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Revision Date: 03/14/2015**Product: NIP-32 (BUTANE)****1. Chemical Product and Company Identification****Trade Name of this Product P31(BUTANE)****cas registry # : Iso-butane 75-28-5 N-butane 106-97-8****Propane 74-98-6****2. Composition and Information on Ingredients**

Ingredient	Weight %	chemical formula	ACGIH TLV	PEL(weight%)	STEL
N-butane	58	C ₄ H ₁₀		52-69	
Iso-butane	33	C ₄ H ₁₀		23-38	
Propane	9	C ₃ H ₈		8-10	

3. Hazard Identification

- * **WARNING:** Flammable Liquid and Vapor. The Flash Point is <100degrees F. * This product is a clear, water-white, light hydrocarbon liquid.
- * It has a slight solvent petroleum odor. The product floats on water.
- * When burned the product produces carbon monoxide and other asphyxiants during combustion
- * Harmful if inhaled and may cause delayed lung injury.
- * Aspiration hazard if swallowed - can enter lungs and cause damage.
- * Keep away from heat, sparks, and flame.
- * Avoid breathing vapor. Use ventilation to keep vapor below exposure limits.
- * Avoid contact with eyes, skin and clothing. Material splashed into the eyes will irritate tissues. Gently flush material from eyes with clean water.
- * Unprotected exposure to this product will cause skin dryness.
- * Remove product soaked clothing and wash with mild soap.
- * As with any petroleum product, avoid mixing this product with strong oxidizers.
- * This product is not listed on the NTP, IARC, OSHA, or ACGIH lists of suspected/confirmed carcinogens.
- * This product may be toxic to fish, birds and other wildlife as a result of exposure to quantities above minimum levels
- * This product is readily biodegradable in the presence of air and sunlight.
- * Spilled material is slippery and may cause falls.

POTENTIAL HEALTH EFFECTS**PRIMARY ROUTE(S) OF INHALATION.**

EYES

Tests on similar materials suggest irritation is expected from direct contact and without immediate treatment of flushing eyes with clean water

SKIN

Tests on similar materials indicate some irritation is expected to occur upon short-term exposure, possible dermatitis and frostbite on prolonged contact.

INGESTION

Small quantities of product that may be ingested may not cause harm to the ingestion and digestive systems, but may cause associated harm with the respiratory system during ingestion (see INHALATION health effects in this section). Significant quantities of ingestion of this product may result in nausea, diarrhea and other related digestive abnormalities, as well as, a very high potential of inhalation hazards and their related symptoms that are considered acute (see INHALATION health effects in this section).

INHALATION

ACUTE ASPIRATION HAZARD -- Tests on similar material indicate the possibility of the following symptoms from intentional significant inhalation: headache, nasal and respiratory irritation, nausea, drowsiness, breathlessness, fatigue, central nervous system depression, convulsions, and loss of consciousness.

CHRONIC (CANCER INFORMATION)

Prolonged contact with this material may produce skin irritation and inflammation.

Carcinogen listed by: National Toxicology Program (No)

CHRONIC (CANCER INFORMATION) - Continued

A. R. C. (NO)

SHA NO)

CGIH (NO)

This product does not require a cancer hazard warning in accordance with the OSHA Hazard Communication Standard.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Personnel with pre-existing skin disorders should avoid direct extended contact of the skin with the liquid form of this product.

4. FIRST AID INFORMATION

EYES

Flush eyes immediately with water for at least 15 minutes or until irritation subsides, occasionally lifting lower and upper lids. Get medical attention promptly.

SKIN

Wash thoroughly with soap and water. Immediately remove contaminated clothing and wash before reuse. If irritation or rash develops, obtain medical assistance. Immediately remove soaked clothing.

INGESTION

CALL PHYSICIAN IMMEDIATELY. Do not induce vomiting except at the instruction of a physician. Never give anything by mouth to an unconscious person.

INHALATION

Remove patient to fresh air and consult a physician. If breathing is difficult give oxygen. If not breathing give artificial respiration.

5. Fire Fighting Measures

FLAMMABLE PROPERTIES

FLASH POINT: <0°F Tag Closed Cup

AUTOIGNITION: Not Available.

FLAMMABILITY CLASS: IA

LOWER EXPLOSIVE LIMIT (%): 1.8

UPPER EXPLOSIVE LIMIT (%): 9.5

FIRE AND EXPLOSION HAZARDS

Can form flammable mixtures with air and flash at room temperature or upon a light heat application. Vapors are heavier than air and may travel considerable distance. Explosion hazard in confined spaces if exposed to ignition source. Mists or sprays may be flammable below fluid's normal flash point. Keep away from heat or open flame.

EXTINGUISHING MEDIA

Dry Chemical, carbon dioxide, and foam. NOTE: Water, fog and foam may cause frothing and spattering. Water stream may spread fire.

FIRE FIGHTING INSTRUCTIONS

Use water to cool containers exposed to flames. Do not enter enclosed or a confined workspace without proper protective equipment. Fire fighting personnel should wear respiratory protection (positive pressure if available). If leak or spill has not ignited, use water spray to disperse the vapors. Products of combustion include fumes, smoke and carbon monoxide.

6. Accidental Release Measures

Evacuate area and shut off ignition source. Contain spill and keep from entering waterways or sewers. Use personal protective equipment. Advise EPA; state agency if required. Absorb on inert material. Shovel, sweep or vacuum spill and place in closed container for disposal.

7. Handling and Storage

HANDLING: Keep product away from high energy ignition sources, heat, sparks, pilot lights, static electricity, and open flame. Avoid prolong and excessive contact with skin. Avoid inhalation of vapors or mists. Use in well ventilated area away from all ignition sources. See Section 8 for additional personal protection advice when handling this product.

STORAGE: Store in a cool area. Store as OSHA Class IA flammable liquid

SPECIAL PRECAUTIONS: To prevent and minimize fire or explosion risk from static accumulation and discharge, effectively bond and/or ground product transfer system. Electrical equipment and fittings must comply with local fire prevention regulations for this class of product Use the correct grounding procedures. Refer to national or local regulations covering safety at petroleum handling and storage areas for this product.

EMPTY CONTAINER WARNING: Empty containers normally retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to refill or clean container since residue may be difficult to remove. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

HYGIENIC PRACTICES

Wash hands with soap and water before eating, drinking, smoking or use of toilet facilities. Do not use harsh abrasive skin cleaners for washing exposed skin areas.

8.Exposure Controls and Personal Protection in Industrial Applications and Environments

ENGINEERING CONTROLS

Use adequate ventilation to keep fluid mists of this material below applicable standard(s).

EYE/FACE PROTECTION

Safety gasses, splash goggles, or face shield as appropriate. Have suitable eye wash water available.

SKIN PROTECTION

Avoid prolonged and/or repeated skin contact. If prolonged contact cannot be avoided, wear protective impervious gloves and clothing. Acceptable materials for gloves are neoprene, nitrile, viton and other elastomeric chemical exposure protection materials; refer to glove manufacture use information to assure proper protection.

RESPIRATORY PROTECTION

Up to 1000 ppm, half mask organic vapor respirator. Up to 5000 ppm full face organic vapor respirator or full face supplied air respirator. Greater than 5000 ppm fire fighting, or unknown concentration, self contained breathing apparatus with positive

pressure should be used.

OTHER/GENERAL PROTECTION

If there is a likelihood of splashing, oil resistant clothing should be worn. Never wear oil soaked clothing. Launder or dry clean before wearing. Discard oil soaked shoes. Affix warning labels on containers in accordance with 29 CFR 1910.1200 (Hazard Communication Standard).

Main local or dilution ventilation to keep air concentration levels below 100 ppm. Loading, unloading, tank gauging, etc. remain upwind. Request assistance of safety and industrial hygiene personnel to determine air concentrations.

9. Physical and Chemical Properties

APPEARANCE

Clear liquid.

ODOR

Slight petroleum solvent odor

ODOR THRESHOLD

N.D.

BASIC PHYSICAL PROPERTIES

PHYSICAL STATE: Liquid

BOILING POINT: +9.6-31.1 F

MELTING POINT: -159°C

VAPOR PRESSURE: 29~33psi.

VAPOR DENSITY (AIR=1): Not Available.

SPECIFIC GRAVITY @ 70°F(H₂O=1): 0.57

MOLECULAR WEIGHT: 56.5

SOLUBILITY (H₂O): negligible in water

PERCENT VOLATILES: 100%

VISCOSITY: Not Available.

Physical data may vary slightly to meet specifications.

0. Stability and Reactivity

STABILITY

Stable

CONDITONS TO AVOID

Any source of ignition or heat

INCOMPATIBLE MATERIALS

Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS

Incomplete combustion may produce fumes, smoke, carbon monoxide and other asphyxiants.

HAZARDOUS POLYMERIZATION

Polymerization will not occur

11. Toxicological Information

Skin effects

May cause irritation or dermatitis with prolonged and repeated contact.

Medical conditions aggravated by overexposure

Dermatitis and sensitive skin - this product is not listed as carcinogenic or a potential carcinogen by the national toxicology program, by the I.A.R.C. monographs or by OSHA. Nevertheless, good hygienic practices are recommended.

12. Ecological Information

This product is rapidly biodegradable. Biodegradation is possible within 90 to 120 days in aerobic environments at temperatures above 70o F (21 °C) and tends to evaporate readily in normal environmental conditions.

If directly applied in liquid form to leaves and other types of vegetation, this product may interfere with normal grow and life plants with transpiration and respiration.

This product is not toxic to fish but may coat gill structures resulting in suffocation if significant quantities are spilled in shallow, running water. Product may be moderately toxic to amphibians by preventing dermal respiration. This product may cause gastrointestinal distress to birds and mammals through ingestion during pelage grooming.

13. Disposal Considerations

Product as supplied does not meet the characteristics of a hazardous waste as defined in 40 CFR 261.21-24. If mixed with other products, waste mixture must be characterized. DO NOT dispose of this product in drains or storm sewers. DO NOT dispose of this product in a landfill without prior solidification. Waste product should be recycled when possible and through an authorized recycling agent and in compliance with national, state and local regulations.

14. Transportation Information

Petroleum gases, liquefied
2.1, flammable gas, un1965
Labeled / placarded flammable gas
Dot shipping label: dot hazardous material

15. Regulatory Information

The ingredients listed in section 2 are reported/included in the u.s. TSCA inventory and Canadian domestic substance list.

This product is defined by OSHA in 29 CFR 1910.1200(c) as a flammable gas. Use of this product may require compliance with 29 CFR 1910.119, process safety management of highly hazardous chemicals.

CANADIAN REGULATORY INFORMATION

The components of this product are listed on the Canadian (DSL) Domestic Substances List.

STATE LIST DATA - This product contains chemicals, which are on the following state lists:

Florida Toxic Substance

Massachusetts Hazardous Substance

Pennsylvania Hazardous Substance

Minnesota Hazardous Substance

New Jersey RTK Hazardous Substance

New York List of Hazardous Substances

Washington Air Contaminant

16. Other Information

SUPERCEDES MSDS DATED

New MSDS

The data in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material in any process. The information set forth herein is furnished free of charge and is based on technical data that the supplier believes to be reliable. It is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside of the supplier's control, the supplier makes no warranties, expressed or implied, and assumes no liability in connection with any use of this information. Nothing herein is to be taken as a license to operate under, or a recommendation to infringe upon, any patents.