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# Leaded Gasoline in Algeria Replaced by Unleaded Gasoline with Octane Rating of 91

Stratas Advisors

After Algeria's decision to ban the consumption of leaded gasoline in July 2021, national oil company Sonatrach found itself obliged to replace this fuel with unleaded gasoline of 95 RON (see Reports & Analysis, [August 30, 2021](#)). Faced with the difficulty of satisfying the national market, the current management of Sonatrach decided to produce unleaded gasoline of lower quality with an octane number of 91 instead of 95, with the aim of obtaining additional quantities produced from fuels of lesser quality to put on the national market (see table below). This option was favored in order to allow the current administration of Sonatrach to meet its commitments to prevent the detriment of the safety of the engines of the cars which could wear and tear prematurely, and particularly the crankshaft to avoid knocking of the engine.

It should also be noted that unleaded gasoline with an octane number of 91 currently produced by Sonatrach cannot be marketed on the international market due to its mediocre quality. Currently, European standards (EN 228) use RON 95 as the minimum octane rating in gasoline. This means that all gasoline vehicles on the road since 1991 are designed to run on gasoline

with an octane rating of 95 or higher. If the overall gasoline composition varies slightly, the octane level of gasoline in turn varies, influencing its quality.

### Current Gasoline Specifications

	2022	2022	2022
Spec Name	NA 8108/98	NA 8108/98	NA 11042:1999
Grade	Leaded Regular	Leaded Super	Premium Unleaded
Grade Category	On-road	On-road	On-road
Effective Date	Jan, 1998	Jan, 1998	Jan, 1999
Source	Algerian Institute for Normalisation (IANOR)	Algerian Institute for Normalisation (IANOR)	Algerian standard
Additional Comments	Leaded gasoline phased out as of July 2021 - replaced with unleaded gasoline	Leaded gasoline phased out as of July 2021 - replaced with unleaded gasoline	
<b>Properties</b>			
RON, min	89	96	95
MON, min			85
Sulfur, ppm, max	100	100	100
Lead, g/l, max	0.4	0.4	0.013 (1)
Benzene, vol%, max			5
RVP @ 37.8°C (100°F), kPa, max	80 (w) / 65 (s)	80 (w) / 65 (s)	65 - 80 (2)
Density @ 15°C (60°F), kg/m <sup>3</sup> , max	765	770	780
Density @ 15°C (60°F), kg/m <sup>3</sup> , min	710	730	725
<b>Distillation</b>			
T10, °C, max	70	70	
T50, °C, max	140	140	
T90, °C, max	195 (T95)	195 (T95)	

	<b>2022</b>	<b>2022</b>	<b>2022</b>
E70, vol%, max			47
E70, vol%, min			15
E100, vol%, min			40
E100, vol%, max			70
E180, vol%, min			85
FBP, °C, max	205	205	215
Residue, vol%, max	2.5	2.5	2
Phosphorus, g/l, max			0
Existent gum (solvent washed), mg/100ml, max	10	10	5
Corrosion			
Copper corrosion, 3hr @ 50°C, merit (class)	1b max	1b max	class 1
Doctor test	Negative	Negative	
Appearance			clear & bright
Dye content, g/100 l, max			allowed
Use of additives			allowed

(1) Unleaded gasoline is available on the market and accounts for ~20% of Algerian gasoline sales. Since 2005 city centers are 100% unleaded.

(2) Depends on climate rating.

Algeria is still lagging behind in the production of fuels. Sonatrach has a project in place to build another refinery in Hassi-Messaoud by 2025 to meet the needs of the national market for gasoline and diesel fuel (see table

below). Even though the contract was signed at the end of 2019, the project is already showing a significant delay as onsite works have yet to start.

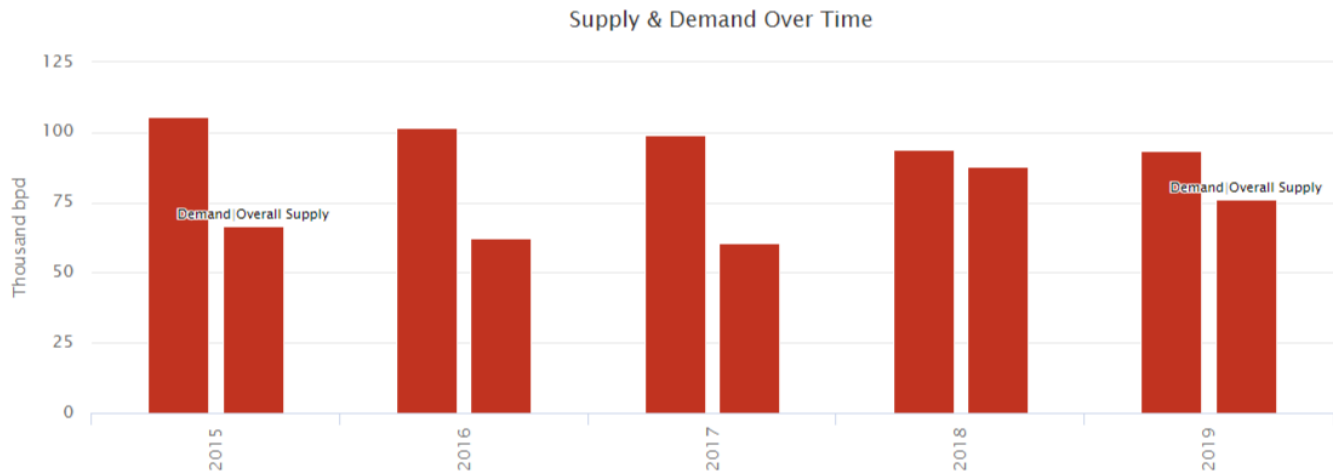
## Algerian Refinery Capacity Overview

Facility Status	Region	Country	Location	Company	CDU	Startup Year
Engineering	Africa	Algeria	Hassi	Sonatrach	100.0	2025
Operating	Africa	Algeria	Skikda	Sonatrach	356.5	1980
Operating	Africa	Algeria	Arzew	Sonatrach	75.0	1972
Project_Cancelled	Africa	Algeria	Biskra	Sonatrach	100.0	0
Operating	Africa	Algeria	Algiers	Sonatrach	108.0	1964
Operating	Africa	Algeria	Hassi-Messaoud	Sonatrach	25.0	1960
Completed	Africa	Algeria	Skikda	Sonatrach	0	2020
Project_Cancelled	Africa	Algeria	Tiaret	Sonatrach	100.0	0
Operating	Africa	Algeria	Skikda	Sonatrach	100.0	2009
Operating	Africa	Algeria	Adrar	Sonatrach / CNPC	12.9	2006

*Source: Stratas Advisors*

Current gasoline production in Algeria is below the country's needs, especially as road activity resumes its normal pace from before the COVID-19 pandemic. Maximum gasoline production in Algeria averages 75,000 barrels per day (bpd), while national consumption is 100,000 bpd (see figure below). This corresponds to a difference of 25,000 bpd that the country must import from abroad. Delays in refinery upgrades and construction of new refineries in addition to the country's strong population growth suggest that the gap is likely to continue and even widen in the years to come.

## Algerian Gasoline Supply and Demand



*Source: Stratas Advisors*

## Stratas Advisors' Views

Despite local production deficits, Algeria is able to import all of its unleaded gasoline with an octane number of 95 or 98 from Europe, which would help preserve the car fleet. This is because the higher the octane number of the gasoline, the better combustion is controlled in the engine, thus protecting engine performance and longevity. However, faced with the government's imperative to reduce imports and the Algerian policy of achieving self-sufficiency as quickly as possible before upgrading and improving the quality of fuel produced and in circulation, Sonatrach has no choice but to distribute unleaded gasoline with an octane rating of 91.