
WORLDWIDE REFINERY PROCESSING REVIEW

Monitoring Technology Development and Competition in One Single Source

Second Quarter 2016

Lube Oil Production

Plus

Latest Refining Technology Developments & Licensing



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| | |
|--|---|
| 1Q, 2Q, 3Q, 4Q ..(the) first, second, third, and fourth quarters, respectively | IPAA.....Independent Petr. Assoc. of America |
| AAAAmerican Automobile Association (US) | IPO.....initial public offering |
| ANS.....Alaskan North Slope crude | j.v.....joint venture |
| API.....American Petroleum Institute (US) | LPGliquefied petroleum gas |
| ARA.....Antwerp, Rotterdam, Amsterdam | Kthousand |
| ASTM.....American Society for Testing & Materials | kL.....kiloliter |
| b or bbl.....barrel(s) | lb.....pound(s) |
| Bbillion | METIMinistry of Economy, Trade and Industry (Japan) |
| boebarrel(s) of oil equivalent | MM.....million |
| CACalifornia | MOU.....memorandum of understanding |
| CAA.....Clean Air Act (US) | mpg.....miles per gallon |
| CARBCalifornia Air Resources Board | mt.....metric ton |
| cf.....cubic foot, cubic feet | MW.....megawatt |
| cfr.....cost and freight | N.A.not applicable or not available |
| cif.....cost, insurance, and freight | NAAQSnational ambient air quality standards |
| Concawe.....Conservation of Clean Air and Water Europe | NESCAUMNortheast States for Coordinated Air Use Management |
| CIS.....Commonwealth of Independent States | NGnatural gas |
| CNG.....compressed natural gas | NGL.....natural gas liquid |
| cst.....centistoke | NPRANational Petrochemical & Refiners Association (US) |
| d.....day | NWE.....Northwest Europe |
| DOE.....Department of Energy | NYMEXNew York Mercantile Exchange (US) |
| EECEuropean Economic Community | OECDOrganization for Economic Cooperation & Development |
| EIA.....US Energy Information Administration | OPEC.....Organization of the Petroleum Exporting Countries |
| EPAUS Environmental Protection Agency | OSHAOccupational, Safety and Health Administration (US) |
| EPC(M)engineering, procurement, and construction (management) | PCpetrochemical(s) |
| EU15.....15 original EU members | PMparticulate matter |
| EU25.....EU15 and the 10 new members admitted in May 2004 | RBOBRFG before oxygenate blending |
| EUROPIA.....European Petroleum Industry Association (Brussels) | RFGreformulated gasoline |
| FCVfuel cell vehicle | RMTrefining, marketing, and transportation |
| fd.....free delivered | RVPReid vapor pressure |
| FEEDfront-end engineering design | SCAQMD.....South Coast Air Quality Management District (California) |
| fob.....free on board | VLCCvery large crude carrier |
| galgallon | WTIWest Texas Intermediate |
| GTLgas to liquid(s) | yyear |
| h.....hour | ¢.....US cent(s) |
| H1 or H2.....first or second half of the year | €.....EU euro(s) |
| ICE.....Int'l Commodity Exchange (UK—formerly Int'l Petroleum Exchange) | £.....UK pound(s) |
| IEAInt'l Energy Agency (Paris-based) | \$.....US dollar(s) |
| | ¥.....Japanese yen |

Please note that other international currencies are abbreviated using International Standards Organization codes, which can be found at www.xe.com.

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