

1. Product and company identification

Product identifier

Trade name: 634A58 - Isopropylalcohol

Relevant identified uses of the substance or mixture and uses advised against

General use: Solvent
For commercial user only.

Details of the supplier of the safety data sheet

Company name: Otto Bock Health Care
Street/POB-No.: 3820 W. Great Lakes Drive
Postal Code, city: Salt Lake City, UT 84120
USA
WWW: www.ottobockus.com
Telephone: +1 (801) 956-2400
Telefax: +1 (801) 956-2401
Dept. responsible for information:
Quality Department,
Telephone: +1 (801) 954-2304 (7 AM – 3 PM, Mountain Time),
Email: USRegulatory@ottobock.com

Additional information: Corporate headquarters:
Ottobock SE & Co. KGaA
Max-Näder-Straße 15
Duderstadt
Germany

Emergency phone number

CHEMTREC, Telephone: +1 (800) 424-9300
Transport:
CONSULTANK Lutz Harder GmbH (Contract QUALI003)
Telephone: +49 (0)178-4337434 (from USA: 01149 178 4337434)

2. Hazards identification

Emergency overview

Appearance: Physical state at 68 °F and 101.3 kPa: liquid
Color: Colorless, clear
Odor: Alcoholic
Classification: Flammable Liquid - Category 2; Eye Irritation - Category 2A;
Specific Target Organ Toxicity (Single Exposure) - Category 3;

Hazard symbols:



Signal word: **Danger**
Hazard statements: Highly flammable liquid and vapor.
Causes serious eye irritation.
May cause drowsiness or dizziness.

Precautionary statements:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Avoid breathing vapors.
 Wear protective gloves and eye protection.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 Store in a well-ventilated place. Keep container tightly closed.

Regulatory status

This material is considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200) and SIMDUT in Canada.

Hazards not otherwise classified

Potentially explosive mixtures may form if adequate ventilation is not provided.
 Inhaling can lead to irritations of the respiratory tract and mucous membrane.
 Higher doses may lead to a narcotic effect.
 Prolonged/repetitive skin contact may cause skin defatting or dermatitis.
 see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterization: CH₃-CH(OH)CH₃

CAS-Number: 67-63-0

RTECS-Number: NT8050000

4. First aid measures

General information: First aider: Pay attention to self-protection! IF exposed or concerned: Get medical advice/attention.
 If medical advice is needed, have product container or label at hand.

In case of inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention if problems persist.

Following skin contact: Take off immediately all contaminated clothing and wash it before reuse.
 Immediately clean with water and soap followed by thorough rinsing. In case of skin reactions, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently consult an ophthalmologist.

After swallowing: Rinse mouth immediately and drink plenty of water.
 Never give anything by mouth to an unconscious person.
 Do not induce vomiting. Immediately get medical attention.

Most important symptoms/effects, acute and delayed

May cause drowsiness or dizziness.
 Causes serious eye irritation.
 Higher doses may lead to a narcotic effect. After resorption: Headache, dizziness, inebriation, unconsciousness.

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:

53.6 °F (DIN 51755)

Auto-ignition temperature: No data available

Suitable extinguishing media:

Water spray jet, dry chemical powder, alcohol resistant foam, carbon dioxide.

Extinguishing media which must not be used for safety reasons:

Full water jet

Specific hazards arising from the chemical

Highly flammable liquid and vapor.

Air combined with vapors may form potentially explosive mixtures that are heavier than air. Vapor may travel great distances and cause fire and backflashes.

In case of fire may be liberated: Carbon monoxide and carbon dioxide.

Protective equipment and precautions for firefighters:

Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

Additional information:

Move undamaged containers from immediate hazard area if it can be done safely.

Heating will lead to pressure increase: Danger of bursting and explosion.

Suppress gases/vapours/mists with water spray jet.

In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. Keep containers cool with water spray.

Do not allow fire water to penetrate into surface or ground water.

Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

6. Accidental release measures

Personal precautions:

Avoid breathing vapors. Avoid contact with the substance. Eliminate all ignition sources if safe to do so. If possible, eliminate leakage. Provide adequate ventilation.

Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse. Keep unprotected people away.

Cordon off downwind area at risk and warn inhabitants.

Environmental precautions:

Do not allow to enter into ground-water, surface water or drains. Danger of explosion!

In case of release, notify competent authorities.

Methods for clean-up:

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).

Beware of reignition. Thoroughly clean surrounding area.

In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).

Additional information:

Use explosion-proof equipment and non-sparking tools/utensils.

Special danger of slipping by leaking/spilling product.

7. Handling and storage

Handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed. Avoid breathing vapors. Do not get in eyes, on skin, or on clothing. Wear appropriate protective equipment. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Take off immediately all contaminated clothing and wash it before reuse. Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation.

Work place should be equipped with a shower and an eye rinsing apparatus.

Precautions against fire and explosion:

Keep away from sources of ignition - No smoking.
 Take precautionary measures against static discharge.
 Air combined with vapors may form potentially explosive mixtures that are heavier than air.
 In partially filled containers explosive mixtures may form.
 Use only explosion-protected equipment/instruments. Do not weld.

Specific use(s) Solvent

Storage

Requirements for storerooms and containers:

Keep container tightly closed in a cool, well-ventilated place.
 Protect from heat and direct sunlight. Breakable containers may not exceed 5,5 liters.
 Maximum fill: 95 %
 Store containers in upright position.

Hints on joint storage:

Do not store together with combustible or self-igniting materials or any highly flammable solids.
 Keep away from food, drink and animal feedingstuffs.
 Avoid contact with strong oxidizing agents, strong acids, Alkalis and alkaline earth metals.

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

Type	Limit value
USA: ACGIH: STEL	984 mg/m ³ ; 400 ppm
USA: ACGIH: TWA	492 mg/m ³ ; 200 ppm
USA: NIOSH: STEL	1225 mg/m ³ ; 500 ppm
USA: NIOSH: TWA	980 mg/m ³ ; 400 ppm
USA: OSHA: TWA	980 mg/m ³ ; 400 ppm

Biological limit values:

Type	Limit value	Parameter	Material	Time of sampling
USA: ACGIH-BEI	40 mg/L	Acetone in urine	urine	end of shift at end of workweek

Engineering controls

Provide for good ventilation or exhaust system or work with completely self-contained equipment. Explosion protection required.

See also information in chapter 7, section storage.

Personal protection equipment (PPE)

- Eye/face protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.
- Skin protection: Flame retardant, antistatic and chemical resistant protective clothing.
Protective gloves according to OSHA Standard - 29 CFR: 1910.138.
Glove material:
Nitrile rubber, layer thickness: (≥ 0.35 mm), breakthrough time: 8 h
Butyl caoutchouc (butyl rubber), layer thickness: (≥ 0.5 mm), breakthrough time: 8 h
Polychloroprene, layer thickness: (≥ 0.5 mm), breakthrough time: 4 h
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.
Unsuitable glove material: PVC (polyvinyl chloride), NR (natural rubber, natural latex).
- Respiratory protection: In case of inadequate ventilation wear respiratory protection. Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.
- General hygiene considerations:
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Avoid breathing vapors. Do not get in eyes, on skin, or on clothing. Take off immediately all contaminated clothing and wash it before reuse.
Contaminated work clothing should not be allowed out of the workplace.
When using do not eat or drink.
Wash hands thoroughly after handling.
Work place should be equipped with a shower and an eye rinsing apparatus.

9. Physical and chemical properties

Information on basic physical and chemical properties

- Appearance: Physical state at 68 °F and 101.3 kPa: liquid
Color: Colorless, clear
- Odor: Alcoholic
- Odor threshold: No data available
- pH value: Neutral
- Melting point/freezing point: -128.2 °F
- Initial boiling point and boiling range: 179.6 °F (DIN 53171)
- Flash point/flash point range: 53.6 °F (DIN 51755)
- Evaporation rate: No data available
- Flammability: Highly flammable liquid and vapor.
- Explosion limits: LEL (Lower Explosion Limit): 2.00 Vol-%
UEL (Upper Explosive Limit): 12.00 Vol-%
- Vapor pressure: No data available
- Vapor density: No data available
- Density: at 68 °F: 0.785 g/mL
- Water solubility: at 68 °F: Completely miscible
- Partition coefficient: n-octanol/water: at 77 °F: 0.05 log P(o/w) (OECD 107)
Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.

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Auto-ignition temperature: No data available
 Thermal decomposition: No data available
 Explosive properties: Not explosive. Vapors may form explosive mixtures with air.
 Ignition temperature: 797 °F (DIN 51794)
 Refraction index: at 68 °F: 1.376 - 1.378
 Molecular weight: 60.11 g/mol
 Additional information: Relative vapor density at 68 °F (air=1): 2
 Evaporation rate: 11 (ether = 1, DIN 53170)
 Saturation concentration at 68 °F 106,000 mg/m³

10. Stability and reactivity

Reactivity: Highly flammable liquid and vapor.
 Vapors may form explosive mixtures with air.

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions
 Exothermic reactions with strong acid.
 Liquid evaporates quickly. Vapors are heavier than air and will travel at floor level. Vapors may form explosive mixtures with air. Beware of reignition.
 Heating will lead to pressure increase: Danger of bursting and explosion.

Conditions to avoid: Keep away from heat sources, sparks and open flames.
 Protect against direct sunlight.

Incompatible materials: Strong acid, strong oxidizing agents, pyrophoric solids.
 Reacts at room temperature with alkali, less so with alkaline earth metals (with formation of hydrogen), at higher temperatures a measurably stronger reaction occurs.

Hazardous decomposition products:
 No decomposition when used properly.

Thermal decomposition: No data available

11. Toxicological information

Toxicological tests

Acute toxicity: LD50 Rat, oral: 5840 mg/kg bw (OECD 401)
 LD50 Rabbit, dermal: 13900 mg/kg bw (OECD 402)
 LC50 Rat, inhalative: > 25 mg/L/6h (OECD 403)

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Toxicological effects:

Acute toxicity (oral): Based on available data, the classification criteria are not met.

Acute toxicity (dermal): Based on available data, the classification criteria are not met.

Acute toxicity (inhalative): Based on available data, the classification criteria are not met.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: Eye Irritation - Category 2A = Causes serious eye irritation.

Sensitisation to the respiratory tract: Based on available data, the classification criteria are not met.

Skin sensitisation: Based on available data, the classification criteria are not met.

Specific symptoms in animal studies, guinea pig: not sensitising (OECD 406).

Germ cell mutagenicity/Genotoxicity: Based on available data, the classification criteria are not met.

Gene-mutations mammalian cells (in-vitro, hamster): negative. (OECD 476)

Bacterial mutagenicity: (in-vitro, Ames test): negative. (OECD 471)

Micronucleus test: (in-vivo, Mouse): negative. (OECD 474)

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Based on available data, the classification criteria are not met.

Effects on or via lactation: Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure): Specific Target Organ Toxicity (Single Exposure) - Category 3 = May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure): Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.
In severe cases, pneumonia or a pulmonary edema may develop. Aspiration hazard: in case of swallowing or vomiting danger of penetration into the lungs.

Symptoms

In case of inhalation: Headache, dizziness, inebriation, unconsciousness.

In case of ingestion:

Nausea, vomiting, abdominal pain, gastrointestinal complaints, blood pressure drop.

After intake of large amounts: unconsciousness, coma, breathing paralysis (death).

If swallowed or in the event of vomiting, risk of entering the lungs. Absorption can lead to kidney and liver damage.

After contact with skin:

Prolonged/repetitive skin contact may cause skin defatting or dermatitis.

After eye contact: Upon direct contact with eyes may cause burning, tearing, redness.

12. Ecological information

Ecotoxicity

Aquatic toxicity: Toxic effect on fishes and plankton.

Algae toxicity:
EC50 Green algae: >100 mg/L/72h.

Bacterial toxicity:
EC50: >100 mg/L
EC5 Pseudomonas putida : 1,050 mg/L/16h.

Daphnia toxicity:
EC50 Daphnia magna (Big water flea): 9,714 mg/L/48h.

Fish toxicity:
LC50 Lepomis macrochirus (bluegill): 1,400 mg/L/96h.
LC50 Leuciscus idus test: 8,970 mg/L/48h.
LC50 Pimephales promelas (fathead minnow): 9,640 mg/L/96h.

Mobility in soil

No data available

Persistence and degradability

Further details: Product is readily biodegradable.

Additional ecological information

Oxygen demand: BOD 5: 53 %
ThOD: 72 %

Volatile organic compounds (VOC):
100 % by weight = 780 g/L

General information: Do not allow to enter into ground-water, surface water or drains.

13. Disposal considerations

Product

Recommendation: Recycling or special waste incineration.
Do not dispose of with household waste.

Contaminated packaging

Recommendation: Handle empty containers with care. Incineration may cause explosion.
Dispose of waste according to applicable legislation.
Cleaning agent (recommendation): water

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14. Transport information

USA: Department of Transportation (DOT)

Identification number: UN1219
 Proper shipping name: UN 1219, UN 1219, ISOPROPANOL or Isopropyl alcohol
 Hazard class or Division: 3
 Packing Group: II
 Labels: 3
 Special provisions: IB2, T4, TP1
 Packaging – Exceptions: 4b, 150
 Packaging – Non-bulk: 202
 Packaging – Bulk: 242
 Quantity limitations – Passenger aircraft / rail: 5 L
 Quantity limitations – Cargo only: 60 L
 Vessel stowage – Location: B



Sea transport (IMDG)

UN number: UN 1219
 Proper shipping name: UN 1219, ISOPROPANOL (ISOPROPYL ALCOHOL)
 Class or division, Subsidiary risk: Class 3, Subrisk -
 Packing Group: II
 EmS: F-E, S-D
 Special provisions: -
 Limited quantities: 1 L
 Excepted quantities: E2
 Contaminated packaging - Instructions: P001
 Contaminated packaging - Provisions: -
 IBC - Instructions: IBC02
 IBC - Provisions: -
 Tank instructions - IMO: -
 Tank instructions - UN: T4
 Tank instructions - Provisions: TP1
 Stowage and handling: Category B.
 Properties and observations: Colourless, mobile liquid. Flashpoint: 12°C c.c. Explosive limits: 2% to 12%. Miscible with water.
 Marine pollutant: no
 Segregation group: none

Air transport (IATA)

UN/ID number: UN 1219
 Proper shipping name: UN 1219, Isopropanol
 Class or division, Subsidiary risk: Class 3
 Packing Group: II
 Hazard label: Flamm. liquid
 Excepted Quantity Code: E2
 Passenger and Cargo Aircraft: Ltd.Qty.: Pack.Instr. Y341 - Max. Net Qty/Pkg. 1 L
 Passenger and Cargo Aircraft: Pack.Instr. 353 - Max. Net Qty/Pkg. 5 L
 Cargo Aircraft only: Pack.Instr. 364 - Max. Net Qty/Pkg. 60 L
 Special provisions: A180
 Emergency Response Guide-Code (ERG): 3L

15. Regulatory information

National regulations - U.S. Federal Regulations

TSCA Inventory: listed
 TSCA HPVC: not listed
 Carcinogen Status:
 IARC Rating: Group 3
 OSHA Carcinogen: not listed
 NTP Rating: not listed
 NIOSH Recommendations:
 Occupational Health Guideline: 0359

National regulations - U.S. State Regulations

Idaho Air Pollutant List:
 Title 585: AAC: 49 -- EL: 65.3 -- WEL: 980 -Title 586: -
 Massachusetts Haz. Substance codes: 2,4,5,6 F9
 Minnesota Haz. Substance:
 Codes: ANO -- Ratings: 7.84 -- Status: Title III. TRI.
 New Jersey RTK Hazardous Substance:
 DOT: 1219 - Sub No.: 1076 - TPQ: -
 Pennsylvania Haz. Substance code: E
 Washington Air Contaminant:
 TWA: 400 ppm - 980 mg -- STEL: 500 ppm - 1225 mg

National regulations - Canada

DSL: listed

National regulations - Great Britain

Hazchem-Code: •2YE

16. Other information

Text for labeling: Contains 100 % Isopropyl alcohol. Safety data sheet available on request.

Hazard rating systems: NFPA Hazard Rating:



Health: 1 (Slight)
 Fire: 3 (Serious)
 Reactivity: 0 (Minimal)

HMIS Version III Rating:

Health: 1 (Slight)
 Flammability: 3 (Serious)
 Physical Hazard: 0 (Minimal)

Personal Protection: X = Consult your supervisor

JT Baker Storage Color Code: Red (Flammable Hazard)

HEALTH	1
FLAMMABILITY	3
PHYSICAL HAZARD	0
	X

Reason of change: Changes in section 1.3: Corporate headquarters

Date of first version: 9/6/1989

Department issuing data sheet

Contact person: see section 1: Dept. responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.