

Isobutane (Pure Grade)

Version 1.4

Revision Date 2011-02-18

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**Product information**

Trade name : Isobutane (Pure Grade)
Material : 1012533, 1012525, 1030036, 1020532, 1020529, 1020530,
1020531

Company : Chevron Phillips Chemical Company LP
Specialty Chemicals
10001 Six Pines Drive
The Woodlands, TX 77380

Emergency telephone:**Health:**

866.442.9628 (North America)
1.832.813.4984 (International)

Transport:

North America: CHEMTREC 800.424.9300 or 703.527.3887
Asia: +800 CHEMCALL (+800 2436 2255) China: 0532.8388.9090
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Chemcare Asia: Tel: +65 6848 9048 - Mob: +65 8382 9188 - Fax: +65 6848
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Responsible Department : Product Safety and Toxicology Group
E-mail address : MSDS@CPChem.com
Website : www.CPChem.com

2. HAZARDS IDENTIFICATION**Emergency Overview****Danger**

Form: Liquefied gas **Physical state:** Gaseous **Color:** Colorless **Odor:** Odorless
OSHA Hazards : Flammable Gas, Compressed Gas

GHS Classification

: Flammable gases, Category 1
Gases under pressure, Liquefied gas
Acute toxicity, Category 5, Inhalation

GHS-Labeling

Symbol(s)

:



Signal Word

: Danger

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Hazard Statements : H220: Extremely flammable gas.
H280: Contains gas under pressure; may explode if heated.
H333: May be harmful if inhaled.

Precautionary Statements : **Prevention:**
P210 Keep away from heat/sparks/open flames/hot surfaces.
- No smoking.
Response:
P304 + P312 IF INHALED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 Eliminate all ignition sources if safe to do so.
Storage:
P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Carcinogenicity:**IARC**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Methylpropane, ISO
2-methylpropane
raw material for pp
IC4
IsoC4
Isobutane (Instrument Grade)

Molecular formula : C₄H₁₀

Chemical Name	CAS-No. / EINECS-No.	Concentration [wt%]
Isobutane	75-28-5	99 - 100

4. FIRST AID MEASURES

General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Do not leave the victim unattended.

If inhaled : Consult a physician after significant exposure. If unconscious place in recovery position and seek medical advice.

In case of eye contact : Flush eyes with water as a precaution. Remove contact

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lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

5. FIRE-FIGHTING MEASURES

Flash point : -83 °C (-117 °F)
estimated

Autoignition temperature : 460 °C (860 °F)

Suitable extinguishing media : Alcohol-resistant foam. Carbon dioxide (CO₂). Dry chemical.

Unsuitable extinguishing media : High volume water jet.

Special protective equipment for fire-fighters : Wear self contained breathing apparatus for fire fighting if necessary.

Further information : For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

Fire and explosion protection : Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

Hazardous decomposition products : Carbon oxides.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

7. HANDLING AND STORAGE**Handling**

Advice on safe handling : For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide

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sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

Storage

Requirements for storage areas and containers : Prevent unauthorized access. No smoking. Keep container tightly closed in a dry and well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Ingredients with workplace control parameters**

US

Ingredients	Basis	Value	Control parameters	Note
Isobutane	ACGIH	TWA	1,000 ppm,	
	NIOSH REL	TWA	800 ppm, 1,900 mg/m3	

Personal protective equipment

Respiratory protection : Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.

Skin and body protection : Impervious clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties****Appearance**

Form : Liquefied gas

Physical state : Gaseous

Color : Colorless

Odor : Odorless

Safety data

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Flash point	: -83 °C (-117 °F) estimated
Lower explosion limit	: 1.4 %(V)
Upper explosion limit	: 8.4 %(V)
Oxidizing properties	: No
Autoignition temperature	: 460 °C (860 °F)
Molecular formula	: C ₄ H ₁₀
Molecular Weight	: 58.14 g/mol
pH	: Not applicable
Pour point	: No data available
Boiling point/boiling range	: -12 °C (10 °F)
Vapor pressure	: 72.00 PSI at 37.8 °C (100.0 °F)
Water solubility	: Negligible
Partition coefficient: n-octanol/water	: No data available
Viscosity, kinematic	: No data available
Relative vapor density	: 2.1 at 15.6 °C (60.1 °F) (Air = 1.0)
Evaporation rate	: > 1
Percent volatile	: > 99 %

10. STABILITY AND REACTIVITY**Possibility of hazardous reactions**

Conditions to avoid	: Heat, flames and sparks.
Materials to avoid	: May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Other data	: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. No decomposition if stored and applied as directed.

11. TOXICOLOGICAL INFORMATION**Isobutane (Pure Grade)**

Acute inhalation toxicity	: LC50: 31 mg/l
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Exposure time: 4 HR

Species: rat

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Skin irritation : No skin irritation

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Eye irritation : No eye irritation

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Aspiration toxicity : No aspiration toxicity classification.

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Further information : No data available.

12. ECOLOGICAL INFORMATION**Elimination information (persistence and degradability)**

Biodegradability : Expected to be biodegradable

Further information on ecology**Additional ecological information** : No data available**13. DISPOSAL CONSIDERATIONS**

The information in this MSDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product : Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

14. TRANSPORT INFORMATION

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the MSDS and the bill of lading.

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USDOT

UN1969, ISOBUTANE, 2.1

IMO / IMDG

UN1969, ISOBUTANE, 2.1, (-83 °C)

IATA

UN1969, ISOBUTANE, 2.1

ADR

UN1969, ISOBUTANE, 2.1

RID

UN1969, ISOBUTANE, 2.1 (13)

15. REGULATORY INFORMATION**National legislation**

SARA 311/312 Hazards : Fire Hazard
Sudden Release of Pressure Hazard

SARA 302 Reportable Quantity : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Ingredients : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

Ozone-Depletion Potential : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

US State Regulations**Pennsylvania Right To Know**

Ingredients : Isobutane 75-28-5

New Jersey Right To Know

Ingredients : Isobutane 75-28-5

California Prop. 65 Ingredients

: This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

Europe REACH : On the inventory, or in compliance with the inventory
United States of America US.TSCA : On the inventory, or in compliance with the inventory
Canada DSL : On the inventory, or in compliance with the inventory
Australia AICS : On the inventory, or in compliance with the inventory

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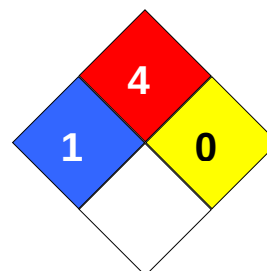
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New Zealand NZIoC	: On the inventory, or in compliance with the inventory
Japan ENCS	: On the inventory, or in compliance with the inventory
Korea KECI	: On the inventory, or in compliance with the inventory
Philippines PICCS	: On the inventory, or in compliance with the inventory
China IECSC	: On the inventory, or in compliance with the inventory

16. OTHER INFORMATION

NFPA Classification : Health Hazard: 1
 Fire Hazard: 4
 Reactivity Hazard: 0

**Further information**

Legacy MSDS Number : 3438

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this MSDS pertains only to the product as shipped.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Key or legend to abbreviations and acronyms used in the safety data sheet

ACGIH	American Conference of Government Industrial Hygienists	LOAEL	Lowest Observed Adverse Effect Level
AICS	Australia, Inventory of Chemical Substances	NFPA	National Fire Protection Agency
DSL	Canada, Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
NDSL	Canada, Non-Domestic Substances List	NTP	National Toxicology Program
CNS	Central Nervous System	NZIoC	New Zealand Inventory of Chemicals
CAS	Chemical Abstract Service	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration	NOEC	No Observed Effect Concentration
EC50	Effective Concentration 50%	OSHA	Occupational Safety & Health Administration
EINECS	European Inventory of Existing Chemical Substances	PEL	Permissible Exposure Limit
MAK	Germany Maximum Concentration Values	PICCS	Philippines Inventory of Commercial Chemical Substances
GHS	Globally Harmonized System	PRNT	Presumed Not Toxic
>=	Greater Than or Equal To	RCRA	Resource Conservation Recovery Act
IC50	Inhibition Concentration 50%	STEL	Short-term Exposure Limit
IARC	International Agency for Research on Cancer	SARA	Superfund Amendments and Reauthorization Act.
IECSC	Inventory of Existing Chemical Substances in China	TLV	Threshold Limit Value

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ENCS	Japan, Inventory of Existing and New Chemical Substances	TWA	Time Weighted Average
KECI	Korea, Existing Chemical Inventory	TSCA	Toxic Substance Control Act
<=	Less Than or Equal To	UVCB	Unknown or Variable Compositon, Complex Reaction Products, and Biological Materials
LC50	Lethal Concentration 50%	WHMIS	Workplace Hazardous Materials Information System
LD50	Lethal Dose 50%		