Name     | CAS #     | %      | EINECS    |
|-------------------|-----------|--------|-----------|
| Water             | 7732-18-5 | 92.00% | 231-791-2 |
| Sodium salicylate | 54-21-7   | 8.00%  | 200-198-0 |

## Section 4 First aid measures

**INGESTION:** Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** CAUSES EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Use extinguishing agent suitable for type of surrounding fire.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

## Section 6 Accidental release measures

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Store in a cool, well-ventilated area away from incompatible substances. Light sensitive. Protect from light.

## Section 8 Exposure controls / personal protection

| Exposure Limits: | Chemical Name     | ACGIH (TLV)     | OSHA (PEL)      | NIOSH (REL)     |
|------------------|-------------------|-----------------|-----------------|-----------------|
|                  | Sodium salicylate | Not established | Not established | Not established |

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

## Section 9 Physical and chemical properties

|   |   |   |
|---|---|---|
| <b>Appearance:</b> Clear liquid                                   | <b>Evaporation rate (Water = 1):</b> <1                               | <b>Partition coefficient:</b> Data not available      |
| <b>Odor:</b> No odor.   | <b>Flammability (solid/gas):</b> Data not available.                  | <b>Auto-ignition temperature:</b> Data not available  |
| <b>Odor threshold:</b> Data not available.                        | <b>Explosion limits: Lower / Upper:</b> Data not available            | <b>Decomposition temperature:</b> Data not available. |
| <b>pH:</b> Data not available.                                    | <b>Vapor pressure (mm Hg):</b> 14 (water)                             | <b>Viscosity:</b> Data not available.                 |
| <b>Melting / Freezing point:</b> Approximately 0°C (32°F) (water) | <b>Vapor density (Air = 1):</b> 0.7 (water)                           | <b>Molecular formula:</b> Mixture                     |
| <b>Boiling point:</b> Approximately 100°C (212°F) (water)         | <b>Relative density (Specific gravity):</b> Approximately 1.0 (water) | <b>Molecular weight:</b> Mixture                      |
| <b>Flash point:</b> Data not available                            | <b>Solubility(ies):</b> Complete in water.                            |   |

## Section 10 Stability and reactivity

**Chemical stability:** Stable **Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures which cause evaporation. Light sensitive.

**Incompatible materials:** Strong oxidizers, strong acids.

**Hazardous decomposition products:** Carbon oxides, sodium oxides.

## Section 11 Toxicological information

**Acute toxicity: Acute toxicity estimate:** Oral-rat LD50: 11,625 mg/kg

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Eyes-rabbit - Irritant.

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion: Harmful if swallowed.

Skin: Prolonged contact may cause irritation and/or defatting of skin.

Eyes: Causes serious eye irritation.

**Signs and symptoms of exposure:** To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

**Additional information: RTECS #:** VO5075000 [Sodium salicylate]

## Section 12 Ecological information

**Toxicity to fish:** LC50 - Pimephales promelas (fathead minnow) - 1,370 mg/l - 96 h [Sodium salicylate]

**Toxicity to daphnia and other aquatic invertebrates:** No data available

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13 Disposal considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

## Section 14 Transport information

**UN/NA number:** Not applicable

**Shipping name:** Not Regulated

**Hazard class:** Not applicable

**Packing group:** Not applicable

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** Not applicable

**2020 ERG Guide #** Not applicable

## Section 15 Regulatory information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

| Component         | TSCA   | CERLCA (RQ) | RCRA code  | DSL    | NDSL       | CA Prop 65   |
|-------------------|--------|-------------|------------|--------|------------|--|
| Sodium salicylate | Listed | Not listed  | Not listed | Listed | Not listed | This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity. |

## Section 16 Other information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

## Section 1 Identification

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|                |   |
|----------------|---|
| <b>Product</b> | <b>0.5% PHENOLPHTHALEIN IN ISOPROPYL ALCOHOL SOLUTION</b> |
|----------------|---|

|                 |  |
|-----------------|--|
| <b>Synonyms</b> | 0.5% Phenolphthalein in IPA / Blood Detection Reagent #1 |
|-----------------|--|

## Section 2 Hazards identification

**Signal word:** DANGER**Pictograms:** GHS02 / GHS07 / GHS08**Target organs:** Central nervous system, Liver, Kidneys.**GHS Classification:**

Flammable liquid (Category 3)

Eye irritation (Category 2)

STOT-SE (Category 2)

Mutagenicity (Category 2)

Carcinogen (Category 1B)

Reproductive toxicity (Category 2)

**GHS Label information: Hazard statement(s):**

H226: Flammable liquid and vapour.

H319: Causes serious eye irritation.

H336: May cause drowsiness or dizziness.

H341: Suspected of causing genetic defects.

H350: May cause cancer.

H361: Suspected of damaging fertility.

**Precautionary statement(s):**

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233: Keep container tightly closed.

P241: Use explosion-proof electrical/ventilating/lighting equipment.

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

P261: Avoid breathing mist/vapours/spray.

P264: Wash hands thoroughly after handling.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

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

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312: Call a POISON CENTER or doctor if you feel unwell.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313: If eye irritation persists: Get medical attention.

P370+P378: In case of fire: Use dry chemical, dry sand, alcohol foam, carbon dioxide to extinguish.

P403+P235: Store in a well-ventilated place. Keep cool.

P405: Store locked up.

P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Not Known

Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

| Chemical Name     | CAS #     | %     | EINECS    |
|-------------------|-----------|-------|-----------|
| Water             | 7732-18-5 | 55.7% | 231-791-2 |
| Isopropyl alcohol | 67-63-0   | 43.8% | 200-661-7 |
| Phenolphthalein   | 77-09-8   | 0.5%  | 201-004-7 |

## Section 4 First aid measures

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** MAY BE HARMFUL, IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** CAUSES EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Carbon dioxide, dry chemical, dry sand, alcohol foam.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors formed from this product are heavier than air and may travel along the ground to a distant source of ignition and flash back instantly. Flame may not be visible in daylight.

## Section 6 Accidental release measures

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

## Section 8 Exposure controls / personal protection

| Exposure Limits: | Chemical Name | ACGIH (TLV)                  | OSHA (PEL)                           | NIOSH (REL)                  |
|------------------|---------------|------------------------------|--------------------------------------|------------------------------|
|                  | Isopropanol   | TWA: 200 ppm / STEL: 400 ppm | TWA: 400 ppm / 980 mg/m <sup>3</sup> | TWA: 400 ppm / STEL: 500 ppm |

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

## Section 9 Physical and chemical properties

|   |   |   |
|---|---|---|
| <b>Appearance:</b> Clear, colorless liquid.                   | <b>Evaporation rate ( Butyl acetate = 1):</b> >1            | <b>Partition coefficient:</b> (n-octanol / water): Data not available   |
| <b>Odor:</b> Aromatic odor.                                   | <b>Flammability (solid/gas):</b> Data not available.        | <b>Auto-ignition temperature:</b> 399°C (750°F) ASTM-E659-78 [Pure IPA] |
| <b>Odor threshold:</b> Data not available.                    | <b>Explosion limits: Lower / Upper:</b> 2% / 12% [Pure IPA] | <b>Decomposition temperature:</b> Data not available.                   |
| <b>pH:</b> Data not available.                                | <b>Vapor pressure (mm Hg):</b> 33 mm @20°C [Pure IPA]       | <b>Viscosity:</b> Data not available.                                   |
| <b>Melting / Freezing point:</b> Approximately -50°C (-58°F)* | <b>Vapor density (Air = 1):</b> 2.1 [Pure IPA]              | <b>Molecular formula:</b> Mixture                                       |
| <b>Boiling point:</b> Approximately 85-100°C (185-212°F)*     | <b>Relative density (Specific gravity):</b> 0.8*            | <b>Molecular weight:</b> Mixture  |
| <b>Flash point:</b> 24.4-25°C (76-77°F) [43.8% IPA]           | <b>Solubility(ies):</b> Complete in water.                  | *[70% IPA]  |

## Section 10 Stability and reactivity

**Chemical stability:** Stable

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures, heat, sparks, open flame and other sources of ignition.

**Incompatible materials:** Strong oxidizing materials, caustics, aluminums, metals, nitroform, oleum, chlorinated compounds can react vigorously with this alcohol.

**Hazardous decomposition products:** Oxides of carbon.

## Section 11 Toxicological information

**Acute toxicity:** Oral-rat LD50: >2000 mg/kg ; Inhalation-rat LC50: >5000 ppm/1hr [Isopropanol]

**Skin corrosion/irritation:** Skin-rabbit - Slight irritant.

**Serious eye damage/irritation:** Eyes-rabbit - Severe irritant.

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

NTP: Reasonably anticipated to be a human carcinogen. [Phenolphthalein]

IARC classified: Group 2B: Possibly carcinogenic to humans. [Phenolphthalein]

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

CA Prop 65: ⚠️ WARNING! :This product can expose you to Phenolphthalein, which is known to the State of California to cause cancer.

**Reproductive toxicity:** Data not available

**STOT-single exposure:** The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Yes

**Potential health effects:**

Inhalation: Inhalation of high vapor concentrations may cause central nervous system depression resulting in dizziness, drowsiness, nausea, vomiting, inability to concentrate and irritation of the throat. Continued inhalation may result in unconsciousness and death.

Ingestion: Aspiration hazard. Liquid can directly enter the lungs (aspirated) when swallowed or vomited. Serious lung damage and possible fatal chemical pneumonia can develop if this occurs.

Skin: Prolonged or repeated contact may cause irritation and drying, cracking and defatting of the skin which can lead to dermatitis.

Eyes: Contact causes burning sensation, redness, swelling, and/or blurred vision.

**Signs and symptoms of exposure:** See Potential health effects above.

**Additional information:** RTECS #: NT8050000 [Isopropanol] / SM8380000 [Phenolphthalein]

## Section 12 Ecological information

**Toxicity to fish:** Pimephales promelas (Fish, fresh water) LC50: 9640 mg/l/96 hours [Isopropanol]

**Toxicity to daphnia and other aquatic invertebrates:** Daphnia magna (Crustacea), EC50 = >10,000 mg/l/24 hours [Isopropanol]

**Toxicity to algae:** Scenedesmus quadricauda (Algae), LOEC50 = 1,800 mg/l/7 days [Isopropanol]

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13 Disposal considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

## Section 14 Transport information

**UN/NA number:** UN1987

**Shipping name:** Alcohols, n.o.s., (Isopropanol)

**Hazard class:** 3

**Packing group:** III

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** Limited quantity equal to or less than 5 L

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## Section 15 Regulatory information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

| Component         | TSCA   | CERLCA (RQ) | RCRA code  | DSL    | NDSL       | CA Prop 65                                      |
|-------------------|--------|-------------|------------|--------|------------|---|
| Isopropyl alcohol | Listed | Not listed  | Not listed | Listed | Not listed | ⚠️ WARNING -Cancer -<br>www.P65Warnings.ca.gov. |
| Phenolphthalein   | Listed | Not listed  | Not listed | Listed | Not listed |   |

## Section 16 Other information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.



## Section 1 Identification

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|----------------|--|
| <b>Product</b> | <b>SODIUM HYDROXIDE, 0.1% SOLUTION</b> |
|----------------|--|

|                 |                                  |
|-----------------|----------------------------------|
| <b>Synonyms</b> | Sodium Hydroxide, Water Solution |
|-----------------|----------------------------------|

## Section 2 Hazards identification

**Signal word:** WARNING**Pictograms:** None required**Target organs:** Respiratory tract, Gastrointestinal tract, Eyes, Skin.**GHS Classification:**

Skin irritation (Category 3)

Eye irritation (Category 2B)

**GHS Label information: Hazard statement:**

H316: Causes mild skin irritation.

H320: Causes eye irritation.

**Precautionary statement:**

P264: Wash hands thoroughly after handling.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332+P313: If skin irritation occurs: Get medical advice/attention.

P337+P313: If eye irritation persists: Get medical advice/attention.

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Not Known

Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

| Chemical Name    | CAS #     | %     | EINECS    |
|------------------|-----------|-------|-----------|
| Water            | 7732-18-5 | 99.9% | 231-791-2 |
| Sodium hydroxide | 1310-73-2 | 0.1%  | 215-185-5 |

## Section 4 First aid measures

**INGESTION:** Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** CAUSES EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** CAUSES MILD IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Dry chemical, water spray, alcohol foam. Can react with carbon dioxide to form sodium carbonate.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume. Contact with metals can generate hydrogen gas.

## Section 6 Accidental release measures

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.



## Section 1 Identification

Page E1 of E2

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|                 |  |
|-----------------|--|
| <b>Product</b>  | ETHYL ALCOHOL, 70% DENATURED SOLUTION                          |
| <b>Synonyms</b> | Ethanol, 70% Aqueous Solution / Holding Solution / 70% Ethanol |

## Section 2 Hazards identification

**Signal word:** DANGER**Pictograms:** GHS02 / GHS07**Target organs:** Eyes, Central nervous system, Liver, Kidneys.**GHS Classification:**

Flam. liq. (Category 2)

Skin irrit. (Category 2)

Eye irrit. (Category 2B)

STOT-SE (Category 3)

**GHS Label information: Hazard statement:**

H225: Highly flammable liquid and vapour.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H336: May cause drowsiness or dizziness.

**Precautionary statement:**

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P240: Ground/bond container and receiving equipment.

P241: Use explosion-proof electrical/ventilating/lighting equipment.

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

P260: Do not breathe mist/vapours/spray.

P264: Wash hands thoroughly after handling.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312: Call a POISON CENTER or doctor if you feel unwell.

P332+P313: If skin irritation occurs: Get medical attention.

P337+P313: If eye irritation persists: Get medical attention.

P362+P364: Take off contaminated clothing and wash it before reuse.

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Not Known

Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

| Chemical Name     | CAS #     | %             | EINECS    |
|-------------------|-----------|---------------|-----------|
| Ethyl alcohol     | 64-17-5   | 59.5 - 60.06% | 200-578-6 |
| Water             | 7732-18-5 | 30.0%         | 231-791-2 |
| Isopropyl alcohol | 67-63-0   | 6.3%          | 200-661-7 |
| Methanol          | 67-56-1   | 2.8 - 2.9%    | 200-659-6 |

## Section 4 First aid measures

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** MAY BE HARMFUL, IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** CAUSES SERIOUS EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** CAUSES SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Carbon dioxide, dry chemical, dry sand, alcohol foam.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors formed from this product are heavier than air and may travel along the ground to a distant source of ignition and flash back instantly. Flame may not be visible in daylight.

## Section 6 Accidental release measures

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

## Section 8 Exposure controls / personal protection

| Exposure Limits: | Chemical Name | ACGIH (TLV)                                  | OSHA (PEL)                             | NIOSH (REL)                            |
|------------------|---------------|--|--|--|
|                  | Ethanol       | STEL: 1000 ppm / 1880 mg/m <sup>3</sup> (A3) | TWA: 1000 ppm / 1900 mg/m <sup>3</sup> | TWA: 1000 ppm / 1900 mg/m <sup>3</sup> |

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

## Section 9 Physical and chemical properties

|   |   |  |
|---|---|--|
| <b>Appearance:</b> Clear, colorless liquid.<br><b>Odor:</b> Mild characteristic odor.<br><b>Odor threshold:</b> Data not available.<br><b>pH:</b> Data not available.<br><b>Melting / Freezing point:</b> -114°C (-173°F)*<br><b>Boiling point:</b> 74-80°C (165.2-176°F)*<br><b>Flash point:</b> 21°C (70°F) TCC | <b>Evaporation rate ( Butyl acetate = 1):</b> Ca 2*<br><b>Flammability (solid/gas):</b> Data not available.<br><b>Explosion limits: Lower / Upper:</b> 3.3% / 19.0%<br><b>Vapor pressure (mm Hg):</b> Ca 50 @ 20°C*<br><b>Vapor density (Air = 1):</b> Ca 1.5*<br><b>Relative density (Specific gravity):</b> 0.7919-0.7955°C @ 60/60°F*<br><b>Solubility(ies):</b> Soluble in water. | <b>Partition coefficient:</b> (n-octanol / water): Low Pow: -.32*<br><b>Auto-ignition temperature:</b> 383°C (721°F)*<br><b>Decomposition temperature:</b> Data not available.<br><b>Viscosity:</b> Data not available.<br><b>Molecular formula:</b> Mixture<br><b>Molecular weight:</b> Mixture<br>*Ethanol |
|---|---|--|

## Section 10 Stability and reactivity

**Chemical stability:** Stable **Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures, heat, sparks, open flame and other sources of ignition.

**Incompatible materials:** Strong oxidizers, inorganic acids and halogens.

**Hazardous decomposition products:** Oxides of carbon.

## Section 11 Toxicological information

**Acute toxicity:** Oral-rat LD50: 7060 mg/kg ; Inhalation-rat LC50: 124.7 mg/l/4hours [Ethanol]

**Skin corrosion/irritation:** Skin-rabbit - Slight irritant.

**Serious eye damage/irritation:** Eyes-rabbit - Severe irritant.

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC classified: Group 3: Not classifiable as to its carcinogenicity to humans. [Isopropanol]

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

CA Prop 65: ⚠️ WARNING! : This product can expose you to chemicals including Methanol which is known to the State of California to cause cancer and birth defects or other reproductive harm.

**Reproductive toxicity:** Data not available

**STOT-single exposure:** The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: Inhalation may cause dizziness, drowsiness, nausea, vomiting, inability to concentrate and irritation of the throat.

Ingestion: Ingestion causes dizziness, drowsiness, decreased reaction, euphoria, nausea, vomiting, staggering gait and coma.

Skin: Contact with skin causes irritation defatting on prolonged contact.

Eyes: Contact with eyes may cause blindness.

**Signs and symptoms of exposure:** See Potential health effects above.

**Additional information:** RTECS #: KQ6300000 [Ethanol]

## Section 12 Ecological information

**Toxicity to fish:** Oncorhynchus mykiss (fish, fresh water), LC50 = 11,200 mg/l/24 hours [Ethanol]

**Toxicity to daphnia and other aquatic invertebrates:** Daphnia magna (Crustacia), EC50 = 10,800 mg/l/24 hours [Ethanol, 99.8% pure]

**Toxicity to algae:** Chlorella pyrenoidosa (Algae), EC50 = 9,310 mg/l/growth rate [Ethanol, absolute]

**Persistence and degradability:** No data available **Bioaccumulative potential:** No data available

**Mobility in soil:** No data available **PBT and vPvB assessment:** No data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13 Disposal considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

## Section 14 Transport information

**UN/NA number:** UN1170 **Shipping name:** Ethanol

**Hazard class:** 3

**Packing group:** II

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** Limited quantity equal to or less than 1 L

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## Section 15 Regulatory information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

| Component   | TSCA   | CERCLA (RQ) | RCRA code  | DSL    | NDSL       | CA Prop 65  |
|-------------|--------|-------------|------------|--------|------------|---|
| Ethanol     | Listed | Not listed  | D001       | Listed | Not listed | ⚠️ WARNING -Cancer and Reproductive Harm<br>- www.P65Warnings.ca.gov. |
| Methanol    | Listed | 5,000 lbs.  | U154       | Listed | Not listed |   |
| Isopropanol | Listed | Not listed  | Not listed | Listed | Not listed |   |

## Section 16 Other information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.