



MATERIAL SAFETY DATA SHEET

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n-Butane

MSDS Number: OKE004

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CHEMICAL PRODUCT AND COMPANY IDENTIFICATION - SECTION 1

Company Identification: ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT:

Call Chemtrec: (800) 424-9300

For additional non-emergency information, call: (888) 417-6275

Product Name: n-Butane

Synonym(s): Butane, C-Grade, D-Grade, Normal

CAS Number: 106-97-8

Chemical Formula: C₄H₁₀

HAZARDS IDENTIFICATION - SECTION 2

A colorless gas with a faint, disagreeable odor.

Severe explosion and fire hazard. Vapors or gases may ignite at distant ignition sources and flash back.

Contact with rapidly expanding gases or liquids can cause frostbite.

This material is classified as hazardous under OSHA regulations.

The following information summarizes human experience and results of scientific investigations reviewed by health professionals for hazard evaluation of and development of Precautionary Measures and Occupational Control Procedures recommended in this document.

Primary Route of Entry: Dermal contact, eye contact, and inhalation.

Medical Conditions Which Might be Aggravated: Central nervous system disorders.

Acute Exposure Effects:

- 1. Skin:** Blisters, frostbite.
- 2. Eyes:** Frostbite, blurred vision and eye damage.
- 3. Inhalation:** Simple asphyxiant, may cause nausea, vomiting, dizziness, tingling sensation, suffocation, convulsions, or coma.
- 4. Ingestion:** Frostbite, although this product is a gas under normal atmospheric conditions and ingestion is unlikely.

COMPOSITION/ INFORMATION ON INGREDIENTS - SECTION 3

<u>Chemical Name</u>	<u>CAS Number</u>	<u>% By Weight</u>
n-Butane	106-97-8	94-100
Isobutane	75-28-5	0-6
Isopentane	78-78-4	0-2
Propane	74-98-6	0-1
Pentane	109-66-0	0-1

Note: These analytical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

FIRST AID MEASURES - SECTION 4

Skin: Wash skin with plenty of soap and water for several minutes. In case of cold burn, immediately place affected area in warm water (105° F) and keep at this temperature until circulation returns. Get medical attention. If clothing becomes wet, drench individual with water and remove contaminated clothing if possible. Slowly warm affected area of skin.

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if eye irritation persists.

Inhalation: If irritation, headache, nausea, or drowsiness occurs, remove to fresh air. Get medical attention if breathing becomes difficult or respiratory irritation persists.

Ingestion: No emergency care anticipated.

FIRE FIGHTING MEASURES - SECTION 5

Flash Point: -76° F (-60° C)

Method: Closed Cup

Auto ignition Temperature: 549° F (287° C)

Method: Not Known

Combustibility: Not Known

Method: N/A

Flammable Limits in Air, % by Volume: LEL: 1.9%

UEL: 8.5%

Extinguishing Media: Carbon dioxide, regular dry chemical, water fog.

Special Fire Fighting Procedures: Cool cylinders/pipelines and surroundings with water from a suitable distance. Excessive pressure may develop if exposed to fire, which may result in explosion, regardless of the content. Firefighters should wear proper protective equipment and a positive pressure self-contained breathing apparatus.

Unusual Fire and Explosive Hazards: Severe explosion and fire hazard. Vapor/air mixtures are explosive. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

ACCIDENTAL RELEASE MEASURES - SECTION 6

Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition. Ventilate closed spaces before entering.

HANDLING AND STORAGE - SECTION 7

Store and handle in accordance with all current regulations and standards. Subject to storage regulations: OSHA 1910.101. Grounding and bonding required. Keep separated from incompatible substances.

EXPOSURE CONTROL/PERSONAL PROTECTION - SECTION 8

<u>Chemical Name</u>	<u>OSHA PEL (ppm)</u>	<u>ACGIH TLV (ppm)</u>	<u>Other</u>
n-Butane	None	800	Narcosis, Asphyxiant
Isobutane	None	800	Narcosis, Asphyxiant
Isopentane	None	600	None
Propane	1000	1000	2100 ppm IDLH
Pentane	1000	120	Ceiling 610, 1500 ppm IDLH

Eye Protection: Wear safety glasses or when using a respirator make sure the mask provides splash and impact protection.

Skin Protection: Wear appropriate gloves.

Respiratory Protection: Positive pressure, full face, air supplied respirator should be used for work within a confined space.

Ventilation: Ensure oxygen content is greater than 18%.

PHYSICAL AND CHEMICAL PROPERTIES - SECTION 9

Appearance: Colorless gas with a faint, disagreeable odor.

Specific Gravity: 0.579 (Water = 1)

Flash Point: -76° F (-60° C)

Auto ignition Temperature: 549° F (287° C)

Flammable Limits in Air, % by Volume: LEL: 1.9% UEL: 8.5%

Solubility in Water (wt. %): 15%

Solubility in Other Solvents: Hydrocarbons, alcohol, ether

Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

STABILITY AND REACTIVITY - SECTION 10

Stability: Stable under normal conditions.

Incompatibility: Oxidizing materials.

Hazardous Decomposition Products: Oxides of carbon.

Hazardous Polymerization: Polymerization will not occur.

TOXICOLOGICAL INFORMATION - SECTION 11

Toxicity: Inhalation, Rat, LC₅₀, 658 gm/m³/4H Inhalation, Mouse, LC₅₀, 680 gm/m³/4H

Teratogenicity: Not established

Reproductive Toxicity: Not established

Mutagenicity: Not established

Synergistic Products: Not established

Sensitization to Product: Not established

Carcinogenicity: Contains > 0.1% by weight of a material listed as a potential carcinogen by:

NTP
No

IARC
No

OSHA
No

Other Chronic Effects: Not Determined

Signs and Symptoms of Overexposure: May cause nausea, vomiting, dizziness, or tingling sensations.

ECOLOGICAL INFORMATION - SECTION 12

No data is available on the adverse effects of this material on the environment. Neither COD nor BOD data are available.

DISPOSAL CONSIDERATIONS - SECTION 13

Dispose of container and unused contents in accordance with federal, state and local requirements.

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TRANSPORT INFORMATION - SECTION 14

DOT

Proper Shipping Name: Butane
Hazard Class/I.D. No./Packing Group: 2.1, UN 1011
Label: Flammable Gas

or

Proper Shipping Name: Petroleum Gases, Liquefied
Hazard Class/I.D. No./Packing Group: 2.1, UN 1075
Label: Flammable Gas

I.M.O.

Proper Shipping Name: Butane
Hazard Class/I.D. No./Packing Group: 2.1, UN 1011
Label: Flammable Gas

I.C.A.O./I.A.T.A.

Proper Shipping Name: Butane
Hazard Class/I.D. No./Packing Group: 2, UN 1011
Label: Flammable Gas

REGULATORY INFORMATION - SECTION 15

TSCA Inventory: Yes
Reportable Quantity (RQ) Under US EPA CERCLA Regulations: Not listed

SARA Hazard Notification Hazard Categories Under Criteria of SARA Title III Rules

(40 CFR Part 370): Yes
Section 313 Toxic Chemical(s): No
Hazardous Chemical(s) Under OSHA Hazard Communication Standard: Yes

OTHER INFORMATION - SECTION 16

Hazard Ratings:

NFPA	HMIS
Health -- 1	Health -- 1
Fire -- 4	Flammability -- 4
Reactivity -- 0	Reactivity -- 0
Specific Hazard -- N/A.	PPE -- None

To the best of our knowledge, the information contained herein is accurate. However, neither ONEOK, Inc. nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.