PRIMUS

SAFETY DATA SHEET

according to Regulation (EU) No. 453/2010

Primus Power Gas / Primus Summer Gas / Primus Winter Gas

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product code	2202, 2206, 2207
Synonyms	None.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Preparation	Fuel

1.3. Details of the supplier of the safety data sheet

Company/Undertaking Identification	Primus AB Box 6041 SE-171 06 SOLNA, Schweden www.primus.se Telefon +46-8-564 842 30 Telefax +46-8-564 842 40 info@primus.se
1.4. Emergency telephone number	+46-8-564 842 30
Issuing date	01.06.2015
Version	GHS 3

2. Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 (GHS/CLP)	Flammable gases, Cat. 1, H220 Compressed gas, H280
Additional information	For the full text of the phrases mentioned in this Section, see Section 16.

2.2. Label elements

Signal Word	Danger
Hazard Statements	H220: Extremely flammable gas. H280: Contains gas under pressure; may explode if heated.
Precautionary statements	P101: If medical advice is needed, have product container or label at hand. P102: Keep out of reach of children. P210b: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381: Eliminate all ignition sources if safe to do so. P410+P403: Protect from sunlight. Store in a well-ventilated place.
Additional advice	None.
GHS product identifier	Hydrocarbons, C3-4-rich, petroleum distillate (<0.1% 1,3-butadiene), CAS-No. 68512-91-4, EC-No. 270-990-9
2.3. Other hazards	Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50 °C. Also after use, do not open with force or burn. Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking. Keep away from children.

3. Composition/information on ingredients

Chemical characterization	Extremely flammable liquefied gas.

Components		CLP Classification	Product identifier
Hydrocarbons, C3-4-rich, petroleum distillate (<0.1% 1,3-butadiene)	100 %	Flam. Gas 1 H220, Press. Gas H280	CAS-No.: 68512-91-4 EC-No.: 270-990-9
Furan-2-methanthiol	20 ppm	Flam. Liq. 3 H226	CAS-No.: 98-02-2 EC-No.: 202-628-2
Propane		Flam. Gas 1 H220, Press. Gas H280 , Notes U	CAS-No.: 74-98-6 EC-No.: 200-827-9 Index-No: 601-003-00-5
Butane		Flam. Gas 1 H220, Press. Gas H280 , Notes C U	CAS-No.: 106-97-8 EC-No.: 203-448-7 Index-No: 601-004-00-0
Isobutane		Flam. Gas 1 H220, Press. Gas H280	CAS-No.: 75-28-5 EC-No.: 200-857-2

For the full text of the phrases mentioned in this Section, see Section 16.

Hazardous impurities None known.

4. First aid measures

4.1. Description of first aid measures

Inhalation Move to fresh air. Oxygen or artificial respiration if needed. Medical examination necessary even only on suspicion of intoxication. Persons who have inhaled the gas or fumes produced in a fire or who have come into contact with the substance may not show immediate symptoms. They should be taken to a doctor with this card. Patient must be kept under medical supervision for at least 24 hours.

Skin contact May cause frostbite. Wash off immediately with plenty of water. Remove contaminated clothing and shoes. Consult a physician for severe cases.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

Ingestion Rinse mouth. Drink 1 or 2 glasses of water. Do not induce vomiting. Medical examination necessary even only on suspicion of intoxication.

4.2. Most important symptoms and effects, both acute and delayed Contact can cause cold burns, frostbite and/or chemical burns with severe skin damage. Symptoms of poisoning may only appear several hours later. Inhalation may provoke the following symptoms: Asphyxia.

4.3. Indication of any immediate medical attention and special treatment needed Artificial respiration and/or oxygen may be necessary.

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Carbon dioxide (CO_2). Water mist
Extinguishing media which must not be used for safety reasons	High volume water jet.
5.2. Special hazards arising from the substance or mixture	Extremely flammable. Pay attention to the spreading of gases especially at ground level (heavier than air) and to the direction of the wind. Closed containers may explode due to pressure build-up when subjected to excessive heat or intense fire.

5.3. Advice for firefighters

Special protective equipment for firefighters	In the event of fire, wear self-contained breathing apparatus. Complete suit protecting against chemicals.
Specific methods	Do not use a solid water stream as it may scatter and spread fire. Water mist may be used to cool closed containers. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel	Use personal protective equipment. Avoid contact with skin and eyes. Remove all sources of ignition. Pay attention to flashback. Pay attention to the spreading of gases especially at ground level (heavier than air) and to the direction of the wind.
Advice for emergency responders	Keep people away from and upwind of spill/leak. Remove all sources of ignition. Pay attention to flashback. Ventilate the area. Pay attention to the spreading of gases especially at ground level (heavier than air) and to the direction of the wind.
6.2. Environmental precautions	No special environmental precautions required.
6.3. Methods and material for containment and cleaning up	Ventilate the area.
6.4. Reference to other sections	See chapter 8 and 13.

7. Handling and storage

7.1. Precautions for safe handling

Wear personal protective equipment. Provide appropriate exhaust ventilation at machinery. Keep away from heat and sources of ignition. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50 °C.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool and shaded area. Store in a place accessible by authorized persons only. Keep away from heat. Keep away from direct sunlight.

7.3. Specific end use(s)

See chapter 13.

8. Exposure controls/personal protection

8.1. Control parameters

Exposure limit(s)

This information is not available.

Propane (CAS 74-98-6)	
Ireland - Occupational Exposure Limits - TWAs	1000 ppm TWA
Ireland - Occupational Exposure Limits - STELs	3000 ppm STEL (calculated)
Butane (CAS 106-97-8)	
Ireland - Occupational Exposure Limits - TWAs	1000 ppm TWA
Ireland - Occupational Exposure Limits - STELs	3000 ppm STEL (calculated)
United Kingdom - Workplace Exposure Limits (WELs) - STELs	750 ppm STEL 1810 mg/m3 STEL
United Kingdom - Workplace Exposure Limits (WELs) - TWAs	600 ppm TWA 1450 mg/m3 TWA

8.2. Exposure controls

Occupational exposure controls

Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation, especially in confined areas. General industrial hygiene practice.

Personal protection equipment

Respiratory protection

In case of good ventilation no personal respiratory protective equipment required. In case of insufficient ventilation wear suitable respiratory equipment. Respirator with filter for organic vapour

Hand protection

No special measures required.

Eye protection

Safety glasses with side-shields.

Skin and body protection

Long sleeved clothing.

Thermal hazards

Keep product and empty container away from heat and sources of ignition.

Environmental exposure controls No special measures required.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Compressed liquefied gas.
Colour	Colourless.
Odour	Characteristic.
Odour Threshold	No information available.
pH:	No information available.
Melting point/range:	No information available.
Boiling point/range:	-15 °C at atmospheric pressure
Flash point:	No information available.
Evaporation Rate:	No information available.
Flammability:	No information available.
Explosion limits:	1.8 % - 10.2 %
Vapour pressure:	2.8 bar @ 15 °C / 8.3 bar 50 °C
Vapor density:	No information available.
Relative density:	0.5 kg/l @ 20 °C
Water solubility:	No information available.
Partition coefficient (n-octanol/water):	No information available.
Autoignition temperature:	400 °C
Decomposition temperature:	No information available.
Viscosity:	No information available.
Combustion/explosion hazards:	Liquefied gas under pressure, flammable
Oxidizing properties:	None

9.2. Other information

General Product Characteristics No information available.

10. Stability and reactivity

10.1. Reactivity Risk of receptacle bursting.

10.2. Chemical stability Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions No information available.

10.4. Conditions to avoid Heat, flames and sparks. Temperatures above 50 °C.

10.5. Incompatible materials None.

10.6. Hazardous decomposition products Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity	**Hydrocarbons, C3-4-rich, petroleum distillates (CAS 68512-91-4)** Inhalation LC50 Rat = 658 mg/L 4 h(IUCLID) **Propane (CAS 74-98-6)** Inhalation LC50 Rat = 658 mg/L 4 h(IUCLID) **Butane (CAS 106-97-8)** Inhalation LC50 Rat = 658 g/m3 4 h(NLM_CIP) **Isobutane (CAS 75-28-5)** Inhalation LC50 Rat = 658 mg/L 4 h(IUCLID)
Skin corrosion/irritation	No skin irritation.
Serious eye damage/eye irritation	No eye irritation.
Respiratory / Skin Sensitisation	None.
Carcinogenicity	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Classification not possible from current data.
Reproductive toxicity	Classification not possible from current data.
Specific target organ toxicity (single exposure)	No data available.
Specific target organ toxicity (repeated exposure)	No data available.
Aspiration hazard	No data available.
Human experience	No data available.
Information on likely routes of exposure	inhalativ
Symptoms related to the physical, chemical and toxicological characteristics	Contact can cause cold burns, frostbite and/or chemical burns with severe skin damage. Inhalation may provoke the following symptoms: Tiredness Drowsiness
Other information	Gas reduces oxygen available for breathing.

12. Ecological information

12.1. Toxicity	No data is available on the product itself.
12.2. Persistence and degradability	The product is degraded in the atmosphere.
12.3. Bioaccumulative potential	Bioaccumulation is unlikely.

12.4. Mobility in soil	May evaporate quickly. Decomposes rapidly in contact with light.
12.5. Results of PBT and vPvB assessment	No information available.
12.6. Other adverse effects	No information available.

13. Disposal considerations

13.1. Waste treatment methods

Waste from residues / unused products	EWC waste disposal No: 16 05 04 - Gase in Druckbehältern. Dispose of as hazardous waste in compliance with local and national regulations. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50 °C.
Contaminated packaging	Dispose of as unused product. Container hazardous when empty.

14. Transport information

ADR/RID	Proper shipping name RECEPTACLES, SMALL, CONTAINING GAS UN No 2037. Class 2. ADR/RID-Labels 2.1. Classification code 5F. Risk No. 23. Limited quantity 120 ml. Tunnel code D
IMDG	Proper shipping name Receptacles, small, containing gas without a release device, non refillable UN No 2037. Class 2. Packing group -. IMDG-Labels 2.1. Limited quantity Siehe SV277. Marine Pollutant no
IATA	Proper shipping name Receptacles, small, containing gas (flammable) without a release device, non-refillable UN No 2037. Class 2.1. IATA label 2.1. Packing instruction (passenger aircraft): 203 (1 kg). Packing instruction (LQ): –. Packing instruction (cargo aircraft): 200 (15 kg).
Further Information	None.

15. Regulatory information

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

Regulatory Information	The product is classified and labelled according to Regulation (EC) No. 1272/2008 (GHS/CLP).

Hydrocarbons, C3-4-rich, petroleum distillates (CAS 68512-91-4)

EU - REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	Use restricted. See item 28. Use restricted. See item 29.
EU - REACH (1907/2006) - List of Registered Substances	Present

Propane (CAS 74-98-6)

EU - REACH (1907/2006) - List of Registered Substances	Present
UN (United Nations) - Selected Volatile Substances Prone to Abuse	Present

Butane (CAS 106-97-8)

EU - REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	Use restricted. See item 28. Use restricted. See item 29.
EU - REACH (1907/2006) - List of Registered Substances	Present
UN (United Nations) - Selected Volatile Substances Prone to Abuse	Present

Isobutane (CAS 75-28-5)

EU - REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	Use restricted. See item 28. Use restricted. See item 29.
EU - REACH (1907/2006) - List of Registered Substances	Present
UN (United Nations) - Selected Volatile Substances Prone to Abuse	Present

15.2. Chemical safety assessment	Not required.

16. Other information

Revision Note	Safety datasheet sections which have been updated: 2, 15.
Key or legend to abbreviations and acronyms	CLP: Classification according to Regulation (EC) No. 1272/2008 (GHS/CLP)
Key literature references and sources for data	According to information supplied by the manufacturer.
Classification procedure	Calculation method.
Full text of phrases referred to under sections 2 and 3	H220: Extremely flammable gas. H226: Flammable liquid and vapour.

H280: Contains gas under pressure; may explode if heated.

Disclaimer

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. This safety datasheet only contains information relating to safety and does not replace any product information or product specification.