

SAFETY DATA SHEET

Preparation Date: 1/16/2017

Revision Date: 1/16/2017

Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: I1047
Product Name: ISOPENTYL ALCOHOL, REAGENT, ACS

Other means of identification

Synonyms: 2-Methyl-4-butanol
 3-Methyl butanol
 3-Methyl-1-butanol
 3-Methylbutan-1-ol
 3-Metil-butanolo (Italian)
 Alcool amilico (Italian)
 Alcool isoamylique (French)
 Amylowy alkohol (Polish)
 Iso-amylalkohol (German)
 Isoamyl alcohol
 Isoamylol
 Isobutylcarbinol
 Isopentanol

CAS #: 123-51-3
RTECS # EL5425000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Solvent.
Uses advised against Not for food or drug use.

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000.

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300

Contact Person: Martin LaBenz (West Coast)

Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3

Label elements**Warning****Hazard statements**

Harmful if swallowed
Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation
Flammable liquid and vapor

**Hazards not otherwise classified (HNOC)**

Not Applicable

Other hazards

May be harmful if inhaled
May be harmful in contact with skin

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/.../equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool
Wear protective gloves
Wear eye/face protection

Precautionary Statements - Response

In case of fire: Use CO₂, dry chemical, or foam to extinguish.
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/attention.
If skin irritation occurs: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Storage

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

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Isopentyl Alcohol	123-51-3	100

4. FIRST AID MEASURES

First aid measures

General Advice:	National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.
Skin Contact:	Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention. If skin irritation persists, call a physician.
Eye Contact:	Flush eyes with water for 15 minutes. Get medical attention.
Inhalation:	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Ingestion:	Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

Symptoms	Irritating to eyes, respiratory system and skin. Hearing impairment. May cause muscle weakness. May cause muscle pain. May cause nausea and vomiting. May cause diarrhea. Central nervous system effects. May cause headache. Fainting. Dizziness. Lightheadedness. Sleepiness. Delirium. Coma. May affect the liver. It may affect the kidneys. May cause bronchitis. Coughing and wheezing. Dyspnea (Shortness of breath and difficulty breathing). Repeated or prolonged exposure may cause dryness or cracking of the skin. Visual disturbances. Diplopia. May cause burning sensation in the chest and stomach.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician:	Treat symptomatically.
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Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media:	Carbon dioxide (CO ₂). Dry chemical. Alcohol-resistant foam. Water spray.
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Unsuitable Extinguishing Media:	Do not use a solid (straight) water stream as it may scatter and spread fire.
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Specific hazards arising from the chemical

Hazardous Combustion Products:	Carbon Dioxide, Carbon Monoxide.
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Specific hazards:	Flammable. May be ignited by heat, sparks or flames. Vapor may travel considerable distance to source of
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ignition and flash back. Vapors may form explosive mixtures with air. Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks). Container explosion may occur under fire conditions or when heated. Fire may produce irritating, corrosive and/or toxic gases.

Special Protective Actions for Firefighters

Specific Methods:

Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

Special Protective Equipment for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions:

Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods and material for containment and cleaning up

Methods for containment

Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth).

Methods for cleaning up

Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use clean non-sparking tools to collect absorbed material. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store in a segregated and approved area. Store away from incompatible materials.

Incompatible Materials:

- Strong oxidizing agents
- Strong acids
- Acid chlorides
- Acid anhydrides
- Amines
- Caustics
- isocyanates
- Reducing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WHEEL
Isopentyl Alcohol	123-51-3	100 ppm TWA 360 mg/m ³ TWA	= 100 ppm TWA	= 125 ppm STEL	None

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Isopentyl Alcohol	123-51-3	= 100 ppm TWA = 361 mg/m ³ TWA	= 100 ppm TWA	100 ppm TWA	100 ppm TWAEV 361 mg/m ³ TWAEV 125 ppm STEV 452 mg/m ³ STEV

Australia and Mexico

Components	CAS-No.	Australia	Mexico
Isopentyl Alcohol	123-51-3	452 mg/m ³ STEL 100 ppm TWA 361 mg/m ³ TWA	= 100 ppm TWA = 360 mg/m ³ TWA

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

- Eye protection:** Goggles
- Skin and body protection:** Chemical resistant apron. Long sleeved clothing. Gloves.
- Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or

smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid	Appearance: Clear. Oily.	Color: Colorless.
Odor: Characteristic. Disagreeable.	Taste: Pungent. Repulsive.	Formula: C5H12O
Molecular/Formula weight: 88.15	Flammability: Flammable	Flashpoint (°C/°F): 43-45.6 °C/109-114 °F
Flash Point Tested according to: Closed cup	Autoignition Temperature (°C/°F): 350-380 °C/662-573.8 °F	Lower Explosion Limit (%): 1.2%
Upper Explosion Limit (%): 9%	Melting point/range(°C/°F): -117.2 °C/-179 °F	Decomposition temperature(°C/°F): No information available
Boiling point/range(°C/°F): 130-132.5 °C/266-270.5 °F	Bulk density: No information available	Density (g/cm3): 0.80-0.8104
Specific gravity: 0.8-0.813	pH: No information available	Vapor pressure @ 20°C (kPa): 0.32-0.49
Evaporation rate: No information available	Vapor density: 3.04	VOC content (g/L): 800
Odor threshold (ppm): 0.83	Partition coefficient (n-octanol/water): log Kow = 1.16-1.28	Viscosity: No information available
Miscibility: Miscible with Ether Miscible with alcohol Miscible with Benzene Miscible with Chloroform Miscible with Petroleum Ether Miscible with glacial Acetic Acid	Solubility: Very soluble in Acetone Solubility in Water: 2.6- 2.67 g/100 ml@ 20 °C	

10. STABILITY AND REACTIVITY

Reactivity

Interaction of pentanol and hydrogen trisulfide is explosively violent

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Incompatible materials.

Incompatible Materials:
Strong oxidizing agents
Strong acids
Acid chlorides
Acid anhydrides
Amines
Caustics

isocyanates
Reducing agents

Hazardous decomposition products:

Carbon monoxide. Carbon dioxide. When heated to decomposition it emits acrid smoke and irritating fumes.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:

Ingestion. Inhalation. Skin.

Acute Toxicity

Component Information

Isopentyl Alcohol	
CAS-No.	123-51-3

LD50/oral/rat = 1300 mg/kg Oral LD50 Rat
LD50/oral/mouse = No information available
LD50/dermal/rabbit = 3250mg/kg Dermal LD50 Rabbit
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 1300 mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = 3250 mg/kg

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Causes skin irritation. Moderately irritating to the skin. It can be absorbed through the skin. May be harmful in contact with skin.

Eye Contact: Causes serious eye irritation. Moderately irritating to the eyes.

Inhalation May be harmful if inhaled. Irritating to respiratory system. May cause sore throat. Symptoms may include coughing and wheezing, and shortness of breath. May cause dizziness and headache. May cause fainting (passing out). May cause lightheadedness. May cause nausea, vomiting. May cause diarrhea. May cause double vision, deafness, delirium, coma.

Ingestion Harmful if swallowed. May affect liver. May affect the kidneys. May cause a burning sensation in the mouth, chest, and stomach. May cause muscle weakness and/or muscle pain. May cause nausea. May cause headache. It may cause central nervous system depression. May affect behavior/central nervous system (somnolence, sedation, sleepiness). May affect behavior/central nervous system (coma).

Ingestion: May affect the pulse rate. May cause death due to asphyxiation

Aspiration hazard No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Chronic exposure may affect the liver and kidneys. Prolonged or repeated ingestion may affect the liver, and kidneys. Repeated exposure may cause bronchitis to develop with cough, phlegm, and /or shortness of breath. Repeated or prolonged skin contact may cause dryness and cracking of the skin.

Sensitization: No information available.

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Isopentyl Alcohol	123-51-3	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: No information available

Developmental Effects: No information available

Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure Respiratory system.

STOT - repeated exposure No information available.

Product code: I1047

Product name: ISOPENTYL
ALCOHOL, REAGENT, ACS

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Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

Isopentyl Alcohol - 123-51-3

Freshwater Algae Data: 181 mg/L EC50 *Desmodesmus subspicatus* 96 h
493 mg/L EC50 *Desmodesmus subspicatus* 72 h

Freshwater Fish Species Data: 700 mg/L LC50 *Salmo gairdneri* 96 h static 1

Water Flea Data: 260 mg/L EC50 *Daphnia magna* 48 h

Persistence and degradability: Readily biodegradable

Bioaccumulative potential: Potential for bioconcentration in aquatic organisms is low.

Mobility: It is expected to have very high mobility based on estimated Koc.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Isopentyl Alcohol	123-51-3	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN1105
Proper Shipping Name: Pentanols
Hazard Class: 3
Subsidiary Class: No information available
Packing group: III
Emergency Response Guide Number: 129
Marine Pollutant: No data available
DOT RQ (lbs): No information available
Special Provisions: B1, B3, IB3, T2, TP1
Symbol(s): No information available
Description: UN1105, PENTANOLS, 3, III

TDG (Canada)

UN-No: UN1105
Proper Shipping Name: Pentanols
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: III

Product code: I1047

Product name: ISOPENTYL
ALCOHOL, REAGENT, ACS

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Marine Pollutant Description: No Information available
UN1105, PENTANOLS, 3, III

ADR

UN-No: UN1105
Proper Shipping Name: Pentanols
Hazard Class: 3
Packing Group: III
Subsidiary Risk: No information available
Description: UN1105, PENTANOLS, 3, III

IMO / IMDG

UN-No: UN1105
Proper Shipping Name: Pentanols
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: III
Marine Pollutant No information available
EMS: F-E
Special Provisions 223
Description UN1105, PENTANOLS, 3, III

RID

UN-No: UN1105
Proper Shipping Name: Pentanols
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: III
Description: UN1105, PENTANOLS, 3, III

ICAO

UN-No: UN1105
Proper Shipping Name: Pentanols
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: III
Description: UN1105, PENTANOLS, 3, III
Special Provisions A3

IATA

UN-No: UN1105
Proper Shipping Name: Pentanols
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: III
ERG Code: 3L
Special Provisions No information available
Description: UN1105, PENTANOLS, 3, III

15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Isopentyl Alcohol</i>	123-51-3	Present	Present KE-23575	Present	Present (2)-217	Present	Present	Present 204-633-5

U.S. Regulations

Product code: I1047

Product name: ISOPENTYL
ALCOHOL, REAGENT, ACS

Isopentyl Alcohol

Massachusetts RTK: Present

New Jersey RTK Hazardous Substance List: 1039

Pennsylvania RTK: Present

Minnesota - Hazardous Substance List: Present

California Directors List of Hazardous Substances: Present

FDA - Direct Food Additives 21 CFR 172.515

FDA - 21 CFR - Total Food Additives 172.515

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Isopentyl Alcohol	123-51-3	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
Isopentyl Alcohol	123-51-3	None	None	None	None	None

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Isopentyl Alcohol	123-51-3	Not Applicable	Not Applicable

Canada

WHMIS hazard class:

B3 Combustible liquid

D2B Toxic materials

Components

Isopentyl Alcohol

WHIMHAZ

B3 D2B

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
Isopentyl Alcohol	1 %

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Isopentyl Alcohol	123-51-3	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Isopentyl Alcohol	123-51-3	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Isopentyl Alcohol	123-51-3	Not listed

Product code: I1047

Product name: ISOPENTYL ALCOHOL, REAGENT, ACS

EU Classification**R-phrase(s)**

R22 - Harmful if swallowed.

R36/37/38 - Irritating to eyes, respiratory system and skin.

S -phrase(s)

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S37 - Wear suitable gloves.

S46 - If swallowed, seek medical advice immediately and show this container or label.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Isopentyl Alcohol	123-51-3		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC**Indication of danger:**

Xn - Harmful.

Xi - Irritant.

Xn



Xi

**16. OTHER INFORMATION**

Preparation Date: 1/16/2017
Revision Date: 1/16/2017
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet