

# Large Spark-Ignition (LSI) Engine Fleet Regulation



## Fleet Requirements for Off-Road Large Spark-Ignition (LSI) Engine-Powered Forklifts and Other Industrial Equipment

In 2006, the California Air Resources Board (ARB) adopted, and later amended in 2010 and 2016, new regulations to reduce emissions from existing fleets operating large spark-ignited (LSI) engine powered equipment. This document provides information regarding the fleet average provisions for medium and large fleets (four or more forklifts or non-forklift equipment) and the 2016 amendments that require recordkeeping, reporting, and labeling.

### What types of equipment are subject to the regulation?

Only forklifts, floor scrubbers and sweepers, airport ground support equipment (GSE), and industrial tow tractors with LSI engines of 25 horsepower (19 kilowatt) or greater, and greater than 1.0 liter displacement, including electric equipment are subject to the regulation. LSI engines are fueled with gasoline, propane, and compressed natural gas.

### What are the reporting and labeling requirements?

- Report all equipment subject to a Fleet Average Emission Level (FAEL) beginning June 30, 2017 and until June 30, 2023;
- Label of each piece of equipment subject to a FAEL beginning June 30, 2017 and until June 30, 2023; and
- Maintain records until June 30, 2023.

### How is equipment reported and labeled?

Equipment is reported into DOORS. DOORS is an on-line reporting system that has been used for many years by fleets that own and operate diesel off-road equipment. ARB has expanded DOORS to include a portal for LSI equipment which may be accessed at: [https://ssl.arb.ca.gov/ssldoors/doors\\_reporting/doors\\_login.html](https://ssl.arb.ca.gov/ssldoors/doors_reporting/doors_login.html)

If fleets are unable to access the on-line reporting tool, they should contact ARB by phone at 1-877-59-DOORS (1-877-593-6677), or by email at [doors@arb.ca.gov](mailto:doors@arb.ca.gov). Initial reporting is required by June 30, 2017, or if after June 30, 2017, within 60 days of a fleet becoming subject to the FAEL.

After a fleet reports their LSI equipment to ARB, each piece of equipment is assigned a unique Equipment Identification Number (EIN). The fleet must label its equipment within 30 days of receiving EINs. Note that ARB does not issue EIN labels; it is the fleet's responsibility to follow ARB's label specifications and to make or purchase the labels or placards, or paint the EINs on its equipment. ARB uses the same label specifications for both LSI and diesel off-road equipment; however, only one label is required for LSI equipment. More information on label specifications is available at <http://www.arb.ca.gov/msprog/offroad/orspark/lsireglang.htm>.

*While this document is intended to assist fleets with their compliance efforts. It does not alter or modify the terms of any ARB regulation, is not a substitute for reading the regulation, nor does it constitute legal advice. It is the sole responsibility of fleets to ensure compliance with the Large Spark-Ignition Engine Fleet Requirements Regulation.*

A list of label vendors is available at:  
[www.arb.ca.gov/msprog/ordiesel/labelvendors.htm](http://www.arb.ca.gov/msprog/ordiesel/labelvendors.htm).

### What does the regulation require of off-road LSI fleets?

LSI fleets must meet the FAEL requirements in the table below.

Fleet Type	Number of units	Fleet Average Emission Level g/kw-hr (g/bhp-hr)		
		1/1/2009	1/1/2011	1/1/2013
Large forklift fleet	26+	3.2 (2.4)	2.3 (1.7)	1.5 (1.1)
Mid-size forklift fleet	4-25	3.5 (2.6)	2.7 (2.0)	1.9 (1.4)
Non-forklift fleet	4+	4.0 (3.0)	3.6 (2.7)	3.4 (2.5)

### What actions can a fleet take to meet these requirements?

The quickest way for a fleet to reduce its fleet average is to phase out older equipment with newer used or new equipment that has engines already certified to the 2010 0.6 g/bhp-hr level. Uncontrolled equipment may be addressed through retrofit (available for 1990 and newer model year engines), or repower with a complying engine.

Fleets may also incorporate zero-emission equipment where feasible. The capabilities of zero emission equipment such as electric forklifts have increased dramatically in recent years with the advent of more powerful and energy-efficient alternating current traction motors, higher voltage batteries, waterproofing of electronics and batteries, and fast charging.

### Are there any exemptions?

- Fleets with one to three pieces of forklift and/or non-forklift equipment are considered small fleets;
- In-field agricultural forklifts;
- Equipment that is leased or rented for a period of no more than 30 aggregated calendar days per year; and
- Off-road military tactical vehicles or equipment exempt under the federal national security exemption.

### Where can I find more information about the regulation?

Further information, is available on the LSI regulation website at  
<http://www.arb.ca.gov/msprog/offroad/orspark/orspark.htm>.

### For additional general information:

Please contact ARB's DOORS Hotline toll-free at (877)593-6677.

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