



Safety Data Sheet

ISOPROPYL ALCOHOL FEDERAL

SECTION 1: Identification

1.1 Product identifier

Product name	ISOPROPYL ALCOHOL FEDERAL
Product number	Not available.
Brand	Not available.
Substance name	ISOPROPANOL
EC no.	200-661-7
CAS no.	67-63-0
Index no.	603-117-00-0

1.2 Other means of identification

None.

1.3 Recommended use of the chemical and restrictions on use

USES: This compound is used as a solvent in perfumery and cosmetics, in the preservation of pathological specimens and dehydration of tissues, as a non-aqueous moistening agent for tablet granulation, in hair preparations, in lotions, in liniments, as a solvent for creosote, resins, gums, inks, oils, lotions, shellac and essential oils, as an antifreeze mixture and as an extraction solvent in food preparation. It is externally substituted for industrial methylated spirit and surgical spirit. It is also used in the extraction of alkaloids, in quick-drying oils, in quick-drying inks, in the denaturing of ethyl alcohol, in body rubs, in after-shave lotions, in the manufacture of acetone, glycerol and isopropyl acetate; as a pharmaceutical aid (solvent), as an antiseptic, as a rubefacient, as a deicing agent for liquid fuels, as a dehydrating agent, as a window cleaner, in permanent hair wave preparations, in dye solutions, as a disinfectant and in pliable ice packs.

1.4 Supplier's details

Name	Duda Energy LLC
Address	1112 Brooks St. Decatur, AL 35601 USA
Telephone	256.340.4866
Fax	Not available.
email	Not available.

1.5 Emergency phone number(s)

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

GHS classification in accordance with: UN GHS rev. 5

- Specific target organ toxicity, single exposure (chapter 3.8), Cat. 3
- Eye damage/irritation (chapter 3.3), Cat. 2
- Flammable liquids (chapter 2.6), Cat. 2

2.2 GHS label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H336
H319
H225

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

Precautionary statement(s)

P501
P405
P403+P235
P403+P233

Dispose of contents/container to ...
Store locked up.
Store in a well ventilated place. Keep cool.
Store in a well ventilated place. Keep container tightly closed.

P370+P378
P337+P313
P312
P305+P351+P338

In case of fire: Use ... to extinguish.
If eye irritation persists: Get medical advice/attention.
Call a POISON CENTER/doctor/... if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

P304+P340

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

P303+P361+P353

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wear protective gloves/protective clothing/eye protection/face protection.

P280

Use only outdoors or in a well-ventilated area.

P271

Wash ... thoroughly after handling.

P264

Avoid breathing dust/fume/gas/mist/vapours/spray.

P261

Take precautionary measures against static discharge.

P243

Use only non-sparking tools.

P242

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

P241

Ground/bond container and receiving equipment.

P240

P233

Keep container tightly closed.

P210

Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.

2.3 Other hazards which do not result in classification

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

Statement regarding ingredients of unknown toxicity

None

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name	ISOPROPANOL
EC no.	200-661-7
CAS no.	67-63-0
Index no.	603-117-00-0
Formula	C ₃ H ₈ O
Molecular weight	60.1
Other names / synonyms	UN 1219; ISOPROPYL ALCOHOL
Impurities and stabilizing additives	None

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice	Do not consume.
If inhaled	IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Respirator Recommendation.
In case of skin contact	IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. If symptoms such as redness or irritation develop, IMMEDIATELY call a physician and be prepared to transport the victim to a hospital for treatment.
In case of eye contact	First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any

ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

If swallowed

DO NOT INDUCE VOMITING. Volatile chemicals have a high risk of being aspirated into the victim's lungs during vomiting which increases the medical problems. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. IMMEDIATELY transport the victim to a hospital. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. IMMEDIATELY transport the victim to a hospital.

Personal protective equipment for first-aid responders

Not available.

4.2 Most important symptoms/effects, acute and delayed

Symptoms of exposure to this compound include irritation of the skin, eyes, nose, throat and respiratory tract, dizziness, nausea, central nervous system depression, dizziness, giddiness and headache. It can cause flushing, decrease in pulse rate, lowered blood pressure, anesthesia, narcosis, mental depression, hallucinations, distorted perceptions, dyspnea, respiratory depression, vomiting, corneal burns, eye damage and coma. It can also cause abdominal pain, hematemesis, areflexia, oliguria followed by diuresis, generalized tenderness, induration and edema of muscles. Prolonged skin contact may cause corrosion. Drunkenness may also occur.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to the affected area and call an ambulance. Continue to flush during transportation to the hospital. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Alcohol resistant foam. Water fog. Carbon dioxide (CO₂). Dry chemical powder, sand, or earth for small fires only.

5.2 Specific hazards arising from the chemical

Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity and other accumulation may be significantly increased by the presence of small quantities of water or other "contaminants." Material will float and may ignite on surface of water. During fire, gases that are hazardous to health may form.

5.3 Special protective actions for fire-fighters

Self-contained breathing apparatus and full protective clothing must be worn in case of a fire.

Further information

No further information available.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recover or safe disposal. Local authorities should be advised if significant spillages cannot be contained.

6.2 Environmental precautions

Avoid discharge into drains, water courses, or onto the ground. Use appropriate containment to avoid environmental contamination.

6.3 Methods and materials for containment and cleaning up

If you should spill this chemical, use absorbent paper to pick up all liquid spill material. Seal the absorbent paper, as well as any of your clothing which may be contaminated, in a vapor-tight plastic bag for eventual disposal. Wash any surfaces you may have contaminated with a soap and water solution. Do not reenter the contaminated area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned.

Reference to other sections

None.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Do not handle, store, or open near an open flame, sources of heat, or sources of ignition. Protect the material from direct sunlight. When using, do not smoke. Explosion-proof general and local exhaust ventilation. Minimize fire risk from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleanin, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion proof equipment. Avoid breathing mist or vapor. Avoid contact with eyes. Avoid prolonged exposure. Wear appropriate personal protect equipment. Observe good industrial hygiene practices.

For more information on equipment bonding and grounding, refer to the Canadian Electrical Cod in Canada (CSA C22.1) or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire

Protection Association (NFPA) 77, "Recommended PRACTICE on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code."

7.2 Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks, and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry, place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated area. Keep in an area equipped with sprinklers. Store away from incompatible materials.

Specific end use(s)

None other than specified.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. Isopropyl alcohol (CAS: 67-63-0)

REL (Inhalation): 400 ppm, (ST) 500 ppm (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

2. Isopropyl alcohol (CAS: 67-63-0)

PEL (Inhalation): 400 ppm, (ST) 500 ppm (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

3. Isopropyl alcohol (CAS: 67-63-0)

PEL (Inhalation): 980 mg/m³ (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

4. Isopropyl alcohol (CAS: 67-63-0)

PEL (Inhalation): 400 ppm (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

8.2 Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (Typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. IF applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels to an acceptable level.

Always provide eye wash and emergency shower stations.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Goggles, Full-face respirator

Skin protection

*MINIMUM PROTECTIVE CLOTHING: Not available *RECOMMENDED GLOVE MATERIALS: GlovES+ Expert System Glove Types For The Neat (Undiluted) Chemical: This chemical has not been tested for permeation by Radian Corporation; however, the GlovES+ expert system was used to extrapolate permeation test information from compounds in the same chemical class. The GlovES+ system uses permeation data from literature sources; therefore, extra safety margins should be used with the estimated protection time(s). If this chemical makes direct contact with your glove, or if a tear, puncture or hole develops, replace them at once. The GlovES+ expert system is a tool

that can help people better manage protection from chemicals, however this tool cannot replace sound judgment nor make technical decisions. Our GlovES+ expert system is designed to offer initial advice and assistance in glove selection while the final glove selection should be made by knowledgeable individuals based on the specific circumstances involved. Glove Type Model Number Thickness Estimated Protection Time Neoprene Ansell Neoprene 530 0.46 mm 360 min Nitrile Pioneer A-14 0.56 mm 480 min PE/EVAL/PE Safety4 4H 0.07 mm 240 min PVC Comasec Multitop 0.07 mm 480 min

Body protection

Wear suitable protective clothing (splash protection).

Respiratory protection

*RECOMMENDED RESPIRATOR: When working with this chemical, wear a NIOSH-approved full face chemical cartridge respirator equipped with the appropriate organic vapor cartridges. If that is not available, a half face respirator similarly equipped plus airtight goggles can be substituted. However, please note that half face respirators provide a substantially lower level of protection than do full face respirators.

Thermal hazards

Wear appropriate thermal protective clothing when necessary.

Environmental exposure controls

Make all considerations to prevent spillage from occurring.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form (physical state, color, etc.)	Liquid
Odor	Characteristic
Odor threshold	Not available
pH	Not available
Melting point/freezing point	-88.5
Initial boiling point and boiling range	82.5
Flash point	12 °C
Evaporation rate	Not available
Flammability (solid, gas)	Flammable
Upper/lower flammability limits	Upper: 12% estimated Lower: 2.5% estimated
Vapor pressure	33 mm Hg @ 20 C [051,058,062,421]; 40 mm Hg @ 23.8 C [301]
Vapor density	2.07 [043,051,055]
Relative density	0.785 @ 20 °C [055,371]
Solubility(ies)	Not available
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	399 °C
Decomposition temperature	Not available
Viscosity	2.1 centipoise @ 25 C
Explosive properties	Not available
Oxidizing properties	Not available

Other safety information

None

SECTION 10: Stability and reactivity

10.1 Reactivity

The product is stable and non-reactive under normal conditions of use, storage and transport.

10.2 Chemical stability

Material is stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames, and other ignition sources. Avoid temperatures exceeding the flash point. Avoid contact with incompatible materials.

10.5 Incompatible materials

Acids, strong oxidizing agents, isocyanates, chlorine..

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Narcotic effects.

ISOPROPANOL (CAS 67-63-0)

LC50 Oral - Dog - 4797 mg/kg

LC50 Oral - Mouse - 3600 mg/kg

LD50 Oral - Rabbit - 5.03 g/kg

LD50 Oral - Rat - 4.7 g/kg

LD50 Percutaneous - Rabbit - 12800 mg/kg

Skin corrosion/irritation

Prolonged skin contact may cause temporary irritation.

Serious eye damage/irritation

Causes serious eye irritation.

Respiratory or skin sensitization

Not a respiratory sensitizer.

This product is not expected to cause skin sensitization.

Germ cell mutagenicity

No data available to indicate product or any of its components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Reproductive toxicity

This product is not expected to cause reproductive or developmental issues.

Summary of evaluation of the CMR properties

Not available.

STOT-single exposure

May cause drowsiness and dizziness.

STOT-repeated exposure

Not classified.

Aspiration hazard

Not an aspiration hazard.

Additional information

Prolonged inhalation may be harmful.

SECTION 12: Ecological information

Toxicity

This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

LC50 - Lepomis macrochirus (bluegill) - >1400mg/l - 96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Not available.

Results of PBT and vPvB assessment

Not available.

Other adverse effects

No other adverse environmental effects (E.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: Disposal considerations

Disposal of the product

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Disposal of contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Waste treatment

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

Sewage disposal

None.

Other disposal recommendations

Dispose in accordance with all local regulations.

SECTION 14: Transport information

DOT (US)

UN Number: UN1219
Class: 3
Packing Group: II
Proper Shipping Name: ISOPROPANOL

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Pennsylvania Right To Know Components

Chemical name: 2-Propanol
CAS number: 67-63-0

New Jersey Right To Know Components

Common name: ISOPROPYL ALCOHOL
CAS number: 67-63-0

Massachusetts Right To Know Components

Chemical name: Isopropyl alcohol (mfg-strong acid process)
CAS number: 67-63-0

15.2 Chemical Safety Assessment

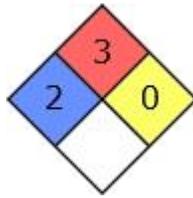
Not available

HMIS Rating

ISOPROPANOL
HEALTH
2

FLAMMABILITY
3
PHYSICAL HAZARD
0
PERSONAL PROTECTION

NFPA Rating



SECTION 16: Other information

16.1 Further information/disclaimer

The information provided in this Safety Data Sheet is correct to the best of Duda Energy LLC's knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This Safety Data Sheet only contains information relating to safety and does not replace any product information or product specification. Please note, the content may be changed, corrected, or deleted at any time without notice and may not always necessarily reflect the most current data. Duda Energy LLC will assume no responsibility for any trouble or failure caused by the errors in the information provided nor any damage associated with the usage of the information.

16.2 Preparation information

Version: 2
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