



## Fuels Technical Data Sheet

# Jet A-1

### Product Description

Jet A-1 is a kerosine grade of aviation fuel suitable for most turbine-engined aircraft; it is the most common jet fuel grade available worldwide (except for USA where Jet A is predominant). In most countries where Jet A-1 is supplied at major airports via joint fuelling systems, the fuel is specified by the Aviation Fuel Quality Requirements for Jointly Operated Systems (AFQRJOS) Joint Fuelling System Check List. The “Check List” embodies the most stringent requirements of the two major jet fuel specifications – ASTM D1655 and DEF STAN 91-91 (NATO Code F-35). By definition, any product meeting Check List requirements will also meet either DEF STAN or ASTM specifications.

The Check List is recognised by eight of the major aviation fuel suppliers – BP, Chevron, ENI, ExxonMobil, Kuwait Petroleum, Shell, Statoil and Total - as the basis of their international supply of virtually all civil aviation fuels outside North America and former Soviet Union.

Some countries have their own local specifications for Jet A-1, the major ones being Brazil, Canada, China and Russia. Although there may be minor differences, they define essentially the same fuel.

### Product Application

Jet A-1 can be used in aircraft gas turbine engines, auxiliary power units (APUs), and aero-derived ground/marine based turbine engines, for which the engine manufacturer has approved this grade of fuel.

Jet A-1 can also be used in small, General Aviation aircraft equipped with diesel (compression ignition) engines specifically designed for aviation use. Jet A-1 is not suitable for General Aviation aircraft equipped with spark ignition engines.

### Features/Benefits

Jet A-1 is manufactured to provide the balanced set of properties required for satisfactory performance in aircraft, viz: good low temperature flow characteristics, controlled volatility, resistance to oxidation and thermal degradation, clean and efficient combustion.

Jet A-1 is manufactured, stored, distributed and delivered under the most stringent quality assurance procedures to ensure that only clean, dry, on-specification fuel is supplied to aircraft.

### Care & Handling

Before handling refer to the Material Safety Data Sheet. This product is only to be used in accordance with equipment manufacturers' recommendations.

### Health & Safety Information

Based on available information, this product is not expected to produce adverse effects on health when used for the intended application and the recommendations provided in the Material Safety Data Sheet are followed.



## Fuels Technical Data Sheet

### Typical Properties

Property		Max Value	Min Value
Density @ 15°C	kg/m <sup>3</sup>	840.0	775.0
Flash Point	°C		38
Freezing Point	°C	-47	
Distillation end point	°C	300	
Aromatics Content	%v	25.0	
Sulphur content	%m	0.30	

The Jet A-1 specification contains many more parameters, several of which are specific to jet fuel, e.g. thermal oxidative stability. Regarding fuel additives, only those specifically approved by the aircraft and engine manufacturers are permitted. For full details refer to the specification.

### Specifications

The main international specifications for this grade are:
Aviation Fuel Quality Requirements for Jointly Operated Systems (AFQRJOS) Joint Fuelling System Check List
ASTM D 1655 (Grade Jet A-1)
DEF STAN 91-91
Other, similar, national specifications may also exist.

**Date of Issue: October 2007 (v1.0)**

**Product Number: 002C0364**

This data sheet and information it contains is considered to be accurate as of the date of printing. No warranty of representation, express or implied, is made as to the accuracy for completeness of the data and information contained in this publication. It is the user's obligation to evaluate and use products safely and to comply with all applicable laws and regulations. No statement made in this publication shall be construed as a permission, recommendation or authorization given or implied to practice any patented invention without valid license. The (Shell) Group shall not be responsible for any damage or injury resulting from abnormal use of the material from any failure to adhere to recommendations, or from hazards inherent in the nature of the material.