

Safety Data Sheet

Isopropyl Alcohol 99%

1. IDENTIFICATION

Product Identifier: Isopropyl Alcohol 99%
Canadian TDG: UN1219
Synonyms: Propan-2-ol; 2-Propanol; Isopropanol
Chemical Family: Alcohol
Recommended Use: Solvent
Restrictions on Use: None

Manufacturer / Supplier:

Genesis Chemicals
602 – 13th St SE
Medicine Hat, AB
T1A 1X3

Prepared by: The Environmental, Health and Safety Department of Genesis Chemicals Ltd

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2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquid – Category 2; Eye irritation – Category 2A; Specific target organ toxicity, single exposure (narcotic) – Category 3



Signal Word: Danger

Hazard Statement(s):

Highly flammable liquid and vapour
Causes serious eye irritation
May cause drowsiness or dizziness

Precautionary Statement(s):

General:

Keep out of reach of children.
Read label before use.

Prevention:

Use only outdoors or in a well-ventilated area.
Keep away from heat, sparks, open flames or hot surfaces. - No smoking.
Keep container tightly closed.
Keep cool.
Ground/bond container and receiving equipment.
Use explosion-proof electrical, ventilating, lighting and equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wash thoroughly after handling.

Response:

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing and wash it before re-use. Rinse skin with water/shower. If skin or rash occurs: Get medical advice or attention.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.
IF SWALLOWED: Immediately call a POISON CENTRE or doctor. Do NOT induce vomiting.
In case of fire: Stop leak if safe to do so. Use carbon dioxide, dry chemical powder, appropriate foam to extinguish.

Storage:

Store locked up.
Keep container tightly closed.
Store in a well-ventilated place.
Keep cool.
Store in a dry place.

Disposal:

Dispose of contents and container in accordance with local, regional, national and international regulations.

Other Hazards:

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS No. | Concentration % |
|-------------------|---------|-----------------|
| Isopropyl Alcohol | 67-63-0 | 100 |

Notes

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First-aid Measures

Inhalation

Move to fresh air. Keep at rest in a position comfortable for breathing. Call a Poison Centre or doctor if you feel unwell or are concerned.

Skin Contact

Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Immediately rinse with lukewarm, gently flowing water for 15-20 minutes. If skin irritation or a rash occurs, get medical advice/attention.

Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Remove contact lenses, if present and easy to do. If eye irritation persists, get medical advice/attention.

Ingestion

Immediately call a Poison Centre or doctor. Do not induce vomiting.

Most Important Symptoms and Effects, Acute and Delayed

If inhaled: at high concentrations symptoms may include headache, nausea, dizziness, drowsiness and confusion.

If on skin: may cause an allergic skin reaction in some people. Symptoms include redness, rash, itching and swelling.

If in eyes: symptoms include sore, red eyes, and tearing.

If swallowed: may be drawn into the lungs if swallowed or vomited, causing severe lung damage. Symptoms may include coughing, shortness of breath, difficult breathing and tightness in the chest.

Immediate Medical Attention and Special Treatment

Special Instructions

Not applicable.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder or appropriate foam. Use water to keep non-leaking, fire-exposed containers cool.

Unsuitable Extinguishing Media

Water is not effective for extinguishing a fire. It may not cool product below its flash point.

Specific Hazards Arising from the Chemical

Highly flammable liquid and vapour. Can ignite at room temperature. Releases vapour that can form explosive mixture with air. Can be ignited by static discharge. May travel a considerable distance to a source of ignition and flash back to a leak or open container. May accumulate in hazardous amounts in low-lying areas especially inside confined spaces, resulting in a fire and/or health hazard. Closed containers may rupture violently when heated releasing contents. In a fire, the following hazardous materials may be generated: very toxic carbon monoxide, carbon dioxide. As well, other toxic and irritating compounds, such as formaldehyde, methanol, acetic acid, hydrogen peroxide, methane and ethylene oxide may be formed, depending on fire conditions.

Special Protective Equipment and Precautions for Fire-fighters

Evacuate area. Approach fire from upwind to avoid hazardous vapours or gases.

Stop leak before attempting to put out the fire. Product could form an explosive mixture and reignite. Keep containers cool to avoid bursting.

Before entry, especially into confined areas, use an appropriate monitor to check for: toxic gases or vapours, flammable or explosive atmosphere.

Dike and recover contaminated water for appropriate disposal.

Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn. If there is potential for skin contact with concentrated cleaner: chemical protective clothing (e.g. chemical splash suit) and positive pressure SCBA may be necessary. See Skin Protection in Section 8 (Exposure Controls/Personal Protection) for advice on suitable chemical protective materials.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Concentrated product: evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Eliminate all ignition sources. Use grounded, explosion-proof equipment. Distant ignition and flashback are possible.

Increase ventilation to area or move leaking container to a well-ventilated and secure area. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Use the personal protective equipment recommended in Section 8 of this safety data sheet.

Review Section 7 (Handling) of this safety data sheet before proceeding with clean-up.

Before entry, especially into confined areas, check atmosphere with an appropriate monitor. Monitor area for flammable or explosive atmosphere.

Product (diluted as directed): use the personal protective equipment recommended in Section 8 of this safety data sheet. No other special precautions are necessary.

Environmental Precautions

Concentrated product: do not allow into any sewer, on the ground or into any waterway. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

Methods and Materials for Containment and Cleaning Up

Concentrated product: small spills or leaks: contain and soak up spill with absorbent that does not react with spilled product. Do NOT use combustible materials such as sawdust. Place used absorbent into suitable, covered, labelled containers for disposal.

Concentrated product: large spills or leaks: cover the spill surface with the appropriate type of foam to reduce the release of vapour. Dike spilled product to prevent runoff. Remove or recover liquid using pumps or vacuum equipment. Dike and recover contaminated water for appropriate disposal. Store recovered product in suitable containers that are: tightly-covered.

Product (diluted as directed): no special clean-up methods are necessary.

Other Information

Report spills to local health, safety and environmental authorities, as required.

7. HANDLING AND STORAGE

Precautions for Safe Handling

When handling diluted product: no special handling precautions are necessary.

When handling concentrated product: only use where there is adequate ventilation. Avoid generating vapours or mists. Keep containers tightly closed when not in use or empty. Electrically bond and ground equipment. Ground clips must contact bare metal. Eliminate heat and ignition sources such as sparks, open flames, hot surfaces and static discharge. Post "No Smoking" signs. Use non-sparking tools. Wear personal protective equipment to avoid direct contact with this chemical.

Do NOT smoke in work areas. Wash hands thoroughly after handling this material. Immediately remove contaminated clothing using the method that minimizes exposure. Keep contaminated clothing under water, in closed containers. Launder clothes before rewearing. Inform laundry personnel of product hazard(s). Do not take contaminated clothing home.

Conditions for Safe Storage

Concentrated product: store in an area that is: temperature-controlled, well-ventilated, out of direct sunlight and away

from heat and ignition sources, an approved, fire-resistant area, separate from incompatible materials (see Section 10: Stability and Reactivity). Store in a closed container.
 Protect from conditions listed in Conditions to Avoid in Section 10 (Stability and Reactivity). Keep amount in storage to a minimum. Avoid bulk storage indoors.
 Comply with all applicable health and safety regulations, fire and building codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

| Ingredients | ACGIH® TLV® | OSHA PEL | IDLH |
|-------------------|-----------------------------|---|----------|
| Isopropyl Alcohol | 400 ppm STEL 200 ppm TWA | 400 ppm TWA 980 mg/m ³ TWA 500 ppm STEL 1225 mg/m ³ STEL | 2000 ppm |

Consult local authorities for provincial or state exposure limits.

Appropriate Engineering Controls

General ventilation is usually adequate. Provide eyewash and safety shower if contact or splash hazard exists.
 When handling large quantities of concentrated product: use a local exhaust ventilation and enclosure, if necessary, to control amount in the air. Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas where this product is used and stored.

Individual Protection Measures

Eye/Face Protection

Do not get in eyes. Wear chemical safety goggles.

Skin Protection

Prevent all skin contact. Wear chemical protective clothing e.g. gloves, aprons, boots.

Suitable materials are: Barrier® (PE/PA/PE), Silver Shield/4H® (PE/EVAL/PE), Tychem® Responder, Tychem® TK.

The following materials should NOT be used: neoprene rubber, nitrile rubber, polyvinyl alcohol.

Respiratory Protection

Not normally required if product is used as directed.

Concentrated product: wear a NIOSH approved air-purifying respirator with an organic vapour cartridge.

For non-routine or emergency situations: wear a NIOSH approved air-purifying respirator with an organic vapour Cartridge, or, wear a NIOSH approved self-contained breathing apparatus (SCBA) or supplied air respirator.

Other Personal Protection Data: Ensure that eyewash stations and safety showers are proximal to the work-station location.

9. CHEMICAL AND PHYSICAL PROPERTIES

Basic Physical and Chemical Properties

| | |
|------------------------------|---|
| Appearance | Colourless liquid. |
| Odour | Alcohol |
| Odour Threshold | Not available |
| pH | Not available |
| Melting Point/Freezing Point | -89.0°C / -128.2°F (estimated) (freezing) |

| | |
|---|--------------------------|
| Initial Boiling Point/Range | 82-83°C / 180-181°F |
| Flash Point | 12°C / 54°F (ASTM D56) |
| Evaporation Rate | Not available |
| Flammability (solid, gas) | Not applicable (liquid). |
| Upper/Lower Flammability or Explosive Limit | 12% (upper); 2% (lower) |
| Vapour Pressure | 33 hPa at 20 °C |
| Vapour Density (air = 1) | 2.1 |
| Specific Gravity | 0.78 – 0.79 |
| Solubility | Soluble in water |
| Partition Coefficient, n-Octanol/Water (Log Kow) | Not available |
| Auto-ignition Temperature | Not available |
| Decomposition Temperature | Not available |
| Viscosity | Dynamic 2.4 mPa.s @ 20°C |

Other Information

Physical State: Liquid

10. STABILITY AND REACTIVITY

Reactivity

Not reactive. Not sensitive to mechanical impact.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

None expected under normal conditions of storage and use.

Conditions to Avoid

Open flames, sparks, static discharge, heat and other ignition sources.

Incompatible Materials

Aldehydes. Halogenated organics. Halogens. Strong acids. Strong oxidizers.

Hazardous Decomposition Products

During a fire, irritating/toxic gases, such as carbon monoxide, carbon dioxide and other toxic and irritating compounds, may be formed, depending on fire conditions.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

| Chemical Name | LC50 | LD50 (oral) | LD50 (dermal) |
|----------------------|--------------------|--|----------------------|
| Isopropyl Alcohol | Rat = 16970 ppm/4H | Mouse = 3600 mg/kg Rat = 5045 mg/kg | Rabbit = 12800 mg/kg |

Skin Corrosion/Irritation

May cause mild irritation based on information for closely related chemicals.

Serious Eye Damage/Irritation

Animal tests show serious eye irritation.

STOT (Specific Target Organ Toxicity) - Single Exposure**Inhalation**

May cause depression of the central nervous system.

Aspiration Hazard

May be drawn into the lungs (aspirated) if swallowed or vomited. Symptoms may include coughing, choking, shortness of breath, difficult or rapid breathing, and wheezing.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

Following skin contact: may cause dermatitis.

May cause harmful effects on the kidneys, harmful effects on the liver.

Respiratory and/or Skin Sensitization

Not a respiratory sensitizer.

Skin sensitizer. May cause an allergic reaction (skin sensitization) based on information for closely related chemicals.

Acute Test of Product:

Acute Oral LD50: 5045 mg/kg (rat)

Acute Dermal LD50: 12800 mg/kg (rabbit)

Acute Inhalation LC50: 16000ppm for 8 hrs

Carcinogenicity

| Chemical Name | IARC | ACGIH |
|-------------------|---------|-------|
| Isopropyl Alcohol | Group 3 | A4 |

Reproductive Toxicity/ Teratogenicity/ Embryotoxicity/ Mutagenicity

There is no human information available for Isopropanol. However, Isopropanol is considered teratogenic/embryotoxic based on animal information. One inhalation rat study has shown that 2-propanol is fetotoxic (caused reduced fetal weight gain) in the absence of maternal toxicity. Other studies have shown no effects or effects in the presence of maternal toxicity. Positive and negative mutagenic results have been obtained in mammalian cells in vitro and negative results in bacteria.

Interactive Effects

No information was located.

Additional Information: Isopropanol is a moderate to severe eye irritant and a mild skin irritant. Repeated or prolonged skin contact can cause drying and cracking of the skin (dermatitis). There are no reports of harmful effects developing following short-term exposure to Isopropanol. Exposure produced mild - moderate irritation of the nose and throat. It can probably cause central nervous system (CNS) depression, based on animal information and comparison to related alcohols. Symptoms may include headache, nausea, dizziness, vomiting and incoordination. High exposures may result in unconsciousness and death. Ingestion of large amounts can result in symptoms of CNS depression. Isopropanol can probably be inhaled into the lungs (aspirated) during ingestion or vomiting. Aspiration can result in severe, life-threatening lung damage. In rats and mice long-term exposure by inhalation or ingestion has produced decreased body weight, a reversible increase in motor activity, increased liver weight, and signs of central nervous system (CNS) depression. Decreased testes weight has been observed in mice, while increased testes weight has been observed in rats exposed to high concentrations. Kidney injury has been observed in rats (especially males) and mice exposed to high concentrations. These effects are believed to be species specific and unlikely to occur in humans. Observations in animals include: Lethargy. Isopropanol toxicity is synergistic with chloroform and carbon tetrachloride resulting in hepatotoxicity.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

| Ingredients | Ecotoxicity - Fish Species Data | Acute Crustaceans Toxicity: | Ecotoxicity - Freshwater Algae Data |
|-------------------|--|-----------------------------|--|
| Isopropyl Alcohol | 11130 mg/L LC50 (Pimephales promelas) 96 h static 9640 mg/L LC50 (Pimephales promelas) 96 h flow-through 1400000 µg/L LC50 (Lepomis macrochirus) 96 h | - | 1000 mg/L EC50 Desmodesmus subspicatus 72 h 1000 mg/L EC50 Desmodesmus subspicatus 96 h |

Other Information:

Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams or public waterways. Block off drains and ditches. Spill areas must be cleaned and restored to original condition or to the satisfaction of authorities. May be harmful to aquatic life. Biodegrades (slow). Rapid volatilization. Not expected to bioconcentrate.

13. DISPOSAL CONSIDERATIONS**Disposal Methods**

Recommended disposal methods are for the product, as sold. (Used material may contain other hazardous contaminants). The required hazard evaluation of the waste and compliance with the applicable hazardous waste laws are the responsibility of the user.

Burn in an approved incinerator according to federal, provincial/state, and local regulations.

Empty containers retain product residue. Follow label warnings even if container appears to be empty. The container for this product can present explosion or fire hazards, even when emptied. Do not cut, puncture, or weld on or near this container.

14. TRANSPORT INFORMATION**DOT (U.S.):**

DOT Shipping Name: ISOPROPANOL

DOT Hazardous Class 3

DOT UN Number: UN1219

DOT Packing Group: II

DOT Reportable Quantity (lbs): 5000 / 2270 kg

Note: No additional remark.

Marine Pollutant: No.

TDG (Canada):

TDG Shipping Name: ISOPROPANOL

Hazard Class: 3

UN Number: UN1219

Packing Group: II

Note: No additional remark.

Marine Pollutant: No.

Special Precautions for User

Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

15. REGULATORY INFORMATION

Canada**WHMIS Classification**

B2 FLAMMABLE LIQUIDS

D2B TOXIC MATERIALS

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by the Controlled Products Regulations.

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL/NDSL.

CEPA - National Pollutant Release Inventory (NPRI)

Not determined

USA**Toxic Substances Control Act (TSCA) Section 8(b)**

All ingredients are listed on the TSCA Inventory.

16. OTHER INFORMATION

| | |
|---------------------------------|---|
| Additional Information: | This product has been classified in accordance with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) and the SDS contains all the information required by the Hazardous Products Regulations (HPR). |
| Prepared by: | The Environmental, Health and Safety Department of Genesis Chemicals Ltd |
| Date of Latest Revision: | February 9, 2017 |
| Key to Abbreviations: | IARC = International Agency for Research on Cancer. Group 3 = Not classifiable as to its carcinogenicity to humans. ACGIH® = American Conference of Governmental Industrial Hygienists. A4 = Not classifiable as a human carcinogen. NTP = National Toxicology Program. OSHA = US Occupational Safety and Health Administration. ACGIH® = American Conference of Governmental Industrial Hygienists. TLV® = Threshold Limit Value. TWA = Time-Weighted Average. STEL = Short-term Exposure Limit. A4 = Not classifiable as a human carcinogen. OSHA = US Occupational Safety and Health Administration. PEL = Permissible Exposure Limits. IDLH = Immediately Dangerous to Life and Health. |
| Disclaimer: | NOTICE TO READER: |

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*****END OF SDS*****