

# PRODUCT SPECIFICATIONS

## GASOLINE 95 O.I.

| TEST  | UNITS   | SPECIFICATION (1)  | TEST METHOD (2)                     |   |                    |
|---|---|--|-------------------------------------|---|--------------------|
|   |   |  | En EN 228 (3)                       | Standards UNE (3)                               | Standards ASTM (3) |
| Density at 15°C   | kg/m <sup>3</sup>   | 720 a 775  | EN ISO 3675<br>EN ISO 12185         | UNE-EN ISO 3675<br>UNE-EN ISO 12185             | D 4052<br>D 1298   |
| Research Octane Number (RON) (4)  | RON   | 95,0 a 97,9  | EN ISO 5164                         | UNE-EN ISO 5164                                 | D 2699             |
| Motor Octane Number (MON) (4)   | MON   | minimum 85,0   | EN ISO 5163                         | UNE-EN ISO 5163                                 | D 2700             |
| Average Octane Number [(RON + MON)/2]   | (RON+MON)/2   |  | EN ISO 5163/5164                    | UNE-EN ISO 5163/5164                            | D 2699/D 2700      |
| Vapor Pressure (VP) (5)<br>Summer (6) (9)<br>Winter (7) (9) (10)  | kPa   | 45 a 60<br>50 a 74   | EN 13016-1                          | UNE-EN 13016-1                                  | D 5191             |
| Distillation:<br>Recovery to 70 °C (E70)<br>Summer (6) (9)<br>Winter (7) (9) (10)<br>Recovery to 100 °C<br>Summer (6) (9)<br>Winter(7) (9) (10)<br>Recovery to 150 °C<br>Final boiling point<br>Residue | % V/V<br>% V/V<br>% V/V<br>% V/V<br>% V/V<br>°C<br>% V/V    | 20 a 45<br>22 a 47<br>46 a 69<br>46 a 69<br>minimum 75<br>maximum 210<br>maximum 2                           | EN ISO 3405                         | UNE-EN ISO 3405                                 | D 86               |
| VLI (10VP + 7E70) (8) (9) (10)  | -   | maximum 980  |                                     |   |                    |
| Hydrocarbons:<br>Olefins<br>Aromatics   | % V/V<br>% V/V  | maximum 18,0<br>maximum 35,0   | EN ISO 22854<br>EN 15553            | UNE-EN ISO 22854<br>UNE-EN 15553                | D 1319             |
| Benzene   | % V/V   | maximum 1,0  | EN ISO 22854<br>EN 12177<br>EN 238  | UNE-EN ISO 22854<br>UNE-EN 12177<br>UNE-EN 238  |                    |
| Oxygen:<br>Summer (6) (9)<br>Winter (7) (9) (10)  | % m/m   | maximum 2,1<br>maximum 2.1   | EN 1601<br>EN 13132<br>EN ISO 22854 | UNE-EN 1601<br>UNE-EN 13132<br>UNE-EN ISO 22854 |                    |
| Oxygenates:<br>Methanol<br>Ethanol<br>Alcohol iso-propyl alcohol<br>Alcohol iso-butyl alcohol<br>Alcohol tert-butyl alcohol<br>Ethers with 5 or more carbon atoms<br>Others oxygenates                  | % V/V<br>% V/V<br>% V/V<br>% V/V<br>% V/V<br>% V/V<br>% V/V | maximum (11)<br>maximum (11)<br>maximum (11)<br>maximum (11)<br>maximum (11)<br>maximum (11)<br>maximum (11) | EN 1601<br>EN 13132<br>EN ISO 22854 | UNE-EN 1601<br>UNE-EN 13132<br>UNE-EN ISO 22854 |                    |
| Sulphur   | mg/kg   | maximum 10   | EN ISO 20846<br>EN ISO 20884        | UNE-EN ISO 20846<br>UNE-EN ISO 20884            |                    |
| Lead  | g/l   | maximum 0,005  | EN 237                              | UNE-EN 237                                      | D 3237             |
| Copper Corrosion (3h a 50°C)  | scale ASTM  | maximum 1b   | EN ISO 2160                         | UNE-EN ISO 2160                                 | D 130              |
| Oxidation Stability   | minutes   | minimum 360  | EN ISO 7536                         | UNE-EN ISO 7536                                 | D 525              |
| Actual Gum  | mg/100 ml   | maximum 5  | EN ISO 6246                         | UNE-EN ISO 6246                                 | D 381              |
| Phosphorus  |   |  | (12)                                |   |                    |
| Manganese   | mg/l  | (13)   | EN 16135<br>EN 16136                | UNE-EN 16135<br>UNE-EN 16136                    |                    |
| Visual Appearance   |   | Clear and bright   | Visual                              |   |                    |

EDITION: 6

DATE: 01/08/2015

SEE NOTES IN THE NEXT PAGE

## NOTES:

- (1) All testing methods referred included precision standards. In case of dispute, and to resolve, should apply methods described in standard EN ISO 4259
- (2) Other testing methods technically equivalent are admissible prior EXOLUM approval. In case of dispute, it will be followed the criteria regarding reference methods from the current version of standard EN 228, as well as the results interpretation criteria in case of disagreement stated in the mentioned standard.
- (3) For the test method described in standard EN 228 and the corresponding UNE, the method edition to be fulfilled would be to corresponding one stated in the part 2 of the mentioned tests. The rest of methods, editions will be applied the last version published, except in case of the following methods ASTM may be applied the version hereof: D 2699:1986; D 2700:1986 y D 1319:1995.
- (4) Correction factor of 0,2 must be subtracted from RON and MON to calculated the final result before reported data, as required European Directive 98/70 CE and modifications 2003/17/CE and 2009/30/CE, except the standards used ASTM D 2699:1986 and ASTM D2700:1986.
- (5) It should be indicating Dry Vapor Pressure Equivalent (DVPE).
- (6) From May 1 to September 30.
- (7) From October 1 to April 30.
- (8) This test applies on April and October.
- (9) The mentioned dates are setting for the gasoline to be available in the commercial points with the new season quality. How far in advance than gasoline must be inside of EXOLUM system to get that target, defined in service provision contract.
- (10) This limit allows the addition up 1,7 % de ethanol % V/V with a resultant mix for which the Oxygen content is less than 2,7% m/m therefore within the RD 1088/2010 as "protection gasoline".
- (11) EXOLUM system not supported light alcohols added. Oxygenated content will be limited by the total oxygen content permitted.
- (12) It should be free from compounds with phosphorus.
- (13) It should be free from compounds with manganese.

**SHOULD THERE BE A CHANGE IN THE SPAIN OFFICIAL SPECIFICATION IN FORCE, THIS TABLE WILL BE REVISED AND UPDATED TO THE NEW SITUATION**