



Be Right™

SAFETY DATA SHEET

Issue Date 18-May-2016

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Version 2.1

1. IDENTIFICATION

Product identifier

Product Name Reagent 1 Ammonia/Monochloramine Indicator Solution

Other means of identification

Product Code(s) 2776353

Safety data sheet number M01711

UN/ID no UN1987

Recommended use of the chemical and restrictions on use

Recommended Use Determination of monochloramine and ammonia

Uses advised against No information available

Details of the supplier of the safety data sheet

Initial Supplier Identifier

Hach Sales & Service LP. 3020 Gore Road, London, Ontario N5V 4T7 Canada Tel: 1-800-665-7635

Manufacturer Address

Hach Company P.O. Box 389 Loveland, CO 80539 USA +1(970) 669-3050

Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300
CANUTEC 613-992-4624

2. HAZARD IDENTIFICATION

Classification

| | |
|--|-------------|
| Flammable liquids | Category 3 |
| Serious eye damage/eye irritation | Category 2A |
| Specific target organ toxicity (single exposure) | Category 3 |

Label elements

Signal word - Warning

Hazard statements

H226 - Flammable liquid and vapor
H319 - Causes serious eye irritation

H336 - May cause drowsiness or dizziness



Precautionary Statements

- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P337 + P313 - If eye irritation persists: Get medical advice/attention
- P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
- P271 - Use only outdoors or in a well-ventilated area
- 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
- P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
- P405 - Store locked up
- P501 - Dispose of contents/ container to an approved waste disposal plant
- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- P240 - Ground and bond container and receiving equipment
- P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment
- P242 - Use non-sparking tools
- P243 - Take action to prevent static discharges
- 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 [or shower]
- P403 + P235 - Store in a well-ventilated place. Keep cool

Unknown Acute Toxicity

- 0 % of the mixture consists of ingredient(s) of unknown toxicity.
- 0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
- 0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

Other Hazards Known

Causes mild skin irritation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

Mixture

| Chemical name | Synonyms | CAS No. | Percent Range | Units | HMIRA # |
|--------------------------------|-----------------------------|---------|---------------|-------|---------|
| Isopropyl alcohol | Isopropanol | 67-63-0 | 20 - 30% | g | - |
| Benzenemethanol, 2-hydroxy- | No information available | 90-01-7 | 3 - 7% | g | - |

| | | | | | |
|--------------------------|--------------------------|------------|-----|---|---|
| Sodium nitroferricyanide | No information available | 14402-89-2 | <1% | g | - |
|--------------------------|--------------------------|------------|-----|---|---|

4. FIRST AID MEASURES

Description of first aid measures

| | |
|---|--|
| General advice | Show this safety data sheet to the doctor in attendance. |
| Inhalation | Remove to fresh air. IF exposed or concerned: Get medical advice/attention. |
| Eye contact | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. |
| Ingestion | Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician. |
| Self-protection of the first aider | Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. |

Most important symptoms and effects, both acute and delayed

| | |
|-----------------|---|
| Symptoms | Burning sensation. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. |
|-----------------|---|

Indication of any immediate medical attention and special treatment needed

| | |
|---------------------------|------------------------|
| Note to physicians | Treat symptomatically. |
|---------------------------|------------------------|

5. FIRE-FIGHTING MEASURES

| | |
|---|---|
| Suitable Extinguishing Media | Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam. |
| Unsuitable Extinguishing Media | Caution: Use of water spray when fighting fire may be inefficient. |
| Specific hazards arising from the chemical | Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Hazardous combustion products | Carbon monoxide, Carbon dioxide. |
| Special protective equipment for fire-fighters | Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. |

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

| | |
|---------------------|--|
| WHMIS Notice | Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance. |
|---------------------|--|

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

Other Information Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protection equipment. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with particular national and local regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits

| Chemical name | Alberta OEL | British Columbia OEL | Manitoba OEL | New Brunswick OEL | New Foundland & Labrador OEL |
|-------------------|--------------|----------------------|--------------|-------------------|------------------------------|
| Isopropyl alcohol | TWA: 200 ppm | TWA: 200 ppm | TWA: 200 ppm | TWA: 400 ppm | TWA: 200 ppm |

| | | | | | |
|---------------------------------|--|---|--------------------------|---|--------------------------|
| 20 - 30% | TWA: 492 mg/m ³ STEL: 400 ppm STEL: 984 mg/m ³ | STEL: 400 ppm | STEL: 400 ppm | TWA: 983 mg/m ³ STEL: 500 ppm STEL: 1230 mg/m ³ | STEL: 400 ppm |
| Sodium nitroferrocyanide <1% | TWA: 1 mg/m ³ | TWA: 1 mg/m ³ STEL: 2 mg/m ³ | TWA: 1 mg/m ³ | TWA: 1 mg/m ³ | TWA: 1 mg/m ³ |

| Chemical name | Northwest Territories OEL | Nova Scotia OEL | Nunavut OEL | Ontario TWA | Prince Edward Island OEL |
|---------------------------------|---|-------------------------------|---|-------------------------------|-------------------------------|
| Isopropyl alcohol 20 - 30% | TWA: 200 ppm STEL: 400 ppm | STEL: 400 ppm TWA: 200 ppm | TWA: 200 ppm STEL: 400 ppm | TWA: 200 ppm STEL: 400 ppm | STEL: 400 ppm TWA: 200 ppm |
| Sodium nitroferrocyanide <1% | TWA: 1 mg/m ³ STEL: 3 mg/m ³ | TWA: 1 mg/m ³ | TWA: 1 mg/m ³ STEL: 3 mg/m ³ | TWA: 1 mg/m ³ | TWA: 1 mg/m ³ |

| Chemical name | Quebec OEL | Saskatchewan OEL | Yukon OEL |
|---------------------------------|---|---|--|
| Isopropyl alcohol 20 - 30% | TWA: 400 ppm TWA: 985 mg/m ³ STEL: 500 ppm STEL: 1230 mg/m ³ | TWA: 200 ppm STEL: 400 ppm | STEL: 500 ppm STEL: 1225 mg/m ³ TWA: 400 ppm TWA: 980 mg/m ³ SKN* |
| Sodium nitroferrocyanide <1% | TWA: 1.0 mg/m ³ Ceiling: 10 ppm Ceiling: 11 mg/m ³ SKN* | TWA: 1 mg/m ³ STEL: 3 mg/m ³ | STEL: 2 mg/m ³ STEL: 5 mg/m ³ TWA: 1 mg/m ³ TWA: 5 mg/m ³ SKN* |

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|---------------------------------|-------------------------------|---|---|
| Isopropyl alcohol 20 - 30% | STEL: 400 ppm TWA: 200 ppm | TWA: 400 ppm TWA: 980 mg/m ³ (vacated) TWA: 400 ppm (vacated) TWA: 980 mg/m ³ (vacated) STEL: 500 ppm (vacated) STEL: 1225 mg/m ³ | IDLH: 2000 ppm TWA: 400 ppm TWA: 980 mg/m ³ STEL: 500 ppm STEL: 1225 mg/m ³ |
| Sodium nitroferrocyanide <1% | TWA: 1 mg/m ³ | TWA: 5 mg/m ³ (vacated) TWA: 1 mg/m ³ (vacated) TWA: 5 mg/m ³ * | IDLH: 25 mg/m ³ CN TWA: 1 mg/m ³ Fe |

Legend See section 16 for terms and abbreviations

Appropriate engineering controls

Engineering Controls

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hand Protection

Wear suitable gloves. Impervious gloves.

Eye/face protection

Tight sealing safety goggles.

Skin and body protection

Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.
Antistatic boots.

General Hygiene Considerations

Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

Environmental exposure controls Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.

Thermal hazards None under normal processing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | | | |
|-----------------------|------------------|-----------------------|-------------------|
| Physical state | Liquid | Color | brown |
| Appearance | aqueous solution | Odor threshold | No data available |
| Odor | Alcoholic | | |

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|--|--|---|
| Molecular weight | No data available | |
| pH | 7.4 | |
| Melting point/freezing point | ~ -5 °C / 23 °F | Estimation based on theoretical calculation |
| Boiling point / boiling range | 82 °C / 180 °F | |
| Evaporation rate | 1.06 (water = 1) | Estimation based on theoretical calculation |
| Vapor pressure | 20.777 mm Hg / 2.77 kPa at 25 °C / 77 °F | Estimation based on theoretical calculation |
| Vapor density (air = 1) | 0.79 (air = 1) | |
| Specific gravity (water = 1 / air = 1) | 0.968 | |
| Partition Coefficient (n-octanol/water) | Not applicable | |
| Soil Organic Carbon-Water Partition Coefficient | Not applicable | |
| Autoignition temperature | No data available | |
| Decomposition temperature | No data available | |
| Dynamic viscosity | No data available | |
| Kinematic viscosity | No data available | |

Solubility(ies)

Water solubility

| <u>Water solubility classification</u> | <u>Water solubility</u> | <u>Water Solubility Temperature</u> |
|--|-------------------------|-------------------------------------|
| Soluble | > 1000 mg/L | 25 °C / 77 °F |

Solubility in other solvents

| <u>Chemical Name</u> | <u>Solubility classification</u> | <u>Solubility</u> | <u>Solubility Temperature</u> |
|----------------------|----------------------------------|-------------------|-------------------------------|
| Ethyl alcohol | Soluble | > 1000 mg/L | 25 °C / 77 °F |

Other Information

Metal Corrosivity

Steel Corrosion Rate No data available
Aluminum Corrosion Rate No data available

Volatile Organic Compounds (VOC) Content
See ingredients information below

| Chemical name | CAS No. | Volatile organic compounds (VOC) content | CAA (Clean Air Act) |
|-----------------------------|------------|--|---------------------|
| Isopropyl alcohol | 67-63-0 | 100% | X |
| Benzenemethanol, 2-hydroxy- | 90-01-7 | No data available | - |
| Sodium nitroferricyanide | 14402-89-2 | No data available | - |

Explosive properties

Upper explosion limit No data available
Lower explosion limit No data available

Flammable properties

Flash point 30 °C / 86 °F
Method CC (closed cup)

Flammability Limit in Air

Upper flammability limit: No data available
Lower flammability limit: No data available

Oxidizing properties

No data available.

Bulk density

Not applicable

Particle Size

No information available

Particle Size Distribution

No information available

10. STABILITY AND REACTIVITY

Reactivity

Not applicable.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None
Sensitivity to Static Discharge Yes.

Possibility of Hazardous Reactions

Possibility of Hazardous Reactions None under normal processing.

Hazardous polymerization

None under normal processing.

Conditions to avoid

Conditions to avoid Heat, flames and sparks.

Incompatible materials

Incompatible materials Strong oxidizing agents, strong acids, and strong bases.

Hazardous Decomposition Products

Heating to decomposition releases toxic fumes of carbon monoxide and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Product Information

| | |
|--|---|
| Inhalation | Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. May cause drowsiness or dizziness. |
| Eye contact | Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain. |
| Skin contact | Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and irritation. |
| Ingestion | Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. |
| Aggravated Medical Conditions | Skin disorders. Eye disorders. Preexisting eye disorders. Respiratory disorders. |
| Toxicologically synergistic products | None known. |
| Toxicokinetics, metabolism and distribution | See ingredients information below. |

| Chemical name | Toxicokinetics, metabolism and distribution |
|--|---|
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | Isopropanol is rapidly absorbed across the gastric mucosa and reaches a peak concentration approximately 30-120 minutes after ingestion. Isopropanol is primarily metabolized via alcohol dehydrogenase to acetone. |

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms May cause redness and tearing of the eyes. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Product Acute Toxicity Data

| | |
|--|-------------------|
| Oral Exposure Route | No data available |
| Dermal Exposure Route | No data available |
| Inhalation (Dust/Mist) Exposure Route | No data available |
| Inhalation (Vapor) Exposure Route | No data available |
| Inhalation (Gas) Exposure Route | No data available |

Unknown Acute Toxicity

0 % of the mixture consists of ingredient(s) of unknown toxicity.

- 0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
- 0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document

| | |
|-------------------------------|--------------------------|
| ATEmix (oral) | 8,758.00 mg/kg |
| ATEmix (dermal) | No information available |
| ATEmix (inhalation-dust/mist) | No information available |
| ATEmix (inhalation-vapor) | No information available |
| ATEmix (inhalation-gas) | No information available |

Ingredient Acute Toxicity Data

Oral Exposure Route

If available, see data below

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|-------------------------|---------------|---------------|---|---|
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | Rat LD ₅₀ | 4710 mg/kg | None reported | Behavioral General anesthetic | OECD (Organization for Economic Co-operation and Development) |
| Sodium nitroferricyanide (<1%) CAS#: 14402-89-2 | Rat LD ₅₀ | 99 mg/kg | None reported | None reported | LOLI |

Dermal Exposure Route

If available, see data below

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|----------------------------|---------------|---------------|-----------------------|--|
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | Rabbit LD ₅₀ | 12800 mg/kg | None reported | None reported | RTECS (Registry of Toxic Effects of Chemical Substances) |

Inhalation (Dust/Mist) Exposure Route

If available, see data below

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|-------------------------|---------------|---------------|--|--|
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | Rat LC ₅₀ | 72.6 mg/L | 4 hours | Behavioral General anesthetic Lungs, Thorax, or Respiration Other changes | RTECS (Registry of Toxic Effects of Chemical Substances) |

Inhalation (Vapor) Exposure Route

If available, see data below

Inhalation (Gas) Exposure Route

If available, see data below

Product Specific Target Organ Toxicity Single Exposure Data

Oral Exposure Route

No data available

Dermal Exposure Route

No data available

Inhalation (Dust/Mist) Exposure Route

No data available

Inhalation (Vapor) Exposure Route

No data available

Inhalation (Gas) Exposure Route

No data available

Ingredient Specific Target Organ Toxicity Single Exposure Data

Oral Exposure Route

If available, see data below

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|---------------------------|---------------|---------------|--|--|
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | Human TD _{Lo} | 223 mg/kg | None reported | Behavioral Hallucinations, Distorted perceptions Cardiac Pulse rate decrease with fall in BP Vascular BP lowering not characterized in autonomic section | RTECS (Registry of Toxic Effects of Chemical Substances) |

Dermal Exposure Route

If available, see data below

Inhalation (Dust/Mist) Exposure Route

If available, see data below

Inhalation (Vapor) Exposure Route

If available, see data below

| Chemical name | Endpoint | Reported | Exposure | Toxicological effects | Key literature references and |
|---------------|----------|----------|----------|-----------------------|-------------------------------|
|---------------|----------|----------|----------|-----------------------|-------------------------------|

| | type | dose | time | | sources for data |
|--|---------------------------|------------------|------------------|---|--|
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | Human TC _{Lo} | 35 mg/L | 4 hours | Cardiac Pulse rate decrease with fall in BP Lungs, Thorax, or Respiration Other changes | RTECS (Registry of Toxic Effects of Chemical Substances) |
| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | Human TC _{Lo} | 150 mg/L | 2 hours | Biochemical Enzyme inhibition, induction, or change in blood or tissue levels Other enzymes | RTECS (Registry of Toxic Effects of Chemical Substances) |

Inhalation (Gas) Exposure Route

If available, see data below

Aspiration toxicity

No data available

Product Skin Corrosion/Irritation Data

No data available.

Ingredient Skin Corrosion/Irritation Data

If available, see data below

| Chemical name | Test method | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|--|-------------------------|---------|------------------|------------------|--------------------|--|
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | Standard Draize Test | Rabbit | 500 mg | None reported | Mild skin irritant | RTECS (Registry of Toxic Effects of Chemical Substances) |

Product Serious Eye Damage/Eye Irritation Data

No data available.

Ingredient Eye Damage/Eye Irritation Data

If available, see data below

| Chemical name | Test method | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|--|-------------------------|---------|------------------|------------------|-------------------|--|
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | Standard Draize Test | Rabbit | 100 mg | None reported | Corrosive to eyes | RTECS (Registry of Toxic Effects of Chemical Substances) |

Sensitization Information

Product Sensitization Data

Skin Sensitization Exposure Route

No data available.

Respiratory Sensitization Exposure Route

No data available.

Ingredient Sensitization Data

Skin Sensitization Exposure Route

If available, see data below.

| Chemical name | Test method | Species | Results | Key literature references and sources for data |
|--|---------------|------------|---------------------------------------|--|
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | None reported | Guinea pig | Not confirmed to be a skin sensitizer | OECD (Organization for Economic Co-operation and Development) |

Respiratory Sensitization Exposure Route

If available, see data below.

Chronic Toxicity Information

Product Specific Target Organ Toxicity Repeat Dose Data

Oral Exposure Route

No data available.

Dermal Exposure Route No data available.
 Inhalation (Dust/Mist) Exposure Route No data available.
 Inhalation (Vapor) Exposure Route No data available.
 Inhalation (Gas) Exposure Route No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data

Oral Exposure Route If available, see data below
 Dermal Exposure Route If available, see data below
 Inhalation (Dust/Mist) Exposure Route If available, see data below
 Inhalation (Vapor) Exposure Route If available, see data below
 Inhalation (Gas) Exposure Route If available, see data below

Product Carcinogenicity Data

Oral Exposure Route No data available
 Dermal Exposure Route No data available
 Inhalation (Dust/Mist) Exposure Route No data available
 Inhalation (Vapor) Exposure Route No data available
 Inhalation (Gas) Exposure Route No data available

Ingredient Carcinogenicity Data

| Chemical name | CAS No. | ACGIH | IARC | NTP | OSHA |
|--------------------------------|------------|-------|---------|-----|------|
| Isopropyl alcohol | 67-63-0 | - | Group 3 | - | X |
| Benzenemethanol, 2-hydroxy- | 90-01-7 | - | - | - | - |
| Sodium nitroferricyanide | 14402-89-2 | - | - | - | - |

Legend

| | |
|---|--|
| ACGIH (American Conference of Governmental Industrial Hygienists) | Does not apply |
| IARC (International Agency for Research on Cancer) | Group 3 - Not classifiable as a human carcinogen |
| NTP (National Toxicology Program) | Does not apply |
| OSHA (Occupational Safety and Health Administration of the US Department of Labor) | X - Present |

Oral Exposure Route If available, see data below
 Dermal Exposure Route If available, see data below
 Inhalation (Dust/Mist) Exposure Route If available, see data below
 Inhalation (Vapor) Exposure Route If available, see data below
 Inhalation (Gas) Exposure Route If available, see data below

Product Germ Cell Mutagenicity *invitro* Data

No data available.

Ingredient Germ Cell Mutagenicity *invitro* Data

No data available

Product Germ Cell Mutagenicity *invivo* Data

Oral Exposure Route No data available
 Dermal Exposure Route No data available
 Inhalation (Dust/Mist) Exposure Route No data available
 Inhalation (Vapor) Exposure Route No data available
 Inhalation (Gas) Exposure Route No data available

Ingredient Germ Cell Mutagenicity *invivo* Data

Oral Exposure Route If available, see data below
 Dermal Exposure Route If available, see data below
 Inhalation (Dust/Mist) Exposure Route If available, see data below

| Chemical name | Test | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---------------|------|---------|---------------|---------------|---------|--|
|---------------|------|---------|---------------|---------------|---------|--|

| | | | | | | |
|--|-------------------------|-----|--------------|----------|--|---|
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | Cytogenetic analysis | Rat | 0.00103 mg/L | 16 weeks | Positive test result for mutagenicity | RTECS (Registry of Toxic Effects of Chemical Substances) |
|--|-------------------------|-----|--------------|----------|--|---|

Inhalation (Vapor) Exposure Route If available, see data below
Inhalation (Gas) Exposure Route If available, see data below

Product Reproductive Toxicity Data

Oral Exposure Route No data available
Dermal Exposure Route No data available
Inhalation (Dust/Mist) Exposure Route No data available
Inhalation (Vapor) Exposure Route No data available
Inhalation (Gas) Exposure Route No data available

Ingredient Reproductive Toxicity Data

Oral Exposure Route If available, see data below

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|-------------------------|---------------|---------------|--|--|
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | Rat TD _{Lo} | 32.4 mg/kg | None reported | Effects on Embryo or Fetus Fetal death | RTECS (Registry of Toxic Effects of Chemical Substances) |
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | Rat TD _{Lo} | 3500 mg/kg | None reported | Effects on Fertility Mating performance (e.g. # sperm positive females per # females mated; # copulations per # estrus cycles) | RTECS (Registry of Toxic Effects of Chemical Substances) |

Inhalation (Dust/Mist) Exposure Route If available, see data below

Inhalation (Vapor) Exposure Route If available, see data below

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|-------------------------|---------------|---------------|--|--|
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | Rat TC _{Lo} | 7000 mg/L | 19 days | Specific Developmental Abnormalities Musculoskeletal system | RTECS (Registry of Toxic Effects of Chemical Substances) |
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | Rat TC _{Lo} | 10000 mg/L | 19 days | Effects on Embryo or Fetus Fetal death Effects on Fertility Post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants) Pre-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea) | RTECS (Registry of Toxic Effects of Chemical Substances) |

Inhalation (Gas) Exposure Route If available, see data below

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product Ecological Data

Aquatic toxicity

Fish No data available
Crustacea No data available
Algae No data available

Ingredient Ecological Data**Aquatic toxicity****Fish**

If available, see ingredient data below

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|--|---------------|----------------------------|------------------|---------------|--|
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | 96 hours | <i>Pimephales promelas</i> | LC ₅₀ | 4200 mg/L | IUCLID (The International Uniform Chemical Information Database) |

Crustacea

If available, see ingredient data below

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|--|---------------|---------------|------------------|---------------|--|
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | 48 Hours | None reported | LC ₅₀ | 1400 mg/L | IUCLID (The International Uniform Chemical Information Database) |

Algae

If available, see ingredient data below

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|--|---------------|--------------------------------|------------------|---------------|--|
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | 72 Hours | <i>Scenedesmus subspicatus</i> | EC ₅₀ | > 1000 mg/L | IUCLID (The International Uniform Chemical Information Database) |

Other Information**Canadian Environmental Protection Act (CEPA) - Domestic Substances List (DSL):
Environmentally Hazardous Substances Categorizations**

| Chemical name | Category | Persistent | Bioaccumulation | Inherently Toxic to Aquatic Organisms |
|---|------------|------------|-----------------|---------------------------------------|
| Sodium nitroferricyanide (<1%) CAS#: 14402-89-2 | Inorganics | Yes | No | Yes |

Persistence and degradability**Product Biodegradability Data**

No data available.

Ingredient Biodegradability Data

| Chemical name | Test method | Biodegradation | Exposure time | Results |
|--|---------------|----------------|---------------|-----------------------|
| Isopropyl alcohol (20 - 30%) CAS#: 67-63-0 | None reported | 95% | 21 days | Readily biodegradable |

Bioaccumulation**Product Bioaccumulation Data**

No data available.

Partition Coefficient (n-octanol/water)

Not applicable

Ingredient Bioaccumulation Data**Mobility**

Soil Organic Carbon-Water Partition Coefficient Not applicable

Water solubility

| <u>Water solubility classification</u> | <u>Water solubility</u> | <u>Water Solubility Temperature</u> |
|--|-------------------------|-------------------------------------|
| Soluble | > 1000 mg/L | 25 °C / 77 °F |

Other adverse effects

No information available.

| <u>Chemical name</u> | <u>EU - Endocrine Disruptors Candidate List</u> | <u>EU - Endocrine Disruptors - Evaluated Substances</u> | <u>Endocrine disrupting potential</u> |
|--|---|---|---------------------------------------|
| Sodium nitroferricyanide (<1%) CAS#: 14402-89-2 | Group III Chemical | - | - |

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products

Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging

Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

14. TRANSPORT INFORMATION

Transport Canada

UN/ID no UN1987
 Proper shipping name Alcohol, N.O.S.
 DOT Technical Name (Isopropyl Alcohol Solution)
 Hazard Class 3
 Packing Group III
 Emergency Response Guide Number 127

TDG

UN/ID no UN1987
 Proper shipping name Alcohol, N.O.S.
 TDG Technical Name (Isopropyl Alcohol Solution)
 Hazard Class 3
 Packing Group III

IATA

UN/ID no UN1987
 Proper shipping name Alcohol, N.O.S.
 IATA Technical Name (Isopropyl Alcohol Solution)
 Hazard Class 3
 Packing Group III
 ERG Code 127

IMDG

UN/ID no UN1987
 Proper shipping name Alcohol, N.O.S.
 IMDG Technical Name (Isopropyl Alcohol Solution)
 Hazard Class 3
 Packing Group III

Note: No special precautions necessary.

Additional information

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies.

If the item is part of a reagent set or kit the classification would change to the following:

UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

Regulatory information

National Inventories

DSL/NDSL Complies

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

| | |
|----------------------|-----------------|
| TSCA | Complies |
| EINECS/ELINCS | Complies |
| ENCS | Does not comply |
| IECSC | Complies |
| KECL | Complies |
| PICCS | Complies |
| TCSI | Complies |
| AICS | Complies |
| NZIoC | Complies |

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TCSI - Taiwan Chemical Substances Inventory

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

Canada - CEPA - Mercury Containing Products

None

International Regulations

Ozone-depleting substances (ODS) Not applicable

Persistent Organic Pollutants Not applicable

Export Notification requirements Not applicable

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

None

NFPA and HMIS Classifications

| | | | | |
|-------------|---------------------------|-------------------------|------------------------|---|
| NFPA | Health hazards - 2 | Flammability - 3 | Instability - 0 | Physical and Chemical Properties - |
|-------------|---------------------------|-------------------------|------------------------|---|

| | | | | |
|------|--------------------|------------------|----------------------|---|
| HMIS | Health hazards - 1 | Flammability - 3 | Physical Hazards - 0 | Personal protection - X - See section 8 for more information |
|------|--------------------|------------------|----------------------|---|

Key or legend to abbreviations and acronyms used in the safety data sheet

NIOSH IDLH *Immediately Dangerous to Life or Health*
 ACGIH ACGIH (American Conference of Governmental Industrial Hygienists)
 NDF *no data*

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | | |
|------|---------------------------------|---------|---|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| MAC | Maximum Allowable Concentration | Ceiling | Ceiling Limit Value |
| X | Listed | Vacated | These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations. |
| SKN* | Skin designation | SKN+ | Skin sensitization |
| RSP+ | Respiratory sensitization | ** | Hazard Designation |
| C | Carcinogen | R | Reproductive toxicant |
| M | mutagen | | |

Prepared By Hach Product Compliance Department

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Revision Note
None

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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End of Safety Data Sheet