# SAFETY DATA SHEET

**Preparation Date:** No data available **Revision Date:** 02/23/2015 **Revision Number:** G1

**Product identifier**

**Product code:** HP452
**Product Name:** ISO-BUTYL ALCOHOL, HPLC GRADE

**Other means of identification**

**Synonyms:** Isobutanol; Iso-Butyl Alcohol
**CAS #:** 78-83-1
**RTECS #** NP9625000
**CI#:** Not available

**Recommended use of the chemical and restrictions on use**

**Recommended use:** No information available.
**Uses advised against** No information available

**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 by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

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

**Label elements**

**Warning**

**Hazard statements**
May be harmful if swallowed
Harmful in contact with skin
May be harmful if inhaled
Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation.  May cause drowsiness or dizziness
Flammable liquid and vapor

**Hazards not otherwise classified (HNOC)**
Not Applicable

**Other hazards**
Can burn with an invisible flame

**Precautionary Statements - Prevention**
Wear protective gloves/protective clothing/eye protection/face protection
Wash face, hands and any exposed skin thoroughly after handling
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

**Precautionary Statements - Response**
Specific measures (see .? on this label)
Specific treatment (see .? on this label)
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.
Call a POISON CENTER or doctor/physician if you feel unwell
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 victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

**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 % | Trade Secret |
|---|---|---|---|
| iso-Butyl Alcohol<br>78-83-1 | 78-83-1 | 100 | * |

## 4. FIRST AID MEASURES

**First aid measures**

**General Advice:** Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126)

**Skin Contact:** Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician.

**Eye Contact:** Flush eye with water for 15 minutes. Get medical attention.

**Inhalation:** Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** Causes eye irritation. Eye contact may result in redness or pain. Causes skin irritation. Skin contact may result in redness, pain, inflammation, itching, scaling. Harmful by inhalation. May cause irritation of respiratory tract. Dizziness. Drowsiness. May be harmful if swallowed. May be harmful in contact with skin.

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician:** Treat symptomatically

**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 (CO2). Dry chemical. Water spray mist or foam.

**Unsuitable Extinguishing Media:** No information available.

### Specific hazards arising from the chemical

**Hazardous Combustion Products:** Carbon oxides

**Specific hazards:**

Flammable
May be ignited by heat, sparks or flames
Container explosion may occur under fire conditions or when heated
Vapor may travel considerable distance to source of 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)

## 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. Dike fire-control water for later disposal; do not scatter the material.

**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.

### 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). In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**

Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use only non-sparking tools. 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. Keep away from heat and sources of ignition. Store in a segrated and approved area.

**Incompatible Materials:**
Oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**National occupational exposure limits**

**United States**

| Components | OSHA | NIOSH | ACGIH | AIHA WHEEL |
|---|---|---|---|---|
| iso-Butyl Alcohol<br>78-83-1 | 100 ppm TWA<br>300 mg/m$^3$ TWA | = 50 ppm TWA<br>= 150 mg/m$^3$ TWA | = 50 ppm TWA | None |

**Canada**

| Components | Alberta | British Columbia | Ontario | Quebec |
|---|---|---|---|---|
| iso-Butyl Alcohol<br>78-83-1 | = 152 mg/m$^3$ TWA<br>= 50 ppm TWA | = 50 ppm TWA | 50 ppm TWA | 50 ppm TWAEV<br>152 mg/m$^3$ TWAEV |

**Australia and Mexico**

| Components | Australia | Mexico |
|---|---|---|
| iso-Butyl Alcohol<br>78-83-1 | 152 mg/m$^3$ TWA<br>50 ppm TWA | = 150 mg/m$^3$ TWA<br>= 50 ppm 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 Safety glasses with side-shields

**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. Wash hands before breaks and immediately after handling the product. When using do not smoke.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:**
Liquid

**Appearance:**
No information available

**Color:**
Colorless.

**Odor:**
Sweetish. Musty. Suffocating.

**Taste**
Sweet. Whiskey-like.

**Molecular/Formula weight:**
74.12

**Formula:**
C4H10O

**Flammability:**
No information available

**Flash point (°C):**
No data available

**Flashpoint (°C/°F):**
28°C/82.4°F

**Flash Point Tested according to:**
Closed cup

**Lower Explosion Limit (%):**
1.2

**Upper Explosion Limit (%):**
10.9

**Autoignition Temperature (°C/°F):**
415.56°C/780°F

**pH:**
No information available

**Melting point/range(°C/°F):**
-108°C/-162.4°F

**Boiling point/range(°C/°F):**
108°C/226.4°F

**Decomposition temperature(°C/°F):**
No information available

**Bulk density:**
No information available

**Specific gravity:**
0.806 @ 15°C

**Vapor pressure @ 20°C (kPa):**
1.2

**Density (g/cm3):**
No information available

**Evaporation rate:**
No information available

**Vapor density:**
2.56

**VOC content (g/L):**
No information available

**Odor threshold (ppm):**
40

**Partition coefficient (n-octanol/water):**
No information available

**Viscosity:**
No information available

**Miscibility:**
Miscible with alcohol
Miscible in diethyl ether

**Solubility:**
Partially soluble in cold water
Partially soluble in hot water

## 10. STABILITY AND REACTIVITY

**Reactivity**
Reactive with oxidizing agents
Reacts with aluminum

**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:** Oxidizing agents.

**Hazardous decomposition products:** Carbon oxides.

**Other Information**

**Corrosivity:** Isobutyl will attack some forms of plastic, rubber, and coatings

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Principal Routes of Exposure:**
Eyes. Ingestion. Inhalation. Skin.

**Acute Toxicity**

**Component Information**

*iso-Butyl Alcohol - 78-83-1*

**LD50/oral/rat =** = 2460 mg/kg Oral LD50 Rat
**LD50/oral/mouse =** No information available
**LD50/dermal/rat =** No information available
**LD50/dermal/rabbit =** 3400 mg/kg Dermal LD50Rabbit
**LC50/inhalation/rat =** 6.5 mg/L Inhalation LC50 Rat 4 h
**LC50/inhalation/mouse =** No infomation available
**Other LD50 or LC50information =** No information available

**Product Information**

**LD50/oral/rat =**
**VALUE- Acute Tox Oral =** 2460mg/kg

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

**LD50/dermal/rabbit**
**VALUE-Acute Tox Dermal =** 3400mg/kg

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

**LC50/inhalation/rat**
**VALUE-Vapor =** 6.5mg/l (4-hr)
**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. Skin contact may result in redness, pain, inflammation, itching, scaling. May be harmful in contact with skin. |
| **Eye Contact:** | Causes serious eye irritation. Eye contact may result in redness or pain. |
| **Inhalation** | Harmful by inhalation. May cause irritation of respiratory tract. |
| **Ingestion** | May be harmful if swallowed. |
| **Aspiration hazard** | No information available |

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

| | |
|---|---|
| **Chronic Toxicity** | No information available |
| **Sensitization:** | No information available |

**Mutagenic Effects:** No information available

**Carcinogenic effects:** Not considered carcinogenic

| Components | ACGIH - Carcinogens | IARC | NTP | OSHA HCS - Carcinogens | Australia - Prohibited Carcinogenic Substances | Australia - Notifiable Carcinogenic Substances |
|---|---|---|---|---|---|---|
| iso-Butyl Alcohol | Not listed | Not listed | Not listed | Not listed | Not listed | Not listed |

**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** No information available
**STOT - repeated exposure** No information available
**Target Organs:** No information available

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

**Ecotoxicity effects:** No data available.

*iso-Butyl Alcohol - 78-83-1*
**Freshwater Algae Data:** 230 mg/L EC50 Desmodesmus subspicatus 48 h
**Freshwater Fish Species Data:** 1120-1520 mg/L LC50 Oncorhynchus mykiss 96 h flow-through 1
1480-1730 mg/L LC50 Lepomis macrochirus 96 h flow-through 1
375 mg/L LC50 Pimephales promelas 96 h static 1
1370-1670 mg/L LC50 Pimephales promelas 96 h flow-through 1
**Water Flea Data:** 1070 - 1933 mg/L EC50 Daphnia magna 48 h
1300 mg/L EC50 Daphnia magna 48 h

**Persistence and degradability:** No information available

**Bioaccumulative potential:** No information available

**Mobility:** No information available

## 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 | RCRA - F Series Wastes | RCRA - K Series Wastes | RCRA - P Series Wastes | RCRA - U Series Wastes |
|---|---|---|---|---|
| iso-Butyl Alcohol | None | None | None | U140 Ignitable waste, Toxic waste |

## 14. TRANSPORT INFORMATION

**DOT**

**UN-No:** UN1212
**Proper Shipping Name:** Isobutanol
**Hazard Class:** 3
**Subsidiary Risk:**
**Packing Group:** III
**ERG No:** 129
**Marine Pollutant** No data available
**DOT RQ (lbs):** No information available
**Symbol(s):** R5

**TDG (Canada)**

**UN-No:** UN1212
**Proper Shipping Name:** Isobutanol
**Hazard Class:** 3
**Subsidiary Risk:** No information available
**Packing Group:** III
**Description:** No information available

**ADR**

**UN-No:** UN1212
**Proper Shipping Name:** Isobutanol
**Hazard Class:** 3
**Packing Group:** III
**Subsidiary Risk:** No information available
**Classification Code:** No information available
**Description:** No information available
**CEFIC Tremcard No:** No information available

**IMO / IMDG**

**UN-No:** UN1212
**Proper Shipping Name:** Isobutanol
**Hazard Class:** 3
**Subsidiary Risk:** No information available
**Packing Group:** III
**Description:** No information available
**IMDG Page:** No information available
**Marine Pollutant** No information available
**EMS:** F-E
**MFAG:** No information available
**Maximum Quantity:** No information available

**RID**

**UN-No:** UN1212
**Proper Shipping Name:** Isobutanol
**Hazard Class:** 3

## 14. TRANSPORT INFORMATION

**Subsidiary Risk:** No information available
**Packing Group:** III
**Classification Code:** No information available
**Description:** No information available

**ICAO**

**UN-No:** UN1212
**Proper Shipping Name:** Isobutyl alcohol
**Hazard Class:** 3
**Subsidiary Risk:** No information available
**Packing Group:** III
**Description:** No information available

**IATA**

**UN-No:** UN1212
**Proper Shipping Name:** Isobutyl alcohol
**Hazard Class:** 3
**Subsidiary Risk:** No information available
**Packing Group:** III
**ERG Code:** 3L
**Description:** No information available

## 15. REGULATORY INFORMATION

### International Inventories

| Components | U.S. TSCA | KOREA KECL | Philippines (PICCS) | Japan ENCS | CHINA | Australia (AICS) | EINECS-No. |
|---|---|---|---|---|---|---|---|
| *iso-Butyl Alcohol* | Present | Present KE-24894 | Present | Present (2)-3049 | Present | Present | Present 201-148-0 |

### U.S. Regulations

*iso-Butyl Alcohol*

**Massachusetts RTK:** Present
**New Jersey RTK Hazardous Substance List:** 1043
**New Jersey - Discharge Prevention - List of Hazardous Substances:** Present
**Pennsylvania RTK:** Environmental hazard
**Pennsylvania RTK - Environmental Hazard List** Present
**Pennsylvania RTK - Special Hazardous Substances** Present
**Minnesota - Hazardous Substance List:** Present
**New York Release Reporting - List of Hazardous Substances:**
= 5000 lb RQ
**Louisana Reportable Quantity List for Pollutants:** Listed
**California Directors List of Hazardous Substances:** Present

**FDA - Direct Food Additives** 21 CFR 172.515
21 CFR 172.869

**FDA - 21 CFR - Total Food Additives** 172.515 172.859 175.105 176.180 176.200 176.210 177.2800 73.1

**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 | Carcinogen | Developmental Toxicity | Male Reproductive Toxicity | Female Reproductive Toxicity: |
|---|---|---|---|---|
| iso-Butyl Alcohol | Not Listed | Not Listed | Not Listed | Not Listed |

**CERCLA/SARA**

| Components | 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* |
|---|---|---|---|---|---|
| *iso-Butyl Alcohol* | = 2270 kg final RQ<br>= 5000 lb final RQ | None | None | None | None |

**U.S. TSCA**

| Components | TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS) | TSCA 8(d) -Health and Safety Reporting |
|---|---|---|
| *iso-Butyl Alcohol* | Not Applicable | 03/07/1986 03/07/1996 |

## Canada

**WHMIS hazard class:**
B2 Flammable liquid
D2B Toxic materials

**iso-Butyl Alcohol**
B2 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 - |
|---|---|
| iso-Butyl Alcohol | 1 % |

**Inventory**

| Components | Canada (DSL) | Canada (NDSL) |
|---|---|---|
| iso-Butyl Alcohol | Present | Not Listed |

| Components | CEPA Schedule I - Toxic Substances | CEPA - 2010 Greenhouse Gases Subject to Manditory Reporting |
|---|---|---|
| iso-Butyl Alcohol | Not listed | Not listed |

**EU Classification**

**R-phrase(s)**
R10 - Flammable.
R36 - Irritating to eyes.
R38 - Irritating to skin.

**S -phrase(s)**
S 2 - Keep out of the reach of children.
S46 - If swallowed, seek medical advice immediately and show this container or label.

| Components | Classification | Concentration Limits: | Safety Phrases |
|---|---|---|---|

| | | | |
|---|---|---|---|
| iso-Butyl Alcohol | R10<br>Xi; R37/38-41<br>R67 | No information | S2 S7/9 S13 S26 S37/39 S46 |

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

**Indication of danger:**
Flammable
T - Toxic

## 16. OTHER INFORMATION

**Revision Date:** 02/23/2015
**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**