Bushehr Petrochemical Company
Safety Data Sheets

Section 1: Identification

Product Name: C5+
Chemical Name/Synonyms: Pentane +
CAS-No: Mixture
Company: BUPC (Bushehr Petrochemical Company)

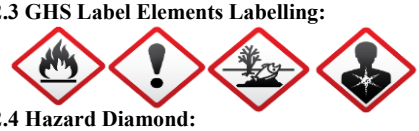
Section 2: Hazard(s) Identification

2.1 GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):
H224 - Extremely flammable liquid and vapor.
H336 - May cause drowsiness or dizziness.
H401 - Toxic to aquatic life.
H411 - Toxic to aquatic life with long lasting effects.

2.2 Precautionary Statement Codes:
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, and lighting equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P261 - Avoid breathing vapors, mist, or spray.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P280 - Wear eye protection, protective clothing, protective gloves.
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - If inhaled: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P312 - Call a poison center or doctor if you feel unwell.
P370+P378 - In case of fire: Use appropriate media (see section 5) to extinguish.
P391 - Collect spillage.
P403+P233+P235 - Store in a well-ventilated place. Keep container tightly closed. Keep cool.
P405 - Store locked up

The corresponding statement to each P-code can be found at the GHS Classification.

2.3 GHS Label Elements Labelling:



2.4 Hazard Diamond:
Health :1
Flammability:4
Physical Hazard:0
Specefic Hazard : -

2.5 Other Hazards:

Section 3: Composition/information on ingredients

3.1 Substance
N.A

3.2 Mixture

Name	CAS NO	WT%	Classification(GHS)
Total Butane	106-97-8	1%	H220,H280 P203,P210,P222,P280, P377,P381,P403,P410+P403
Total Pentane	109-66-0	94-97%	H411,H401,H336,H224 P210,P233,P240,P241,P242,P243, P261,P271,P273,P280,P303
C6+	Mixture	2-5%	*

Section 4: First-Aid Measures

4 Description of First Aid Measures

4.1 After Inhalation :

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

4.2 In case of Skin contact :

Obtain medical attention if irritation persists. Thaw frosted parts with lukewarm water. Do not rub affected area. Wash contaminated clothing before reuse. Consult a physician.

4.3 After Eye contact:

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

4.4 After Swallowing:

Do NOT induce vomiting. Give one or two glasses of water to drink. Refer immediately for medical. attention.

Section 5: Fire-Fighting Measures

5.1 Extinguishing media:

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture:

Fire Hazard: Extremely flammable liquid and vapor.

Explosion Hazard: May form flammable/explosive vapor-air mixture. Heating may cause an explosion. Heat may build pressure,
rupturing closed containers, spreading fire and increasing risk of burns and injuries.

Reactivity: Reacts with (strong) oxidizers: (increased) risk of fire.

5.3 Advice for firefighters:

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

5.4 Other data

Do not allow run-off from fire fighting to enter drains or water courses.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Clean up promptly by sweeping or vacuum.

Section 7: Handling and storage

7.1 Precautions for safe handling

Additional Hazards When Processed: Handle empty containers with care because residual vapors are flammable. Do not pressurize, cut, or weld containers. Do not puncture or incinerate container.

Precautions for Safe Handling: Keep away from heat, sparks, open flames, hot surfaces. - No smoking. Avoid breathing gas, vapors, mist, spray. Use only outdoors or in a well-ventilated area.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Do not eat, drink or smokewhen using this product.

7.2 Conditions for safe storage, including any incompatibilities

Technical Measures: Proper grounding procedures to avoid static electricity should be followed. Comply with applicable regulations. Use explosion proof equipment.

Storage Conditions: Keep/Store away from direct sunlight, extremely high or low temperatures, ignition sources, heat, combustible materials, incompatible materials. Keep in fireproof place. Store in a well-ventilated place. Keep container tightly closed.

Storage Area: Store in a well-ventilated place. Store locked up.

Section 8: Exposure Controls/Personal Protection

8.1 Exposure parameters

Chemical Name	TLV	Celling	TWA	STEL	IDLH
Total Butane	No data available	No data available	1000 ppm	1000 ppm	1600 ppm
Total Pentane	1000 ppm	No data available	1000 ppm	No data available	1500 ppm
C6+	No data available	No data available	No data available	No data available	No data available

8.2 General protective and hygienic measures:

Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Do not eat, drink or smokewhen using this product.

8.3 Breathing equipment:

Use a NIOSH-approved self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

8.4 Protection of hands:

Wear chemically resistant protective gloves. Insulated gloves.

8.5 Eye protection:

Chemical goggles or face shield.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Form: Liquid

Odor: Distinct hydrocarbon/gasoline odor.

Odor threshold: No data available.

PH: No data available.

Melting point/melting range: -129.67 °C

Boiling point/boiling range: 36.06 °C

Flash point: -40 °C

Evaporation rate: No data available.

Flammability: Flammable liquid - category 2

Upper flammability or explosive limits: 7.8%

lower flammability or explosive limits: 1.5%

Autoignition temperature: No data available.

Danger of explosion: Vapor explosion hazard indoors, outdoors or in sewers.

Vapor pressure:514 mm Hg at 25 °C

Vapor density: 2.48 (Air = 1)

Relative density: (water = 1): 0.63

Solubility in/Miscibility with water: Miscible with ethanol, ethyl ether, acetone, benzene, chloroform; soluble in carbon tetrachloride / in water, g/100ml at 20 °C: 0.004 (very poor).

9.2 Other data

Section 10: Stability and Reactivity

10.1 Reactivity:

Hazardous reactions will not occur under normal conditions.

10.2 Chemical stability:

Extremely flammable liquid and vapor. May form flammable/explosive vapor-air mixture.

10.3 Conditions to avoid:

Direct sunlight, extremely high or low temperatures, ignition sources, combustible materials, incompatible materials, Sparks, Heat, Direct sunlight, Overheating, Open flame.

10.4 Incompatible materials:

Strong acids, Strong bases, Strong oxidizers, Halogens, Chlorine.

10.5 Hazardous decomposition products:

Carbon oxides (CO, CO2), Hydrocarbons, May release flammable gases.

Section 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity:

Toxic if inhaled.

Skin: Redness, pain, swelling, itching, burning, dryness, and dermatitis. Contact with the liquid may cause cold burns/frostbite.

Eye: Redness, pain, swelling, itching, burning, tearing, and blurred vision. Contact with the liquefied gas causes frostbite.

Inhalation: May cause drowsiness or dizziness.

Ingestion: Ingestion may cause nausea, vomiting and diarrhea.

Carcinogenic effects: No data available.

Reproductive toxicity: No data available.

Target organs: Skin,Respiratory System,Central Nervous System,cardiovascular system

11.2 Further information:

Pentane is a central nervous system depressant and can cause loss of consciousness and coma at high doses. Ingestion may cause pulmonary toxicity due to pentane aspiration, including chemical pneumonitis, acute lung injury, and hemorrhage. Cardiovascular effects may include ventricular dysrhythmias and sudden death.

Section 12: Ecological Information

12.1 Toxicity

Total Butane

LC50 Rat inhalation 658 mg/l/4 hr

LC50 Mouse inhalation 680 mg/l/2 hr

Total Pentane

LD50: 446 mg/kg (Intravenous, Mouse) (T14)

LC50: 364 g/m3 over 4 hours (Inhalation, Rat) (T14)

C6+

No data available.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

Pentane+ is expected to have high mobility in soil.

12.5 Results of PBT and vPvB assessment

Not applicable.

12.6 Other adverse effects

Section 13: Disposal Considerations

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

Additional Information: Empty gas cylinders should be returned to the vendor for recycling or refilling. Handle empty containerswith care because residual vapors are flammable.

Section 14: Transport Information

14.1 DOT regulations:

UN Number : 1108

Proper Shipping Name: Pentane +

Class or Division: 3

Hazard class:UN Hazard Class: 3

Section 15: Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

No data available.

15.2 Chemical Safety Assessment

No data available.

Section 16: Other Information

Methods of Dissemination:

No data available.

Toxic Combustion Products:

Hazardous decomposition products formed under fire conditions. -Carbon oxides.

Other Hazardous Reactions:

No further information available.

The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its affiliates or 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 chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our SDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated SDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, face mask, fume hood).