



ARCOLA PETROLIFERA S.P.A VIA XXV APRILE 18 19021 ARCOLA (SP) 0187952711

## UNLEADED GASOLINE

### Requirement And Test Methods

Italian Standard

Release : Genn.'09

Code: U1

| Property                                | Units    | Limits           |      | Test method a                                |
|---|----------|------------------|------|--|
|   |          | Min              | Max  |  |
| Research octane numb. (RON)             | -        | 95,2             |      | prEN ISO 5164*                               |
| Motor octane numb. (MON)                | -        | 85,2             |      | prEN ISO 5163*                               |
| Lead content                            | mg/l     |                  | 5    | EN 237                                       |
| Density at 15 deg C b                   | Kg/m3    | 720              | 770  | EN ISO 3675<br>EN ISO 12185                  |
| Density at 15 deg C (in air)            | Kg/m3    | To be reported   |      | Calculated                                   |
| Sulphur content b                       | mg/Kg    |                  | 10   | EN ISO 20846<br>EN ISO 20847<br>EN ISO 20884 |
| Oxidation stability                     | minutes  | 360              |      | EN ISO 7536                                  |
| Existent gum content (solvent washed)   | ng/100ml |                  | 3    | EN ISO 6246                                  |
| Copper strip corrosion (3h at 50 deg C) | index    | class 1          |      | EN ISO 2160                                  |
| Appearance                              | -        | clear and bright |      | Visual inspection                            |
| Hydrocarbon type content:               | %(V/V)   |                  |      | ASTM D 1319                                  |
| Olefins c;d;e                           |          |                  | 18,0 | pr EN 14517                                  |
| Aromatics c;d;e                         |          |                  | 35,0 |  |
| Benzene content b                       | %(V/V)   |                  | 1,00 | EN 12177                                     |
| Oxygen content b                        | %(m/m)   |                  | 2,7  | EN 1601<br>EN 13132                          |
| Oxygenates content b                    |          |                  |      | EN 1601<br>EN 13132                          |
| methanol f                              | %(V/V)   |                  | 3    |  |
| ethanol g                               | %(V/V)   |                  | 5    |  |
| iso-propyl alcohol                      | %(V/V)   |                  | 10   |  |
| iso-buthyl alcohol                      | %(V/V)   |                  | 10   |  |
| tert-butyl alcohol                      | %(V/V)   |                  | 7    |  |
| ethers (5 or more C-atoms)              | %(V/V)   |                  | 15   |  |
| other oxygenates h                      | %(V/V)   |                  | 10   |  |

|   |         |                |        |              |
|---|---------|----------------|--------|--------------|
| Neutralizing Number                     | ngKOH/g |                | 0,04   | ASTM D 1613  |
| Flash Point                             | deg C   |                | 21     | IP 170       |
| Doctor Test                             |         | negative       |        | IP 30        |
| Ev. 90% - Ev. 5%                        | deg C   | 60             |        | EN ISO 3405  |
| Colour:                                 |         |                |        | UNICHIM 1493 |
| Grade 1                                 |         |                | green  |              |
| Grade 2                                 |         |                | undyed |              |
| Existent gum content (solvent unwashed) | ng/100m | to be reported |        | EN ISO 6246  |



ARCOLA PETROLIFERA S.P.A VIA XXV APRILE 18 19021 ARCOLA (SP) 0187952711

## UNLEADED GASOLINE

### Requirement And Test Methods

Italian Standard

Release : Genn.'09

Code: U1

#### VOLATILITY CLASSES

| Property                  | Units  | Limits |     |      |      |     |     | Test method a     |
|---------------------------|--------|--------|-----|------|------|-----|-----|-------------------|
|                           |        | A      |     | C1 i |      | D   |     |                   |
|                           |        | min    | max | min  | max  | min | max |                   |
| Vapour pressure           | kPa    | 45     | 60  | 50   | 80   | 60  | 90  | EN 13016-1 (DVPE) |
| % evaporated at 70 deg C  | %(V/V) | 20     | 48  | 22   | 50   | 22  | 50  | EN ISO 3405       |
| % evaporated at 100 deg C | %(V/V) | 46     | 71  | 46   | 71   | 46  | 71  | EN ISO 3405       |
| % evaporated at 150 deg C | %(V/V) | 75     |     | 75   |      | 75  |     | EN ISO 3405       |
| Final Boiling Point FBP   | deg C  |        | 210 |      | 210  |     | 210 | EN ISO 3405       |
| Distillation residue      | %(V/V) |        | 2   |      | 2    |     | 2   | EN ISO 3405       |
| VLI (10VP + 7 E70)        |        |        |     |      | 1050 |     |     |                   |

Grade A : May 1st - September 30th

Grade C1 : October 1st - November 15th; March 16th - April 30th.

Grade D : November 16th - March 15th

Data ultima modifica  
19-gen-09

#### **COMMENT: UNLEADED Italian standard**

\* A correction factor of 0,2 for MON and RON shall be subtracted for the calculation of the final result, before reporting according to the requirements of the European Directive 98/70/EC, including Amendment 2003/17/EC

a. Requirements and test methods are established in accordance with the European Standard.

All test methods include a precision statement.

In cases of dispute, the procedures described in EN ISO 4259 for resolving the dispute, and interpretation of the results based on test method precision shall be used.

All test methods are referred to the latest edition of the publication

b. In cases of dispute concerning sulphur content:

EN ISO 20847 is unsuitable as an arbitration method.

In cases of dispute concerning benzene content:

EN 12177 shall be used.

In cases of dispute concerning oxygen and oxygenates content

EN 1601 shall be used.

In cases of dispute concerning density:

EN 3675 shall be used.

c. The content of oxygenate compounds shall be determined in order to make the corrections according to clause 13.2 of ASTM D 1319.

d. When Ethyl-tert-butyl ether (ETBE) is present in the sample, the aromatic zone shall be determined from the pink brown ring down stream of the red ring normally used in the absence of ETBE.

The presence or absence of ETBE can be concluded from the analysis described in note c.

e. For the purpose of this standard ASTM D 1319 shall be applied without the optional deparaffinisation step. Therefore clause 6.1, 10.1 and 14.1.1 shall not be applied.

f. Stabilising agents shall be added.

g. Stabilising agents may be necessary.

h. Other mono-alcohols and ethers with a final boiling point no higher than prescribed in volatility class table.

i. During the transition period any mixture is accepted of the applicable transition grade and the summer grade.