

Normal Butane C/ISOM Grade

Version 2.0

Revision Date 2017-12-05

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information

Product Name : Normal Butane C/ISOM Grade
 Material : 1012529

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

Emergency telephone:

Health:

866.442.9628 (North America)
 1.832.813.4984 (International)

Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)
 Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
 EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Mexico CHEMTREC 01-800-681-9531 (24 hours)
 South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
 Argentina: +(54)-1159839431

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

SECTION 2: Hazards identification

Classification of the substance or mixture

This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Classification

: Gases under pressure, Liquefied gas
 Flammable liquids, Category 1

Labeling

Symbol(s) :



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Signal Word : Danger

Hazard Statements : H224: Extremely flammable liquid and vapor.
H280: Contains gas under pressure; may explode if heated.

Precautionary Statements : **Prevention:**
 P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
 P233 Keep container tightly closed.
 P240 Ground/bond container and receiving equipment.
 P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
 P242 Use only non-sparking tools.
 P243 Take precautionary measures against static discharge.
 P280 Wear protective gloves/ eye protection/ face protection.
Response:
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage:
 P410 + P403 Protect from sunlight. Store in a well-ventilated place.
Disposal:
 P501 Dispose of contents/ container to an approved waste disposal plant.

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.

SECTION 3: Composition/information on ingredients

Synonyms : Normal Butane
n-Butane

Molecular formula : C₄H₁₀

Component	CAS-No.	Weight %
n-Butane	106-97-8	94 - 100
Isobutane	75-28-5	0 - 6
n-Pentane	109-66-0	0 - 2
Propane	74-98-6	0 - 1

SECTION 4: First aid measures

General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance.

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- If inhaled : Consult a physician after significant exposure. If unconscious, place in recovery position and seek medical advice.
- In case of skin contact : If on skin, rinse well with water. If on clothes, remove clothes.
- In case of eye contact : Flush eyes with water as a precaution. Remove contact 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.

SECTION 5: Firefighting measures

- Flash point : -73 °C (-99 °F)
estimated
- Autoignition temperature : 288 °C (550 °F)
estimated
- Suitable extinguishing media : Alcohol-resistant foam. Carbon dioxide (CO₂). Dry chemical.
- Unsuitable extinguishing media : High volume water jet.
- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. 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.

SECTION 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.

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- 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.
- Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7: Handling and storage**Handling**

- Advice on safe handling : Avoid formation of aerosol. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide 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 : No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

SECTION 8: Exposure controls/personal protection**Ingredients with workplace control parameters****US**

Ingredients	Basis	Value	Control parameters	Note
n-Butane	OSHA Z-1-A	TWA	800 ppm, 1,900 mg/m3	
	ACGIH	STEL	1,000 ppm,	CNS impair, EX,
Isobutane	ACGIH	STEL	1,000 ppm,	CNS impair, EX,
	OSHA Z-1	TWA	1,000 ppm, 2,950 mg/m3	(b),
n-Pentane	OSHA Z-1-A	TWA	600 ppm, 1,800 mg/m3	
	OSHA Z-1-A	STEL	750 ppm, 2,250 mg/m3	
Propane	ACGIH	TWA	1,000 ppm,	
	OSHA Z-1	TWA	1,000 ppm, 1,800 mg/m3	(b),
	OSHA Z-1-A	TWA	1,000 ppm, 1,800 mg/m3	

- (b) The value in mg/m3 is approximate.
 CNS impair Central Nervous System impairment
 EX Explosion hazard: the substance is a flammable asphyxiant or excursions above the TLV ® could approach 10% of the lower explosive limit.

Immediately Dangerous to Life or Health Concentrations (IDLH)

Substance name	CAS-No.	Control parameters	Update

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n-Pentane	109-66-0	Immediately Dangerous to Life or Health Concentration Value 1500 ppm	1995-03-01
Propane	74-98-6	Immediately Dangerous to Life or Health Concentration Value 2100 ppm	1995-03-01

Engineering measures

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

- Respiratory protection : Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as:. Air-Purifying Respirator for Organic Vapors. 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. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.
- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Flame retardant antistatic protective clothing. Workers should wear antistatic footwear.
- Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties****Appearance**

- Form : compressed liquefied gas
- Physical state : Liquid
- Color : Colorless
- Odor : Odorless
- Odor Threshold : No data available

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Safety data

Flash point	: -73 °C (-99 °F) estimated
Lower explosion limit	: 1.5 %(V)
Upper explosion limit	: 9 %(V)
Oxidizing properties	: No
Autoignition temperature	: 288 °C (550 °F) estimated
Thermal decomposition	: No data available
Molecular formula	: C ₄ H ₁₀
Molecular weight	: 58.14 g/mol
pH	: Not applicable
Pour point	: No data available
Freezing point	No data available
Boiling point/boiling range	: -0.56 °C (30.99 °F)
Vapor pressure	: 51.60 PSI at 38 °C (100 °F)
Density	: 2.5 g/l
Water solubility	: Negligible
Partition coefficient: n-octanol/water	: No data available
Viscosity, kinematic	: No data available
Relative vapor density	: 1.2 (Air = 1.0)
Evaporation rate	: > 1

SECTION 10: Stability and reactivity

Chemical stability	: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
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Possibility of hazardous reactions

- Conditions to avoid : Heat, flames and sparks.
- Thermal decomposition : No data available
- Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information**Normal Butane C/ISOM Grade**

Acute oral toxicity : This information is not available.
Negligible or unlikely exposure pathways

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Acute inhalation toxicity : LC50: > 20000 ppm
Exposure time: 4 h
Test atmosphere: gas
Method: Acute toxicity estimate

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Acute dermal toxicity : Negligible or unlikely exposure pathways

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Skin irritation : No skin irritation. Contact with liquid or refrigerated gas can cause cold burns and frostbite.

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Eye irritation : No eye irritation. Contact with liquid or refrigerated gas can cause cold burns and frostbite.

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Sensitization : Does not cause sensitization. Estimated based on individual component values.

Repeated dose toxicity

n-Butane : Species: Rat, Male and female
Sex: Male and female
Application Route: Inhalation
Dose: 0, 1017, 4489 ppm
Exposure time: 90 day
Number of exposures: 6 hr/d, 5 d/wk
NOEL: 4489 ppm

n-Pentane : Species: Rat, Male and female
Sex: Male and female
Application Route: inhalation (gas)
Dose: 0, 5000, 10,000, 20,000 mg/m³
Exposure time: 13 wk
Number of exposures: 6 h/d, 5 d/wk
NOEL: 20,000 mg/m³
Method: OECD Test Guideline 413

Propane : Species: Monkey

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Application Route: Inhalation
 Dose: 0, 750 ppm
 Exposure time: 90 day
 Number of exposures: daily
 NOEL: > 750 ppm

Reproductive toxicity

n-Pentane

: Species: Rat
 Sex: male
 Application Route: Inhalation
 Dose: 0, 5, 10, 20 mg/l
 Exposure time: 13 wk
 Test period: 6hrs/day, 5 days/wk
 NOAEL Parent: 20 mg/l
 no abnormalities observed

Species: Rat
 Sex: female
 Application Route: Inhalation
 Dose: 0, 5, 10, 20 mg/l
 Exposure time: 13 wk
 Test period: 6hrs/day, 5days/wk
 NOAEL Parent: 20 mg/l
 no abnormalities observed

Propane

Species: Rat
 Sex: male and female
 Application Route: Inhalation
 Dose: 0, 1200, 4000, 12000 ppm
 Exposure time: 6 weeks
 Number of exposures: 6 hours/day, 7 days/week
 Test period: 6 weeks
 Test substance: yes
 Method: OECD Guideline 422
 NOAEL Parent: 12000 ppm
 NOAEL F1: 12000 ppm

Developmental Toxicity

n-Pentane

: Species: Rat
 Application Route: Inhalation
 Dose: 0, 1000, 3000, 10000 ppm
 Number of exposures: 6 h/d
 Test period: GD 6-15
 NOAEL Teratogenicity: 10,000 ppm

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Aspiration toxicity : No aspiration toxicity classification.

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Further information : Solvents may degrease the skin.

SECTION 12: Ecological information**Ecotoxicity effects**

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Toxicity to fish : No data available**Toxicity to daphnia and other aquatic invertebrates** : No data available**Toxicity to algae** : No data available

Elimination information (persistence and degradability)

Bioaccumulation

n-Pentane : Accumulation in aquatic organisms is unlikely.

Propane : This material is not expected to bioaccumulate. This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Biodegradability : This material is expected to be readily biodegradable.

Ecotoxicology Assessment

Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Results of PBT assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Additional ecological information : No data available

SECTION 13: Disposal considerations

The information in this SDS 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.

SECTION 14: Transport information**The shipping descriptions shown here are for bulk shipments only, and may not apply to**

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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 SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

UN1011, BUTANE, 2.1

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN1011, BUTANE, 2.1, (-73 °C)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN1011, BUTANE, 2.1

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

UN1011, BUTANE, 2.1, (B/D)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))

UN1011, BUTANE, 2.1

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)

UN1011, BUTANE, 2.1

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information**National legislation**

SARA 311/312 Hazards : Fire Hazard
Sudden Release of Pressure Hazard
Flammable (gases, aerosols, liquids, or solids)
Gases under pressure

CERCLA Reportable Quantity : Calculated RQ exceeds reasonably attainable upper limit.
1,3-Butadiene

SARA 302 Reportable : This material does not contain any components with a SARA

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Quantity 302 RQ.

SARA 302 Threshold Planning Quantity : This material does not contain any components with a section 302 EHS TPQ.

SARA 304 Reportable Quantity : This material does not contain any components with a section 304 EHS RQ.

SARA 313 Ingredients : 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 112 (40 CFR 61).

The following chemical(s) are listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F):

- : n-Butane - 106-97-8
- Isobutane - 75-28-5
- n-Pentane - 109-66-0
- Propane - 74-98-6

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

- : n-Pentane - 109-66-0

US State Regulations**Pennsylvania Right To Know**

- : n-Butane - 106-97-8
- Isobutane - 75-28-5
- n-Pentane - 109-66-0
- Propane - 74-98-6
- 1,3-Butadiene - 106-99-0

New Jersey Right To Know

- : n-Butane - 106-97-8

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Isobutane - 75-28-5
 n-Pentane - 109-66-0
 Propane - 74-98-6

California Prop. 65
 Ingredients

: , which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.
 1,3-Butadiene 106-99-0

WARNING! This product contains a chemical known in the State of California to cause cancer.

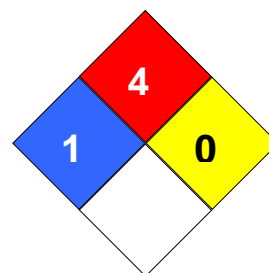
WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

Notification status

Europe REACH : On the inventory, or in compliance with the inventory
 United States of America (USA) : On TSCA Inventory
 TSCA
 Canada DSL : All components of this product are on the Canadian DSL
 Australia AICS : On the inventory, or in compliance with the inventory
 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

SECTION 16: Other information

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

**Further information**

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

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

The information provided in this Safety Data Sheet is correct to the best of our 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.

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Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		