

CERTIFICATE OF QUALITY

Terminal : Primagaz Gasol Sverige AB
 Vessel : LPG/C "B Gas Sunrise"
 Port : Karlshamn, Sweden
 Date : January 20, 2020
 Product : Propane
 Tank No : Refrigerated Cavern
 Sample ID : G200007 Cavern before loading

COPY

Bill of lading date : January 20, 2020

| TEST | | METHOD | UNIT | RESULT | Rem. |
|-------------------------------|-----------------------|---------------|---------|--------|------|
| Composition: | Specification: | | | | 1 |
| Methane | max 0,05 | ASTM D-2163 | mol % | <0,01 | |
| Ethane | | ASTM D-2163 | mol % | 0,51 | |
| Propane | | ASTM D-2163 | mol % | 98,34 | |
| Propylene | | ASTM D-2163 | mol % | <0,01 | |
| i-Butane | | ASTM D-2163 | mol % | 0,86 | |
| n-Butane | | ASTM D-2163 | mol % | 0,29 | |
| 1,3-Butadiene | | ASTM D-2163 | mol % | <0,01 | |
| - Hydrocarbons C2 | max 2,5 | ASTM D-2163 | mol % | 0,51 | |
| - Hydrocarbons C3 | min 95,0 | ASTM D-2163 | mol % | 98,34 | |
| - Hydrocarbons C4 | max 3 | ASTM D-2163 | mol % | 1,15 | |
| - Hydrocarbons C5 & heavier | max 0,5 | ASTM D-2163 | mol % | <0,01 | |
| Olefines | max 1,0 | ASTM D-2163 | mol % | <0,01 | |
| Vapour Pressure at 37,8°C | max 1435 | SS-ISO 8973 | kPa | 1328 | |
| Vapour Pressure at 40,0°C | | SS-ISO 8973 | kPa | 1364 | |
| Density at +15°C (Liquid) | | SS-ISO 8973 | kg/m3 | 507,5 | |
| Density at 0°C, 101 Kpa (Gas) | | ISO 6976 | kg/m3 | 2,0141 | |
| Heat of combustion, gross | | ISO 6976 | MJ/kg | 50,36 | |
| Heat of combustion, net | | ISO 6976 | MJ/kg | 46,33 | |
| Residual in LPG | | EN 15471 | mg/kg | 1 | |
| R number | max 10 | ASTM D-2158 | --- | <10 | |
| O number | pass | ASTM D-2158 | --- | Pass | |
| Sulphur | max 15 | ASTM D5453MOD | Wt-ppm | <5 | |
| Corrosion - copper strip | 1 | ASTM D-1838 | rating | 1A | |
| H2S by Dräger-tube | negative | Dräger-tube | Vol-ppm | <0,2 | |
| Oxygenates : | | | | | |
| - DME | | Gaschrom | Mol-ppm | <1 | |
| - Methanol | max 200 | Gaschrom | Mol-ppm | 4 | |

Remarks :

1). All analyses are On-specification.

Date: January 20, 2020



Terminal representative

Primagaz Gasol Sverige AB