



**MATERIAL SAFETY DATA SHEET (MSDS)
BUTANE PLUS**

IDENTITY (As Used on Label and List) Butane Plus, Butane +, C4 Plus, C4+ (DOT ID No: 1011 n-butane or UN 1075)	(Hazard Rating: Health-1/Fire-4/Reactivity-0) DOT Hazard Classification: 2.1 (Flammable Gas)
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Section I – Chemical Product and Company Identification

Manufacturer's Name MARKWEST	Emergency Phone Number Markwest (800) 730-8388 / CHEMTREC (800) 424-9300
Address (Number, Street, City, State and ZIP code) 1515 Arapahoe Street	Telephone Number for Information: (800) 730-8388
Tower 1, Suite 1600	Date Prepared June 21, 2011
Denver, Colorado 80202-2126	Signature of Preparer (optional) N/A

Section II – Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name (s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
N - Butane (106-97-8)	800 ppm	800 ppm		30 – 35%
Isobutane (75-28-5)	800* ppm			25 – 35%
Isopentene (563-45-1)	N/A			12%
N - Pentane	600 ppm	600 ppm	750 ppm	8%
N - Hexane	50 ppm	50 ppm		2%
2 - methylpentane	N/A	N/A		3%
3 – methylpentane	N/A	N/A		2%
Methylcyclopentane	N/A	N/A		1%
Benzene	1 ppm	0.5 ppm	2.5/5.0 ppm	0.6 %
Trace Hydrocarbons (N/A)	N/A	N/A		1%

Section III – Physical/Chemical Characteristics

Boiling Point -12° C	Specific Gravity (H ₂ O = 1): ~ 0.58 @ 0° C
Vapor Pressure (Reid)n-Pentane: 240 mm Hg at 20°C	Melting Point: N/A
Vapor Density (AIR = 1): ~ 2.0	Evaporation Rate (Butyl Acetate = 1): > 1
Solubility in Water: Negligible	
Appearance and Odor: Colorless liquid under pressure. Faint hydrocarbon odor.	

<p>Health Hazards (Acute or Chronic): Mildly toxic by inhalation, can cause drowsiness or asphyxia following exposures to high concentrations. This product contains trace amounts of benzene, which can cause degeneration in blood forming organs leading to anemia which may further degrade to leukemia. Isobutane and n-butane have been shown to cause mild cardiac sensitization in laboratory test animals.</p>							
Carcinogenicity Mixture:	N/A	NTP?	N/A	IARC Monographs?	N/A	OSHA Registered	N/A
Carcinogenicity Benzene:		NTP?	Yes	IARC Monographs?	Yes	OSHA Registered	Yes
<p>Signs and Symptoms of Exposure: Drowsiness, narcosis and asphyxia.</p>							
<p>Medical Conditions Generally Aggravated by Exposure: Personnel with pre-existing chronic respiratory diseases should avoid exposure to this material.</p>							
<p>Emergency and First Aid Procedures:</p> <p>Eyes: Rinse immediately with water. Remove contact lenses. Flush with water for 10-15 minutes. Consult a physician.</p> <p>Skin: Warm frostbite areas gradually and get medical help if there is evidence of tissue damage.</p> <p>Swallowed: Rinse mouth with water. Drink 1-2 glasses of milk or water. Do not induce vomiting unless directed by a physician.</p> <p>Inhaled: Remove patients to fresh air. If breathing has stopped, restore breathing at once. Administer oxygen and get medical help.</p>							
<p>Section VII – Precautions for Safe Handling and Use</p>							
<p>Steps to be taken in Case Material is Released or Spilled: Isolate spill or leak area immediately for at least 160 to 300ft in all directions. Keep unauthorized personnel away. Eliminate sources of heat or ignition including internal combustion engines and power tools. Stop gas flow. If indoors, ventilate the affected area. Evacuate building and all affected area, downwind area first. Note: Large releases may require the notification of local emergency response agencies. Wear self-contained breathing apparatus if conditions warrant.</p>							
<p>Waste Disposal Method: Land disposal or burial (sanitary landfill)</p>							
<p>Precautions to Be Taken in Handling and Storing: Butane can be stored in liquid form under its vapor pressure at ambient temperatures, or refrigerated liquid can be stored at atmosphere pressure. Store and use Gas cylinders and tanks in well-ventilated areas, away from direct sunlight and sources of ignition. No smoking in areas of storage or use. Electrically bond all lines and equipment. Keep away from incompatible agents and from cylinders of oxygen.</p>							
<p>Other Precautions: N/A</p>							
<p>Section VIII – Control Measures</p>							
<p>Respiratory Protection (Specify Type): Wear positive pressure self-contained breathing apparatus.</p>							
Ventilation:	Local Exhaust	Essential in work areas to prevent accumulation of explosive mixtures.			Special		
	Mechanical (General)	Essential in work areas to prevent accumulation of explosive mixtures.			Other If mechanical ventilation is used, electrical equipment must meet N.E.C. requirements.		
Protective Gloves Rubber gloves				Eye Protection Safety goggles			

Other Protective Clothing or Equipment:

Wear thermal protective clothing when handling refrigerated liquids. Clothing that becomes wet should immediately removed due to its flammability hazard.

Work/Hygienic Practices

Quick trench facilities and/or eye washing fountains should be provided within the immediate work area for emergency use.

N/A – Not Applicable

N/D – Not Determined

~ -- Approximately

* -- Based on LP (Gas)