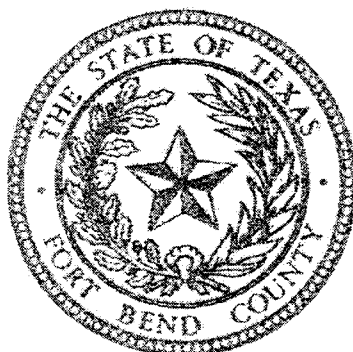


**Fort Bend County, Texas
Invitation for Bid**



**Term Contract for Purchase of Oil and Lubricants
BID 18-052**

SUBMIT BIDS TO:

Fort Bend County
Purchasing Department
Travis Annex
301 Jackson, Suite 201
Richmond, TX 77469

****NOTE:**

All correspondence must include the term "Purchasing Department" in the address to assist in proper delivery.

SUBMIT NO LATER THAN:

Tuesday, April 3, 2018
2:00 PM (Central)

LABEL ENVELOPE:

BID 18-052
OIL & LUBRICANTS

***ALL BIDS MUST BE RECEIVED IN AND TIME/DATE STAMPED BY THE PURCHASING OFFICE
OF FORT BEND COUNTY BEFORE THE SPECIFIED TIME/DATE STATED ABOVE.***

BIDS RECEIVED AS REQUIRED WILL THEN BE OPENED AND PUBLICLY READ.

BIDS RECEIVED AFTER THE SPECIFIED TIME, WILL BE RETURNED UNOPENED.

Results will not be given by phone.
Results will be provided to bidder
in writing after the Commissioners
Court awards.

Fort Bend County is always conscious
and extremely appreciative of your
effort in the preparation of this bid.

Requests for information must be in
writing and directed to:

Cheryl Krejci, CPPB
Senior Buyer
cheryl.krejci@fortbendcountytx.gov

Prepared: 3/9/18
Issued: 3/19/18

4/11/2018 Original sent to Jessica Carabajal, Purchasing dept.




COUNTY PURCHASING AGENT
Fort Bend County, Texas

Vendor Information

Debbie Kaminski, CPPB
County Purchasing Agent

Office (281) 341-8640

Legal Company Name (top line of W9)	A. J. Hurt Jr., Inc	
Business Name (if different from legal name)	The Hurt Company	
Federal ID # or S.S. #	74-1640693	
Type of Business	<input type="checkbox"/> Corporation/LLC <input type="checkbox"/> Partnership <input type="checkbox"/> Sole Proprietor/Individual <input type="checkbox"/> Tax Exempt Organization	
Publicly Traded Business	<input type="checkbox"/> No <input type="checkbox"/> Yes Ticker Symbol _____	
Remittance Address	P. O. Box 958427	
City/State/Zip	St. Louis, MO 63195-8427	
Physical Address	3310 Alice Street	
City/State/Zip	Houston, TX 77021	
Phone/Fax Number	Phone: 713-747-7411 Fax: 713-747-7418	
Contact Person	Crayton Nelson	
E-mail	crayton.nelson@reladyne.com	
Check all that apply to the company listed above and provide certification number.	DBE-Disadvantaged Business Enterprise _____ Certification # _____ SBE-Small Business Enterprise _____ Certification # _____ HUB -Texas Historically Underutilized Business _____ Certification # _____ WBE-Women's Business Enterprise _____ Certification # _____	
Company's gross annual receipts	<\$500,000 _____	\$500,000-\$4,999,999 _____
	\$5,000,000-\$16,999,999 _____	\$17,000,000-\$22,399,999 _____
	>\$22,400,000 x _____	
NAICs codes (Please enter all that apply)	454319, 454311, 45431	
Signature of Authorized Representative		
Printed Name	Adam Buys	
Title	General Manager	
Date	04/02/2018	

THIS FORM MUST BE SUBMITTED WITH THE SOLICITATION RESPONSE.

1.0 GENERAL REQUIREMENTS:

- 1.1 Read this entire document carefully. Follow all instructions. You are responsible for fulfilling all requirements and specifications. Be sure you understand them.
- 1.2 General Requirements apply to all advertised bids, however, these may be superseded, whole or in part, by the scope, special requirements, specifications, special specifications or other data contained herein.
- 1.3 Governing Law: Bidder is advised that these requirements shall be fully governed by the laws of the State of Texas and that Fort Bend County may request and rely on advice, decisions and opinions of the Attorney General of Texas and the County Attorney concerning any portion of these requirements.
- 1.4 Bid Document Completion: Fill out, initial each page, SIGN CONTRACT SHEET, and return ONE (1) completed, signed original of the bid document along with a copy of the completed Pricing Form. On CD or Flash Drive, provide a copy of the completed bid document and ONE (1) electronic Excel file of the Pricing Form, completed by the bidder in Excel, to the Fort Bend County Purchasing Department. An authorized representative of the bidder MUST sign the contract sheet. The bid document, copy of completed pricing form, and electronic file, as provided on County's website, must be in the same sealed envelope marked with the appropriate bid number and title. The contract will be binding only when signed by the County Judge of Fort Bend County and a purchase order authorizing the item(s) desired has been issued. The use of correction fluid is NOT acceptable and may result in the disqualification of bid. If an error is made, vendor MUST draw a line through error and initial each change. All response, typed or written information, must be clear and legible.
- 1.5 Bid Returns: Bidders must return entire completed bid document to the Fort Bend County Purchasing Department at 301 Jackson, Suite 201, Richmond, Texas no later than 2:00 P.M. on the date specified. Late bids will not be accepted. Bids must be submitted in a sealed envelope, addressed as follows: Fort Bend County Purchasing Agent, Travis Annex, 301 Jackson, Suite 201, Richmond, Texas 77469.
- 1.6 Governing Document: In the event of any conflict between the terms and provisions of these requirements and the specifications, the specifications shall govern. In the event of any conflict of interpretation of any part of this overall document, Fort Bend County's interpretation shall govern.
- 1.7 Addenda: No interpretation of the meaning of the drawings, specifications or other bid documents will be made to any bidder orally. All requests for such interpretations must be made in writing addressed to Ms. Cheryl Krejci, Senior Buyer, 301 Jackson, Suite 201, Richmond, Texas 77469, e-mail: cheryl.krejci@fortbendcountytexas.gov. Any and all interpretations and any

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supplemental instructions will be in the form of written addenda to the contract documents which will be posted on Fort Bend County's website. Addenda will **ONLY** be issued by the Fort Bend County Purchasing Agent. It is the sole responsibility of each bidder to insure receipt of any and all addenda. All addenda issued will become part of the contract documents. Bidders must sign and include addendum in the returned bid package. Deadline for submission of questions and/or clarification is **Tuesday, March 27, 2018 at 9:00 a.m. (CST)**. Requests received after the deadline will not be responded to due to the time constraints of this bid process.

- 1.8 **Hold Harmless Agreement:** Contractor shall indemnify and hold Fort Bend County harmless from all claims for personal injury, death and/or property damage arising from any cause whatsoever, resulting directly or indirectly from contractor's performance. Contractor shall procure and maintain, with respect to the subject matter of this bid, appropriate insurance coverage including, as a minimum, public liability and property damage with adequate limits to cover contractor's liability as may arise directly or indirectly from work performed under terms of this bid. Certification of such coverage must be provided to the County upon request.
- 1.9 **Waiver of Subrogation:** Bidder and bidder's insurance carrier waive any and all rights whatsoever with regard to subrogation against Fort Bend County as an indirect party to any suit arising out of personal or property damages resulting from bidder's performance under this agreement.
- 1.10 **Severability:** If any section, subsection, paragraph, sentence, clause, phrase or word of these requirements or the specifications shall be held invalid, such holding shall not affect the remaining portions of these requirements and the specifications and it is hereby declared that such remaining portions would have been included in these requirements and the specifications as though the invalid portion had been omitted.
- 1.11 **Bonds:** If this bid requires submission of bid guarantee and performance bond, there will be a separate page explaining those requirements. Bids submitted without the required bid bond or cashier's checks are not acceptable. Bond/s or cashier's check must be complete with all required signatures.
- 1.12 **Taxes:** Fort Bend County is exempt from all federal excise, state and local taxes unless otherwise stated in this document. Fort Bend County claims exemption from all sales and/or use taxes under Chapter 20, Title 122a, Vernon's Texas Civil Statutes, as amended. Texas Limited Sales Tax Exemption Certificates will be furnished upon written request to the Fort Bend County Purchasing Department.
- 1.13 **Fiscal Funding:** A multi-year lease or lease/purchase arrangement (if requested by the specifications), or any contract continuing as a result of an extension option, must include fiscal funding out. If, for any reason, funds are not appropriated to continue the lease or contract, said lease or contract shall become null and void. After

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expiration of the lease, leased equipment shall be removed by the bidder from the using department without penalty of any kind or form to Fort Bend County. All charges and physical activity related to delivery, installation, removal and redelivery shall be the responsibility of the bidder.

- 1.14 Pricing: Prices for all goods and/or services shall be firm for the duration of this contract and shall be stated in the bid spreadsheet. Prices shall be all inclusive. No price changes, additions, or subsequent qualifications will be honored during the course of the contract. All prices must be written in ink or typewritten. Pricing on all transportation, freight, and other charges are to be prepaid by the contractor and included in the bid prices. If there are any additional charges of any kind, other than those mentioned above, specified or unspecified, bidder MUST indicate the items required and attendant costs or forfeit the right to payment for such items.
- 1.15 Silence of Specifications: The apparent silence of specifications as to any detail, or the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail and that only material and workmanship of the finest quality are to be used. All interpretations of specifications shall be made on the basis of this statement. The items furnished under this contract shall be new, unused of the latest product in production to commercial trade and shall be of the highest quality as to materials used and workmanship. Manufacturer furnishing these items shall be experienced in design and construction of such items and shall be an established supplier of the item bid.
- 1.16 Supplemental Materials: Bidders are responsible for including all pertinent product data in the returned bid package. Literature, brochures, data sheets, specification information, completed forms requested as part of the bid package and any other facts which may affect the evaluation and subsequent contract award should be included. Materials such as legal documents and contractual agreements, which the bidder wishes to include as a condition of the bid, must also be in the returned bid package. Failure to include all necessary and proper supplemental materials may be cause to reject the entire bid.
- 1.17 Material Safety Data Sheets: Under the "Hazardous Communication Act", commonly known as the "Texas Right To Know Act", a bidder must provide to County and using departments, with each delivery, material safety data sheets, which are, applicable to hazardous substances defined in the Act. Bidders are obligated to maintain a current, updated file in the Fort Bend County Purchasing Department. Failure of the bidder to maintain such a file will be cause to reject any bid applying thereto.
- 1.18 Name Brands: Specifications may reference name brands and model numbers. It is not the intent of Fort Bend County to restrict these bids in such cases, but to establish a desired quality level of merchandise or to meet a pre-established standard due to like existing items. Bidders may offer items of equal stature and the burden of proof

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of such stature rests with them. Fort Bend County shall act as sole judge in determining equality and acceptability of products offered.

- 1.19 Color Selection: Determination of colors of materials is a right reserved by the using department unless otherwise specified in the bid. Unspecified colors shall be quoted as standard colors, not colors, which require up charges or special handling. Unspecified fabrics or vinyl should be construed as medium grade. If bidder fails to get color/material approvals prior to delivery of merchandise, the using department may refuse to accept the items and demand correct shipment without penalty, subject to other legal remedies.
- 1.20 Evaluation: Evaluation shall be used as a determinant as to which bid items or services are the most efficient and/or most economical for the County. It shall be based on all factors, which have a bearing on price and performance of the items in the user environment. All bids are subject to tabulation by the Fort Bend County Purchasing Department and recommendation to Fort Bend County Commissioners Court. Compliance with all bid requirements, delivery and needs of the using department are considerations in evaluating bids. Pricing is NOT the only criteria for making a recommendation. The Fort Bend County Purchasing Department reserves the right to contact any bidder, at any time, to clarify, verify or request information with regard to any bid.
- 1.21 Inspections: Fort Bend County reserves the right to inspect any item(s) or service location for compliance with specifications and requirements and needs of the using department. If a bidder cannot furnish a sample of a bid item, where applicable, for review, or fails to satisfactorily show an ability to perform, the County can reject the bid as inadequate.
- 1.22 Testing: Fort Bend County reserves the right to test equipment, supplies, material and goods bid for quality, compliance with specifications and ability to meet the needs of the user. Demonstration units must be available for review. Should the goods or services fail to meet requirements and/or be unavailable for evaluation, the bid is subject to rejection.
- 1.23 Disqualification of Bidder: Upon signing this bid document, a bidder offering to sell supplies, materials, services, or equipment to Fort Bend County certifies that the bidder has not violated the antitrust laws of this state codified in section 15.01, et seq., Business & Commerce Code, or the federal antitrust laws, and has not communicated directly or indirectly the bid made to any competitor or any other person engaged in such line of business. Any or all bids may be rejected if the County believes that collusion exists among the bidders. Bids in which the prices are obviously unbalanced may be rejected. If multiple bids are submitted by a bidder and after the bids are opened, one of the bids is withdrawn, the result will be that all of the bids submitted by that bidder will be withdrawn; however, nothing herein prohibits a vendor from submitting multiple bids for different products or services.

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- 1.24 Awards: Fort Bend County reserves the right to award this contract on the basis of lowest and best bid in accordance with the laws of the State of Texas, to waive any formality or irregularity, to make awards to more than one bidder, to reject any or all bids. In the event the lowest dollar bidder meeting specifications is not awarded a contract, the bidder may appear before the Commissioners Court and present evidence concerning his responsibility. An award is final only upon formal execution by the Fort Bend County Commissioners Court or the Fort Bend County Purchasing Agent. Fort Bend County reserves the right to withdraw any award until execution by the proper authority.
- 1.25 Assignment: The successful vendor may not assign, sell or otherwise transfer this contract without written permission of Fort Bend County Commissioners Court.
- 1.26 Term Contracts: If the contract is intended to cover a specific time period, said time will be given in the specifications under scope.
- 1.27 Maintenance: Maintenance required for equipment bid should be available in Fort Bend County by a manufacturer authorized maintenance facility. Costs for this service shall be shown on the bid sheet as requested or on a separate sheet, as required. If Fort Bend County opts to include maintenance, it shall be so stated in the purchase order and said cost will be included. Service will commence only upon expiration of applicable warranties and should be priced accordingly.
- 1.28 Contract Obligation: Fort Bend County Commissioners Court must award the contract and the County Judge or other person authorized by the Fort Bend County Commissioners Court must sign the contract before it becomes binding on Fort Bend County or the bidders. Department heads are not authorized to sign agreements for Fort Bend County. Binding agreements shall remain in effect until all products and/or services covered by this purchase have been satisfactorily delivered and accepted.
- 1.29 Title Transfer: Title and Risk of Loss of goods shall not pass to Fort Bend County until Fort Bend County actually receives and takes possession of the goods at the point or points of delivery. Receiving times may vary with the using department. Generally, deliveries may be made between 8:30 a.m. and 4:00 p.m., Monday through Friday. Bidders are advised to consult the using department for instructions. The place of delivery shall be shown under the "Special Requirement" section of this bid document and/or on the Purchase Order as a "Ship To:" address.
- 1.30 Purchase Order and Delivery: The successful bidder shall not deliver products or provide services without a Fort Bend County Purchase Order, signed by an authorized agent of the Fort Bend County Purchasing Department. The fastest, most reasonable delivery time shall be indicated by the bidder in the proper place on the bid sheet. Any special information concerning delivery should also be included, on a separate sheet, if necessary. All items shall be shipped F.O.B. inside delivery unless

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otherwise stated in the specifications. This shall be understood to include bringing merchandise to the appropriate room or place designated by the using department. Every tender or delivery of goods must fully comply with all provisions of these requirements and the specifications including time, delivery and quality. Nonconformance shall constitute a breach, which must be rectified prior to expiration of the time for performance. Failure to rectify within the performance period will be considered cause to reject future deliveries and cancellation of the contract by Fort Bend County without prejudice to other remedies provided by law. Where delivery times are critical, Fort Bend County reserves the right to award accordingly.

- 1.31 Contract Extension: Extensions may be made only by written agreement between Fort Bend County and the bidder. Any price escalations are limited to those stated by the bidder in the original bid.
- 1.32 Termination: Fort Bend County reserves the right to terminate the contract for default if Seller breaches any of the terms therein, including warranties of bidder or if the bidder becomes insolvent or commits acts of bankruptcy. Such right of termination is in addition to and not in lieu of any other remedies, which Fort Bend County may have in law or equity. Default may be construed as, but not limited to, failure to deliver the proper goods and/or services within the proper amount of time, and/or to properly perform any and all services required to Fort Bend County's satisfaction and/or to meet all other obligations and requirements. Contracts may be terminated without cause upon thirty (30) days written notice to either party unless otherwise specified.
- 1.33 Recycled Materials: Fort Bend County encourages the use of products made of recycled materials and shall give preference in purchasing to products made of recycled materials if the products meet applicable specifications as to quantity and quality. Fort Bend County will be the sole judge in determining product preference application.
- 1.34 Interlocal Participation: Additional governmental entities may purchase from this bid. Vendor agrees to accept purchase orders from those participating entities and to invoice each entity separately.
- 1.35 Escalation Clause: Successful bidder may apply for a price increase to the Fort Bend County Commissioners Court. Price increase will be the amount increased to the vendor from his supplier. Written documentation of the increase from vendor's supplier must be provided to the Purchasing Agent. No application for a price increase may be submitted within the first four (4) months of this contract. Increases of more than 25% of the original bid price will not be considered.
- 1.36 Modifications: This instrument contains the entire Contract between the parties relating to the rights herein granted and obligations herein assumed. Any oral or written representations or modifications concerning this instrument shall be of no

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force and effect excepting a subsequent written modification signed by both parties hereto.

2.0 TERMS & CONDITIONS:

- 2.1 **Seller to Package Goods:** Seller will package goods in accordance with good commercial practice. Each delivery container shall be clearly and permanently marked as follows (a) Seller's name and address; (b) Consignee's name, address and purchase order number and the bid number if applicable; (c) Container number and total number of containers (e.g. box 1 of 4 boxes); and (d) the number of the container bearing the packing slip. Seller shall bear cost of packaging unless otherwise provided. Goods shall be suitably packed to secure lowest transportation costs and to conform to requirements of common carriers and any applicable specifications. Fort Bend County's count or weight shall be final and conclusive on shipments not accompanied by packing list.
- 2.2 **Shipment Under Reservation Prohibited:** Seller is not authorized to ship goods under reservation and no tender of a bill of lading will operate as a tender of goods.
- 2.3 **Title and Risk of Loss:** The title and risk of loss of the goods shall not pass to the County until a County employee actually receives and takes possession of the goods at the point or points of delivery.
- 2.4 **Delivery Terms:** F.O.B. Destination Freight Prepaid, Inside Delivery, unless delivery terms are specified otherwise on Purchase Order.
- 2.5 **No Replacement of Defective Tender:** Every tender or delivery of goods must fully comply with all provisions of the Purchase Order as to time of delivery, quality and the like. If a tender is made which does not fully conform, this shall constitute a breach and Seller shall not have the right to substitute a conforming tender.
- 2.6 **Place of Delivery:** The place of delivery shall be that set forth in the block of the purchase order entitled "Ship To". Any change thereto shall be effective by modification as provided for in Clause number 2.20 "Modifications", hereof. The terms of this agreement are "no arrival, no sale", at the discretion of Fort Bend County.
- 2.7 **Invoices and Payments:**
 - 2.7.1 Seller shall submit separate invoices, in duplicate. Invoices shall indicate the purchase order number and the bid number if applicable. Invoices shall be itemized and transportation charges, if any, shall be listed separately. A copy of the bill of lading, and the freight waybill when applicable should be attached to the invoice.

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- 2.7.2 Fort Bend County's obligation is payable only and solely from funds available for the purpose of this purchase. Lack of funds shall render the order null and void to the extent funds are not available and any delivered but unpaid goods will be returned to Seller by the county.
 - 2.7.3 Do not include Federal Excise, State, or City Sales Tax. Fort Bend County is a tax-exempt governmental entity.
- 2.8 Gratuities: Fort Bend County may, by written notice to the Seller, cancel any order without liability, if it is determined by the County that gratuities, in the form of entertainment, gifts, or otherwise were offered or given by the Seller, or any agent or representative of the Seller to any officer or employee of Fort Bend County with a view toward securing an order. In the event an order is canceled by the County pursuant to this provision, the County shall be entitled, in addition to any other rights and remedies, to recover or withhold the amount of the cost incurred by Seller in providing such gratuities.
- 2.9 Special Tools and Test Equipment: If the price stated on the face of an order includes the cost of any special tooling or special test equipment fabricated or required by Seller for the purpose of filing this order, such special tooling equipment and any process sheets related thereto shall become the property of the County and to the extent feasible shall be identified by the Seller as such.
- 2.10 Warranty/Price:
 - 2.10.1 The price to be paid by the County shall be that contained in Seller's quote or bid which Seller warrants to be no higher than Seller's current prices on orders by others for products of the kind and specification covered by an order for similar quantities under similar or like conditions and methods of purchase. In the event Seller breaches this warranty the prices of the items shall be reduced to the Seller's current prices on orders by others. Fort Bend County may cancel this contract without liability.
 - 2.10.2 The Seller warrants that no person or selling agency has been employed or retained to solicit or secure any County order based upon any agreement or understanding for commission, percentage, brokerage, or contingent fee excepting bona fide employees of bona fide established commercial or selling agencies maintained by the Seller for the purpose of securing business. A breach or violation of this warranty gives the County the right, in addition to any other right or rights, to cancel this contract without liability.
- 2.11 Warranty Product: Seller shall not limit or exclude any implied warranties and any attempt to do so shall render an order voidable at the option of the County. Seller warrants that the goods furnished will conform to the specifications, drawings, and description listed in the bid invitation and purchase order as applicable, and to the

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sample(s) furnished by Seller if any. In the event of a conflict between the specifications, drawings, and descriptions, the specifications shall govern.

- 2.12 **Safety Warranty:** Seller warrants that the product sold to Fort Bend County shall conform to the standards promulgated by the U.S. Department of Labor under the Occupational Safety and Health Act of 1970. In the event the product does not conform to OSHA standards, the County may return the product for correction or replacement at the Seller's expense. In the event Seller fails to make the appropriate correction within 10 days, correction made by the County will be at Seller's expense.
- 2.13 **No Warranty by Fort Bend County Against Infringements:** As part of a contract for sale Seller agrees to ascertain whether goods manufactured in accordance with the specifications will give rise to the rightful claim of any third person by way of infringement. Fort Bend County makes no warranty that the production of goods according to the specification will not give rise to such a claim and in no event shall Fort Bend County be liable to Seller for indemnification in the event the Seller is sued on the grounds of infringement or the like. If Seller is of the opinion that an infringement will result, he will notify Fort Bend County to this effect in writing within two days after the receiving Purchase Order. If the County does not receive notice and is subsequently held liable for the infringement, Seller will defend and save the County harmless. If Seller in good faith ascertains that production of the goods in accordance with the specifications will result in infringement, this contract shall be null and void except that the County will pay Seller the reasonable cost of his search as to infringements.
- 2.14 **Right of Inspection:** The County shall have the right to inspect the goods at delivery before accepting them.
- 2.15 **Cancellation:** Fort Bend County shall have the right to cancel for default all or any part of the undelivered portion of an order if Seller breaches any of the terms hereof including warranties of Seller, or if the Seller becomes insolvent or files for protection under the bankruptcy laws. Such rights of cancellation are in addition to and not in lieu of any other remedies, which Fort Bend County may have in law or equity.
- 2.16 **Termination:** The performance of work under a Purchase Order may be terminated in whole or in part by the County in accordance with this provision. Termination of work there under shall be effected by the delivery to the Seller of a "Notice of Termination" specifying the extent to which performance of work under the order is terminated and the date upon which such termination becomes effective. Such right of termination is in addition to and not in lieu of rights of Fort Bend County set forth in Clause 15 herein.
- 2.17 **Force Majeure:** Force Majeure means a delay encountered by a party in the performance of its obligations under this Agreement, which is caused by an event

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beyond the reasonable control of that party. Without limiting the generality of the foregoing, "Force Majeure" shall include but not be restricted to the following types of events: acts of God or public enemy; acts of governmental or regulatory authorities; fires, floods, epidemics or serious accidents; unusually severe weather conditions; strikes, lockouts, or other labor disputes; and defaults by subcontractors.

In the event of a Force Majeure, the affected party shall not be deemed to have violated its obligations under this Agreement, and the time for performance of any obligations of that party shall be extended by a period of time necessary to overcome the effects of the Force Majeure, provided that the foregoing shall not prevent this Agreement from terminating in accordance with the termination provisions. If any event constituting a Force Majeure occurs, the affected party shall notify the other parties in writing, within twenty-four (24) hours, and disclose the estimated length of delay, and cause of the delay.

- 2.18 Assignment-Delegation: No right or interest in an order shall be assigned or delegation of any obligation made by Seller without the written permission of Fort Bend County. Any attempted assignment or delegation by Seller shall be wholly void and totally ineffective for all purposes unless made in conformity with this paragraph.
- 2.19 Waiver: No claim or right arising out of a breach of any contract can be discharged in whole or in part by a waiver or renunciation of the claim or right unless the waived or renunciation is supported by consideration and is in writing signed by the aggrieved party.
- 2.20 Modification: A Purchase Order can be modified or rescinded only by a writing signed by both of the parties or their duly authorized agents.
- 2.21 Parol Evidence: This writing is intended by the parties as a final expression of their agreement and is intended also as a complete and exclusive statement of the terms of this agreement. No course of prior dealings between the parties and no usage of the trade shall be relevant to supplement or explain any terms rendered under this agreement and shall not be relevant to determine the meaning of this agreement even though the accepting or acquiescing party has knowledge of the performance and opportunity for objection. Whenever a term defined by the Uniform Commercial Code is used in this agreement, the definition contained in the Code is to control.
- 2.22 Applicable Law: This agreement shall be governed by the Uniform Commercial Code. Whenever the term "Uniform Commercial Code" is used it shall be construed as meaning the Uniform Commercial Code as adopted in the State of Texas and in effect on the date of the purchase order.
- 2.23 Advertising: Seller shall not advertise or publish, without the County's prior consent the fact that Fort Bend County has entered into any contract, except to the extent necessary to comply with proper requests for information from an authorized

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representative of the federal, state, or local government.

- 2.24 **Right to Assurance:** Whenever the County in good faith has reason to question the other party's intent to perform. The County may demand that the other party give written assurance of his intent to perform. In the event that a demand is made and no assurance is given within five (5) days, the County may treat this failure as an anticipatory repudiation of the contract.
- 2.25 **Venue:** Both parties agree that venue for any litigation arising from this contract shall lie in Richmond, Fort Bend County, Texas.
- 2.26 **Prohibition Against Personal Interest in Contracts:** No officer or employee of the County shall have a financial interest, direct or indirect, in any contract with the County, or shall be financially interested, directly or indirectly, in the sale to the County of any land, materials, supplies, or service, except on behalf of the County as an officer or employee. Any willful violation of this section shall constitute malfeasance in office, and any officer or employee guilty thereof shall be subject to disciplinary action under applicable laws, statutes and codes of the State of Texas. Any violation of this section, with the knowledge, expressed or implied of the person or corporation contracting with the County shall render the contract involved voidable by the County Commissioners Court.

3.0 SCOPE:

It is the intent of Fort Bend County to contract with one (1) or more vendors to provide oils and lubricants for Fort Bend County as specified herein.

4.0 TERM OF CONTRACT:

The term of this contract is **16 April 2018 through 31 March 2019**, renewable annually for four (4) years (through 31 March 2023) under the same terms and conditions if mutually agreeable to both parties. Either party for any reason may terminate this contract by giving thirty (30) days written notice of the intent to terminate.

5.0 BID DOCUMENT COMPLETION:

Fill out, initial each page, SIGN CONTRACT SHEET, and return ONE (1) completed, signed original of the bid document along with a copy of the completed Pricing Form. On CD or Flash Drive, provide a copy of the completed bid document and ONE (1) electronic Excel file of the Pricing Form, completed by the bidder in Excel, to the Fort Bend County Purchasing Department. An authorized representative of the bidder MUST sign the contract sheet. The bid document, copy of completed pricing form, and electronic file, as provided on County's website, must be in the same sealed envelope marked with the appropriate bid number and title. The contract will be binding only when signed by the County Judge of Fort Bend County and a purchase order authorizing the item(s) desired has been issued. The use of correction fluid is NOT acceptable and

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may result in the disqualification of bid. If an error is made, vendor **MUST** draw a line through error and initial each change. All response, typed or written information, must be clear and legible.

6.0 MODIFICATIONS:

This instrument contains the entire Contract between the parties relating to the rights herein granted and obligations herein assumed. Any oral or written representations or modifications concerning this instrument shall be of no force and effect excepting a subsequent written modification signed by both parties hereto.

7.0 STATE LAW REQUIREMENTS FOR CONTRACTS:

The contents of this section are required by Texas Law and are included by County regardless of content.

- 7.1 Agreement to Not Boycott Israel Chapter 2270 Texas Government Code: By signature on vendor form, Contractor verifies Contractor does not boycott Israel and will not boycott Israel during the term of this Contract.
- 7.2 Texas Government Code Section 2251.152 Acknowledgment: By signature on vendor form, Contractor represents pursuant to Section 2252.152 of the Texas Government Code, that Contractor is not listed on the website of the Comptroller of the State of Texas concerning the listing of companies that are identified under Section 806.051, Section 807.051 or Section 2253.153.

8.0 TEXAS ETHICS COMMISSION FORM 1295:

- 8.1 Effective January 1, 2016 all contracts executed by Commissioners Court, regardless of the dollar amount, will require completion of Form 1295 "Certificate of Interested Parties", per the new Government Code Statute §2252.908. All vendors submitting a response to a formal Bid, RFP, SOQ or any contracts, contract amendments, renewals or change orders are required to complete the Form 1295 online through the State of Texas Ethics Commission website. Please visit:
https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm.
- 8.2 On-line instructions:
 - 8.2.1 Name of governmental entity is to read: Fort Bend County .
 - 8.2.2 Identification number used by the governmental entity is: B18-052 .
 - 8.2.3 Description is the title of the solicitation: Oils and Lubricants .
- 8.3 Apparent low bidder(s) will be required to provide the Form 1295 within three (3) calendar days from notification; however, if your company is publicly traded you are

Initials of Bidder: AK

not required to complete this form.

9.0 QUALITY CONTROL:

Fort Bend County reserves the right to sample and test products at time of delivery for specification compliance in the presence of the driver or vendor's representative. Costs for tests shall be borne by the Contractor in the event product fails to meet specifications. Products not in their original package will not be accepted.

10.0 DELIVERY:

- 10.1 Vendor must complete delivery within two (2) working days after receipt of purchase order.
- 10.2 Vendor must have the ability to make two-hour deliveries in the event of an emergency.
- 10.3 Vendor will not deliver products or provide services as part of this contract without a Purchase Order issued by the Fort Bend County Purchasing Agent.
- 10.4 Vendor will not deliver products or services in excess of those authorized and under no circumstances will Fort Bend County be liable for payment of products or services, which exceed the amounts authorized by the Purchase Order.
- 10.5 All deliveries must be made and completed between 8:00 AM and 3:00 PM, Monday through Friday.
- 10.6 Fort Bend County reserves the right to add or delete delivery locations as needed.
- 10.7 **No minimum orders**, dollar amount or quantity.
- 10.8 Vendor must pick up and dispose of empty oil pails and drums. No drum deposits are allowed.
- 10.9 Manufacturers' Safety Data Sheets (MSDS) must be provided for each product ordered at time of delivery.
- 10.10 Bid prices are to include any and all state, federal charges, etc.

11.0 AWARD:

This contract will be awarded to the lowest and best bid per item, with the exception of Section 12.3 which will be awarded to the lowest and best bid per subsection.

12.0 SPECIFICATIONS AND PRICING:

Specifications are available on the bid pricing form downloadable in Excel format from Fort Bend County's website. All bid pricing must be completed in the Excel Pricing Form file provided on the County's website. Vendors are to download the Excel Pricing Form from Fort Bend County's website, complete the pricing in the Excel file, and include an electronic copy of the completed Excel pricing form on CD or Flash Drive in the same sealed envelope with their copy of bid response. The electronic copy must be savable by the Fort Bend County Purchasing Department to access the vendor's pricing in Excel format and transfer of Vendor's bid prices to the County's Excel tabulation file. A printed copy of the completed pricing form is, also, to be included with the bid response. Pricing for items must meet the specifications as stated herein and include FOB Fort Bend County and inside delivery to any location within Fort Bend County. Section 12.1 and Section 2.2 are brand specific. Section 12.4 items are the generic bid prices of Sections 12.1 and 12.2.

13.0 REQUIRED FORMS:

All vendors submitting are required to complete the attached and return with submission:

- 13.1 Pricing Form in electronic Excel File
- 13.2 Vendor Form
- 13.3 W9 Form
- 13.4 Tax Form/Debt/Residence Certification
- 13.5 Contractor Acknowledgement of Stormwater Management Program

CONTRACT SHEET
B18-052

THE STATE OF TEXAS
COUNTY OF FORT BEND


This memorandum of agreement made and entered into on the 10th day of April, 20 18,
by and between Fort Bend County in the State of Texas (hereinafter designated County), acting herein by
County Judge Robert Hebert, by virtue of an order of Fort Bend County Commissioners Court, and
A. J. Hurt Jr., INC (hereinafter designated Contractor).
(company name)

WITNESSETH:

The Contractor and the County agree that the bid and specifications for **Purchase of Oil and Lubricants** which are hereto attached and made a part hereof, together with this instrument and the bond (when required) shall constitute the full agreement and contract between parties and for furnishing the items set out and described; the County agrees to pay the prices stipulated in the accepted bid.

It is further agreed that this contract shall not become binding or effective until signed by the parties hereto and a purchase order authorizing the items desired has been issued.

Executed at Richmond, Texas this 10th day of April, 20 18.

By:  Fort Bend County, Texas
County Judge Robert E. Hebert

By: 
Signature of Contractor

By: Adam Buys, General Manager
Printed Name and Title

Request for Taxpayer Identification Number and Certification

Give Form to the
requester. Do not
send to the IRS.

Print or type See Specific Instructions on page 2.	1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank. A. J. Hurt Jr., Inc	
	2 Business name/disregarded entity name, if different from above The Hurt Company	
	3 Check appropriate box for federal tax classification; check only one of the following seven boxes: <input type="checkbox"/> Individual/sole proprietor or single-member LLC <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner. <input type="checkbox"/> Other (see instructions) ▶	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____ <small>(Applies to accounts maintained outside the U.S.)</small>
	5 Address (number, street, and apt. or suite no.) 3310 Alice Street	Requester's name and address (optional)
	6 City, state, and ZIP code Houston, TX 77021	
	7 List account number(s) here (optional)	

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number								
None	-			-				
or								
Employer identification number								
74	-	1	6	4	0	6	9	3

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here	Signature of U.S. person ▶ 	Date ▶ 4/2/18
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General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at www.irs.gov/fw9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)

- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding?* on page 2.

By signing the filled-out form, you:

- Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
- Certify that you are not subject to backup withholding, or
- Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
- Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.

Job No.: _____

TAX FORM/DEBT/ RESIDENCE CERTIFICATION
(for Advertised Projects)

Taxpayer Identification Number (T.I.N.): The Hurt Company

Company Name submitting Bid/Proposal: 3310 Alice Street

Mailing Address: Houston, TX 77021

Are you registered to do business in the State of Texas? ☒ Yes No

If you are an individual, list the names and addresses of any partnership of which you are a general partner or any assumed name(s) under which you operate your business

- I. **Property:** List all taxable property in Fort Bend County owned by you or above partnerships as well as any d/b/a names. Include real and personal property as well as mineral interest accounts. (Use a second sheet of paper if necessary.)

Fort Bend County Tax Acct. No.*

Property address or location**

None

None

* This is the property account identification number assigned by the Fort Bend County Appraisal District.

** For real property, specify the property address or legal description. For business personal property, specify the address where the property is located. For example, office equipment will normally be at your office, but inventory may be stored at a warehouse or other location.

- II. **Fort Bend County Debt** - Do you owe any debts to Fort Bend County (taxes on properties listed in I above, tickets, fines, tolls, court judgments, etc.)?

Yes ☒ No

If yes, attach a separate page explaining the debt.

- III. **Residence Certification** - Pursuant to Texas Government Code §2252.001 *et seq.*, as amended, Fort Bend County requests Residence Certification. §2252.001 *et seq.* of the Government Code provides some restrictions on the awarding of governmental contracts; pertinent provisions of §2252.001 are stated below:

(3) "Nonresident bidder" refers to a person who is not a resident.

(4) "Resident bidder" refers to a person whose principal place of business is in this state, including a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

☒ I certify that A J Hurt Jr. Inc is a Resident Bidder of Texas as defined in Government Code §2252.001.
[Company Name]

I certify that _____ is a Nonresident Bidder as defined in Government Code
[Company Name]

§2252.001 and our principal place of business is Houston, Texas.
[City and State]

Mandatory Form



Contractor Acknowledgement of Stormwater Management Program

I hereby acknowledge that I am aware of the stormwater management program and standard operating procedures developed by Fort Bend County in compliance with the TPDES General Permit No. TXR040000. I agree to comply with all applicable best management practices and standard operating procedures while conducting my services for Fort Bend County. I agree to conduct all services in a manner that does not introduce illicit discharges of pollutants to streets, stormwater inlets, drainage ditches or any portion of the drainage system. The following materials and/or pollutant sources must not be discharged to the drainage system as a result of any services provided:

1. Grass clippings, leaves, mulch, rocks, sand, dirt or other waste materials resulting from landscaping activities, (except those materials resulting from ditch mowing or maintenance activities)
2. Herbicides, pesticides and/or fertilizers, (except those intended for aquatic use)
3. Detergents, fuels, solvents, oils and/or lubricants, other equipment and/or vehicle fluids,
4. Other hazardous materials including paints, thinners, chemicals or related waste materials,
5. Uncontrolled dewatering discharges, equipment and/or vehicle wash waters,
6. Sanitary waste, trash, debris, or other waste products
7. Wastewater from wet saw machinery,
8. Other pollutants that degrade water quality or pose a threat to human health or the environment.

Furthermore, I agree to notify Fort Bend County immediately of any issue caused by or identified by:

A. J. Hurt Jr., Inc

(Company/Contractor)

that is believed to be an immediate threat to human health or the environment.


Contractor Signature

04/02/2018

Date


Adam Buys

Printed Name

General Manager

Title

Fort Bend County Pricing Form
BID 18-052
Term Contract for Oil and Lubricants


Adam Boys, General Manager 4-2-18

Section 12.1: Chevron Products

Vendor Name:

A. J. Hurt Jr., Inc

SAE 10W30 CJ-4/SM Delo 400 XLE	Bid Price
Per Quart in Quart Container	\$ 3.30
Per Gallon in 1 Gallon Bottle	\$ 12.94
Per Gallon in 5 Gallon Pail	\$ 11.36
Per Gallon in 55 Gallon Drum	\$ 11.39

SAE 15W-40 CJ-4 Delo 400	Bid Price
Per Quart in Quart Container	\$ 3.58
Per Gallon in 1 Gallon Bottle	\$ 12.63
Per Gallon in 5 Gallon Pail	\$ 12.48
Per Gallon in 55 Gallon Drum	\$ 11.80
Per Gallon in Bulk	\$ 11.00

SAE 30 Delo 400	Bid Price
Per Quart in Quart Container	\$ 3.62
Per Gallon in 5 Gallon Pail	\$ 11.94
Per Gallon in 55 Gallon Drum	\$ 11.21

SAE 50 Heavy Duty Drive Train (Meets Cat's TO-4 Specifications)	Bid Price
Per Gallon in 5 Gallon Pail	\$ 13.30
Per Gallon in 55 Gallon Drum	\$ 12.08

Hydraulic Oil ISO-46 (Denison HF-2, Vickers I-268-S)	Bid Price
Per Gallon in 5 Gallon Pail	\$ 7.72
Per Gallon in 55 Gallon Drum	\$ 7.25
Per Gallon in Bulk	\$ 6.61

Hydraulic Oil AW 68 (Denison HF-2, Vickers I-286-S)	Bid Price
Per Gallon in 5 Gallon Pail	\$ 8.44
Per Gallon in 55 Gallon Drum	\$ 7.43

Section 12.1: Chevron Products (cont'd)**Vendor Name:**

A. J. Hurt Jr., Inc

TDH Hydraulic/Tractor Fluid (Case MS-1207, John Deere J20C)	Bid Price
Per Gallon in 5 Gallon Pail	\$ 8.58
Per Gallon in 55 Gallon Drum	\$ 7.58
Per Gallon in Bulk	\$ 6.70

Grease Ultra-Duty EP2	Bid Price
Per Tube	\$ 3.03
Per 35# Container	\$ 114.35
Per 120# Container	\$ 386.07

Gear Oil 85-140 GL-5	Bid Price
Per Quart in Quart Container	Not available
Per 35# Container	\$ 68.20

Gear Oil, Universal 85-140 GL-5	Bid Price
Per 35# Container	\$ 68.20

Section 12.2: Conoco/Phillips**Vendor Name:**

A. J. Hurt Jr., Inc

SAE 5W-20 SM, GF-4 76 Super Synthetic Blend Motor Oil	Bid Price
Per Quart, in Quart Container	\$ 2.90

SAE 5W-30 SM, GF-4 76 Super Synthetic Blend Motor Oil	Bid Price
Per Quart, in Quart Container	\$ 2.79

SAE 10W-30 SM, GF-4 76 Super Synthetic Blend Motor Oil	Bid Price
Per Quart, in Quart Container	\$ 2.85

SAE 15W-40 CJ-4 SM Guardol ECT Synthetic Blend	Bid Price
Per Quart, in Quart Container	\$ 4.17
Per Gallon in 1 Gallon Pail	\$ 16.69
Per Gallon in 5 Gallon Pail	\$ 11.53
Per Gallon in 55 Gallon Drum	\$ 10.69
Per Gallon in Bulk	\$ 10.29

SAE 10W 76 T5X 10	Bid Price
Per Gallon in 5 Gallon Pail	\$ 16.65
Per Gallon in 55 Gallon Drum	\$ 15.74

SAE 30 76 T5X 30	Bid Price
Per Gallon in 5 Gallon Pail	\$ 11.53
Per Gallon in 55 Gallon Drum	\$ 11.31

SAE 50 Heavy Duty Drive Train 76 HT-4 50 (Meets Cat's TO-4 Specification)	Bid Price
Per Gallon in 5 Gallon Pail	Not available in this pack size
Per Gallon in 55 Gallon Drum	\$ 12.28

Synthetic Transoil 50 GL-1/MP-1 (Eaton Roadranger PS-164 Rev 7)	Bid Price
Per Gallon in 5 Gallon Pail	Not available in this pack size

Mercon V Automatic Transmission Fluid	Bid Price
Per Quart, in Quart Container	\$ 4.92
Per Gallon in 5 Gallon Pail	Not available in this pack size

Hydraulic Oil ISO-46 (Denison HF-2, Vickers I-268-S)	Bid Price
Per Gallon in 5 Gallon Pail	\$ 12.05
Per Gallon in 55 Gallon Drum	\$ 6.38

Hydraulic Oil AW 68 (Denison HF-2, Vickers I-286-S)	Bid Price
Per Gallon in 5 Gallon Pail	\$ 12.20

Per Gallon in 55 Gallon Drum	\$ 6.62
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Section 12.2: Conoco/Phillips (cont'd)**Vendor Name:**

A. J. Hurt Jr., Inc

TDH Oil Hydraulic/Tractor Fluid (Case MS-1207, John Deere J20C)	Bid Price
Per Gallon in 5 Gallon Pail	\$ 13.42
Per Gallon in 55 Gallon Drum	\$ 8.18
Per Gallon in Bulk	\$ 7.81

Grease NLGI GC-LB Calcium Sulfonate	Bid Price
Per Tube, in Case lot	\$ 4.15
Per 35# Container	\$ 159.68
Per 120# Container	\$ 542.98

Gear Oil 85-140 GL-5/MP-1 76MP Gear Lube	Bid Price
Per Quart, in Quart Container	\$ 5.10
Per 35# Container	\$ 86.60
Per 120# Container	\$ 292.97

Mercon VI Automatic Transmission Fluid	Bid Price
Per Quart, in Quart Container	\$ 4.92
Per Gallon in 5 Gallon Pail	Not available in this pack size

ATF+4 Transmission Fluid	Bid Price
Per Quart, in Quart Container	No Bid
Per Gallon in 5 Gallon Pail	No Bid

Dexron VI Automatic Transmission Fluid	Bid Price
Per Quart, in Quart Container	\$ 4.92
Per Gallon in 5 Gallon Pail	Not available in this pack size

Gear Oil 75W-90 Synthetic	Bid Price
Per Quart, in Quart Container	Not available in this pack size
Per 35# Container	Not available in this pack size

Gear Oil 75W-140 Synthetic	Bid Price
Per Quart, in Quart Container	Not available in this pack size
Per 35# Container	Not available in this pack size

Section 12.3: Antifreeze**Subsection 12.3.1****Vendor Name:**

A. J. Hurt Jr., Inc

List brand below:

Multi-Vehicle Antifreeze, concentrated	Bid Price	Estimated Quantity	Total
Per Gallon in 1 Gallon Bottle	\$ 10.91	100	\$ 1,091.00
Per Gallon in 55 Gallon Drum	\$ 10.71	110	\$ 1,178.10
Total:			\$ 2,269.10

Subsection 12.3.2**List brand below:**

Multi-Vehicle Antifreeze, ready-to-use	Bid Price	Estimated Quantity	Total
Per Gallon in 1 Gallon Bottle	\$ 12.86	100	\$ 1,286.00
Per Gallon in 55 Gallon Drum	\$ 7.18	220	\$ 1,579.60
Total:			\$ 2,865.60

Section 12.4: Generic**Subsection 12.4.1 Chevron Products or Equal to****Vendor Name:**

A. J. Hurt Jr., Inc

List brand below:	
SAE 10W30 CJ-4/SM Delo 400 XLE	Bid Price
Per Quart in Quart Container	No Bid
Per Gallon in 1 Gallon Bottle	No Bid
Per Gallon in 5 Gallon Pail	No Bid
Per Gallon in 55 Gallon Drum	No Bid

List brand below:	
ALLFLEET SYN BLEND 15W40, CJ-4	
SAE 15W-40 CJ-4 Delo 400	Bid Price
Per Quart in Quart Container	\$ 3.25
Per Gallon in 5 Gallon Pail	\$ 8.99
Per Gallon in 55 Gallon Drum	\$ 7.94
Per Gallon in Bulk	\$ 7.17

List brand below:	
SAE 30 Delo 400	Bid Price
Per Quart in Quart Container	No Bid
Per Gallon in 5 Gallon Pail	No Bid
Per Gallon in 55 Gallon Drum	No Bid

List brand below:	
SAE 50 Heavy Duty Drive Train (Meets Cat's requiring TO-4 Fluids)	Bid Price
Per Gallon in 5 Gallon Pail	No Bid
Per Gallon in 55 Gallon Drum	No Bid

List brand below:	
ALLFLEET PRM AW HYD 46	
Hydraulic Oil ISO-46 (Denison HF-2, Vickers I-268-S)	Bid Price
Per Gallon in 5 Gallon Pail	\$ 6.32
Per Gallon in 55 Gallon Drum	\$ 5.51
Per Gallon in Bulk	\$ 5.06

List brand below:	
ALLFLEET PRM AW HYD 68	
Hydraulic Oil AW 68 (Denison HF-2, Vickers I-286-S)	Bid Price
Per Gallon in 5 Gallon Pail	\$ 6.63
Per Gallon in 55 Gallon Drum	\$ 5.88

Subsection 12.4.1 Chevron Products or Equal to (cont'd)**Vendor Name:**

A. J. Hurt Jr., Inc

List brand below:	
ALLFLEET UNIV TRACTOR HYD	
TDH Hydraulic/Tractor Fluid (Case MS-1207, John Deere J20C)	Bid Price
Per Gallon in 5 Gallon Pail	\$ 7.80
Per Gallon in 55 Gallon Drum	\$ 6.68
Per Gallon in Bulk	\$ 5.84

List brand below:	
Grease Ultra-Duty EP2	Bid Price
Per Tube	No Bid
Per 35# Container	No Bid
Per 120# Container	No Bid

List brand below:	
Gear Oil 85-140 GL-5	Bid Price
Per 35# Container	No Bid

Gear Oil, Universal 85-140 GL-5	Bid Price
Per 35# Container	No Bid

Subsection 12.4.2: Conoco/Phillips or Equal to**Vendor Name:**

A. J. Hurt Jr., Inc

List brand below:	
DURAMAX SB 5W20, SN/GF-5	
SAE 5W-20 SM, GF-4 76 Super Synthetic Blend Motor Oil	Bid Price
Per Quart, in Quart Container	\$ 1.92

List brand below:	
DURAMAX SB 5W30, SN/GF-5	
SAE 5W-30 SM, GF-4 76 Super Synthetic Blend Motor Oil	Bid Price
Per Quart, in Quart Container	\$ 1.98

List brand below:	
DURAMAX SB 10W30, SN/GF-5	
SAE 10W-30 SM, GF-4 76 Super Synthetic Blend Motor Oil	Bid Price
Per Quart, in Quart Container	\$ 1.92

List brand below:	
ALLFLEET SB 15W40, API CJ-4	
SAE 15W-40 CJ-4 SM Guardol ECT Synthetic Blend	Bid Price
Per Quart, in Quart Container	\$ 3.25
Per Gallon in 1 Gallon Pail	\$ 9.34
Per Gallon in 5 Gallon Pail	\$ 8.99
Per Gallon in 55 Gallon Drum	\$ 7.94

List brand below:	
CHEVRON URSA HYD 10W	
SAE 10W 76 T5X 10	Bid Price
Per Gallon in 5 Gallon Pail	\$ 14.76
Per Gallon in 55 Gallon Drum	\$ 14.04

List brand below:	
CHEVRON URSA SUPER PLUS 30	
SAE 30 76 T5X 30	Bid Price
Per Gallon in 5 Gallon Pail	\$ 12.92
Per Gallon in 55 Gallon Drum	\$ 12.19

List brand below:	
CHEVRON TORQFORCE 50	
SAE 50 Heavy Duty Drive Train 76 HT-4 50 (Meets Cat's TO-4 Specification)	Bid Price
Per Gallon in 5 Gallon Pail	\$ 13.30
Per Gallon in 55 Gallon Drum	\$ 12.08

Subsection 12.4.2: Conoco/Phillips or Equal to (cont'd)**Vendor Name:**

A. J. Hurt Jr., Inc

List brand below:	
CHEVRON DELO SYN-TRANS HD SAE 50	
Synthetic Transoil 50 GL-1/MP-1 (Eaton Roadranger PS-164 Rev 7)	Bid Price
Per Gallon in 5 Gallon Pail	\$ 34.06

List brand below:	
DURAMAX GLOBAL SYN AFT	
Mercon V Automatic Transmission Fluid	Bid Price
Per Quart, in Quart Container	\$ 3.06
Per Gallon in 5 Gallon Pail	\$ 13.52

List brand below:	
ALLFLEET PRM HYD AW 46	
Hydraulic Oil ISO-46 (Denison HF-2, Vickers I-268-S)	Bid Price
Per Gallon in 5 Gallon Pail	\$ 6.32
Per Gallon in 55 Gallon Drum	\$ 5.51

List brand below:	
ALLFLEET PRM HYD AW 68	
Hydraulic Oil AW 68 (Denison HF-2, Vickers I-286-S)	Bid Price
Per Gallon in 5 Gallon Pail	\$ 6.63
Per Gallon in 55 Gallon Drum	\$ 5.88

List brand below:	
ALLFLEET UNIV TRACTOR HYD FLD	
TDH Oil Hydraulic/Tractor Fluid (Case MS-1207, John Deere J20C)	Bid Price
Per Gallon in 5 Gallon Pail	\$ 7.80
Per Gallon in 55 Gallon Drum	\$ 6.68
Per Gallon in Bulk	\$ 5.84

List brand below:	
Grease NLGI GC-LB Calcium Sulfonate	
Grease NLGI GC-LB Calcium Sulfonate	Bid Price
Per Tube, in Case lot	No Bid
Per 35# Container	No Bid
Per 120# Container	No Bid

List brand below:	
Gear Oil 85-140 GL-5/MP-1 76MP Gear Lube	
Gear Oil 85-140 GL-5/MP-1 76MP Gear Lube	Bid Price
Per 35# Container	No Bid
Per 120# Container	No Bid

Subsection 12.4.2: Conoco/Phillips or Equal to (cont'd)**Vendor Name:**

A. J. Hurt Jr., Inc

List brand below:	
DURAMAX GLOBAL SYN ATF	
Mercon VI Automatic Transmission Fluid	Bid Price
Per Quart, in Quart Container	\$ 3.03

List brand below:	
DURAMAX GLOBAL SYN ATF	
ATF+4 Transmission Fluid	Bid Price
Per Quart, in Quart Container	\$ 3.03

List brand below:	
DURAMAX GLOBAL SYN ATF	
Dexron VI Automatic Transmission Fluid	Bid Price
Per Quart, in Quart Container	\$ 3.03

List brand below:	
ALLFLEET SYN GEAR 75W90	
Gear Oil 75W-90 Synthetic	Bid Price
Per Quart, in Quart Container	\$ 7.53

List brand below:	
ALLFLEET SYN GEAR 75W140	
Gear Oil 75W-140 Synthetic	Bid Price
Per Quart, in Quart Container	\$ 8.40

A.J.Hurt/Reladyne Product Data Sheets

1.Delo 400 XLE

12.1#1

12.4.1#1

2.Delo 400 SDE

12.1#2

3. Delo 400 LE

12.1#3

4.Delo 400 30

12.1 #3

12.4.1 # 3

5.Delo TorqForce

12.1#4

12.4.1#4

12.4.2#6,7

6.Chevron Hydraulic Oil AW

12.1#5,6

7.Chevron 1000 THF

12.1#7

8.Chevron Ultra-Duty Grease

12.1#8

12.4.1 # 8

9.Delo Gear EP-5

12.1 #9,10

10.Shield Choice

12.2#1,2,3

11.Guardol ECT

12.2#4

12. T5X Off-Road Mobile Hyd Fluid

12.2#5

13.T5X DH Diesel, engine Oil

12.2#6

14. PowerDrive Fluid

12.2#7

15.Triton Syn Transoil 50

12.2#8

16.VersaTrans ATF

12.2#9,15,17

17.MegaFlow AW

12.2#10,11

18.PowerTran Fluid

12.2#12

19.Omniguard

12.2#13

20.MP Gear Lube

12.2#14

21. Triton SynLube LDO

12.2 # 18,19

22. Havoline Universal Antifreeze/Coolant

12.3#1,2

23. AllFleet Synthetic Blend

12.4.1#2

12.4.2#4

24. AllFleet Prem. AW Hyd Oils

12.4.1#5,6

12.4.2#10,11

25. DuraMax Global Full Syn Multi-Vehicle ATF

12.4.2#9,15,16,17

26. DuraMax Syn Blend MO

12.4.2 #1,2,3

27. AllFleet Universal Tractor Hyd Fluid

12.4.1#7

12.4.2#12

28. AllFleet GL-5

12.4.1#9,10

12.4.2#14

29. Ursa Hydraulic Oil 10W

12.4.2 # 5

30. Ursa Super Plus

12.4.2 # 6

31. AllFleet Synthetic Gear Oil

12.4.2 # 18,19

12.1 ±1
12.4.1 ±1



DELO® 400 XLE SAE 10W-30 (Synblend)



PRODUCT DESCRIPTION

"Delo. Let's go further.®"

Delo® 400 XLE SAE 10W-30 with ISOSYN® Advanced Technology is a premium synthetic blend fuel economy and mixed fleet engine oil recommended for naturally aspirated and turbocharged four-stroke diesel engines and four-stroke gasoline engines in which the API CK-4 or SN service category and SAE 10W-30 viscosity grade are recommended.

CUSTOMER BENEFITS

Delo 400 XLE SAE 10W-30 (Synblend) with ISOSYN Advanced Technology is an API CK-4 heavy duty engine oil specifically formulated for on-highway applications, including 2017 greenhouse gas (GHG 17) compliant diesel engines with lower CO₂ emissions, and 2010 compliant low emission diesel engines with Selective Catalytic Reduction (SCR), Diesel Particulate Filter (DPF) and Exhaust Gas Recirculation (EGR) systems calling for SAE 10W-30 heavy duty engine oil.

Delo 400 XLE SAE 10W-30 with ISOSYN Advanced Technology is also recommended for off-highway applications when SAE 10W-30 viscosity grade is required. It is formulated for newer engines with Selective Catalytic Reduction (SCR), Diesel Particulate Filter (DPF) and Exhaust Gas Recirculation (EGR) systems. These newer engines generally meet Tier IV (2014) emissions requirements.

It is fully compatible with previous engine models and previous API Oil Service Categories.

Delo 400 XLE SAE 10W-30 delivers value through:

- **Better Low Temperature Pumpability** — Improved flow rate and pumpability versus SAE 15W-40 oils.
 - **Exceptional Deposit Control** — Provides high performance piston deposit control and turbocharger protection due to its superb oxidation performance. Its high performing detergent and dispersant additives allows for extended diesel engine component protection.
 - **Minimized Operating Costs** — Exceptional soot dispersancy and wear control. Cylinders, pistons, rings, and valve train components are well protected against wear and corrosion, providing optimum service life and minimal maintenance. Contributes to maximum vehicle utilization and minimal downtime.
 - **Excellent Emission Control System Life** — Provides optimum Diesel Particulate Filter (DPF) life for minimal downtime and cleaning, thus managing your maintenance costs.
 - **Managed Inventory Costs** — Backwards compatible with previous API Oil Service Categories. Suitable for use in four-stroke gasoline and naturally aspirated turbocharged and modern electronically controlled/low emission diesel engines calling for an SAE 10W-30 heavy duty engine oil. Allows users with a wide mix of engine brands to enjoy simplified inventory and dispensing systems that may contribute to saving money, space and handling time.
 - **Warranty Plus Protection** — Bumper-to-bumper warranty protection from the engine to the drive train. Payment for Chevron lubricant-related damage to your equipment, including parts and labor.¹ Problem resolution and technical advice from Chevron's lubrication experts.
- **Improved Fuel Efficiency** — Up to 1% improvement vs. SAE 15W-40 oils in Class 8 diesel engine bench testing.

¹ See Warranty Plus for details and restrictions.

Product(s) manufactured in the USA.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

A Chevron company product

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- **Access to Chevron's Lubrication and Industry Knowledge** — Helps to maximize your bottom line business results.

FEATURES

Delo® 400 XLE SAE 10W-30 with ISOSYN® Advanced Technology is formulated using advanced additive technology to provide outstanding protection and improved fuel efficiency for on highway applications including 2010 compliant engines.



Delo 400 XLE SAE 10W-30 is formulated with ISOSYN Advanced Technology, which is a combination of Chevron's industry-leading formulating expertise with unique, high performance additive chemistry to help extend the durability of critical engine parts.

ISOSYN ADVANCED TECHNOLOGY

ISOSYN Advanced Technology is the combination of Chevron's outstanding formulating expertise, unique high performance additive chemistry and premium base oils that helps extend the durability of critical diesel engine parts.

Delo 400 products formulated with ISOSYN Advanced Technology can provide improved engine longevity, extended oil drain performance, and excellent diesel component parts protection, helping to extend vehicle life and minimize total cost of ownership when compared with previous generation Chevron HDMO formulations.

ISOSYN Advanced Technology benefits customers by helping to provide:

- Up to 35% improved oil oxidation control*
- Up to 68% improved wear protection*
- Up to 64% improved piston deposit control*

*Results will vary based on the Delo 400 product, operating conditions, and engine types. Always follow OEM recommendations and utilize used oil analysis testing when extending oil drain intervals.

FUNCTIONS

Delo 400 XLE SAE 10W-30 with ISOSYN Advanced Technology helps to keep rings clean and free for maximum combustion pressure and to provide minimal wear. It minimizes valve and piston crown land deposits, thus managing oil consumption. Its high level of ashless dispersants keeps fuel soot in suspension and thus helps to avoid filter plugging, heavy cylinder head sludge, abrasive polishing wear, high viscosity increase, and oil gelling. These problems can result in excessive engine wear and bearing failure on startup, without prior indication to the operator.

Specially selected oxidation inhibitors control oxidation, sludge, and undue thickening. Its unique blend of extreme pressure antiwear additive protects against valve train wear and scuffing of highly loaded parts operating under boundary lubrication. A specially selected viscosity index improver ensures easy flow at low temperatures and excellent film protection in hot engine areas. A defoaming additive protects against air entrapment.

The combination of premium dispersant additives and ISOSYN Advanced Technology allows Delo 400 XLE SAE 10W-30 to effectively disperse soot and keep it in suspension. This minimizes the risk of valve train wear and filter plugging.

Applications

Delo 400 XLE SAE 10W-30 with ISOSYN Advanced Technology is a fuel economy and mixed fleet motor oil recommended for naturally aspirated and turbocharged four-stroke diesel engines and four-stroke gasoline engines in which the API CK-4 or SN service categories and SAE 10W-30 viscosity grade are recommended. It is formulated for engines operating under severe service and a wide range of climatic conditions.

Excellent performance in new advanced engines developed to meet the latest emissions and reliability standards and in engines equipped with features like four-valve heads, super-charging, turbo-charging, direct injection, higher power density, intercooling, full electronic management of fuel and emissions systems, exhaust selective catalytic reduction, exhaust gas recirculation, and exhaust particulate filters.

Delo 400 XLE SAE 10W-30 with ISOSYN Advanced Technology is formulated for exceptional performance with ultra low sulfur diesel (ULSD) and other low sulfur diesel fuels.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

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This product is recommended for use in:

- Today's most modern on highway low emission designs as well as some older engines.
- Today's most modern off highway engines where an SAE 10W-30 viscosity grade is recommended including those adapted for the most stringent emissions standards in construction, agriculture, marine, and mining applications.
- Excellent performance in Auxiliary Power Units (APUs) found on trailer refrigeration (refer) units or on truck tractors to help reduce main engine idle.

Delo® 400 XLE SAE 10W-30 is approved for:

- **API Service Categories** CK-4, CJ-4, CI-4, CI-4 Plus, SN
- **Cummins** CES 20086
- **Daimler MB-Approval** 228.31
- **Daimler MB-Approval** 228.51
- **Detroit Fluids Specification (DFS)** 93K222
- **DEUTZ** DQC III-10 LA
- **Mack** EOS 4.5
- **Renault** VI RLD-4
- **Volvo** VDS-4.5

Delo® 400 XLE SAE 10W-30 is recommended for:

- **ACEA** E6/E9
- **Caterpillar** ECF-3
- **JASO** DH-2
- **MAN** M 3575
- **MTU** Category 2.1

TYPICAL TEST DATA

SAE Grade	10W-30
Product Number	257000
SDS Number	
U.S.	42039
Canada	42040
Mexico	42041
Density at 15°C, kg/L	0.868
Viscosity, Kinematic	
mm ² /s at 40°C	81
mm ² /s at 100°C	11.9
Viscosity, Cold Crank, °C/mPa.s	-25/6300
Viscosity, MRV, °C/mPa.s	-30/20,400
Viscosity Index	142
Flash Point, °C(°F)	234(453)
Pour Point, °C(°F)	-46(-51)
Sulfated Ash, mass %	0.98
Base Number, mgKOH/g, ASTM D2896	10.3
Phosphorus, mass %	0.076
Sulfur, mass %	0.27
Zinc, mass %	0.082

Minor variations in product typical test data are to be expected in normal manufacturing.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

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12.1 #2



DELO® 400 SDE

SAE 15W-40



PRODUCT DESCRIPTION

Delo. Let's go further.®

Delo® 400 SDE SAE 15W-40 with ISOSYN® Advanced Technology is a heavy duty engine oil recommended for naturally aspirated and turbocharged four-stroke diesel engines and four-stroke gasoline engines in which the API CK-4 or SN service category and SAE 15W-40 viscosity grade are recommended. Delo 400 SDE 15W-40 is also backwards compatible with diesel engines in which the API CJ-4, CI-4, CI-4 Plus and CH-4 service categories are recommended.

CUSTOMER BENEFITS

Delo 400 SDE SAE 15W-40 with ISOSYN Advanced Technology is an API CK-4 heavy duty engine oil specifically formulated for 2017 greenhouse gas (GHG 17) compliant diesel engines designed to meet lower CO₂ emissions and improved fuel economy, in addition to EPA 2010 compliant low emission diesel engines with Selective Catalytic Reduction (SCR), Diesel Particulate Filter (DPF) and Exhaust Gas Recirculation (EGR) systems. It is fully compatible with previous engine models and previous API Oil Service Categories. It delivers value through:

- **Minimized Operating Costs**— Exceptional soot dispersancy and wear control. Cylinders, pistons, rings, and valve train components are well protected against wear and corrosion, providing optimum service life and minimal maintenance. Contributes to maximum vehicle utilization and minimal downtime.
- **Excellent Emission Control System Life** — Provides optimum Diesel Particulate Filter (DPF) life for minimal downtime and cleaning, thus managing your maintenance costs.
- **Managed Inventory Costs** — Backward compatible with previous API Oil Service Categories

and engine models. Suitable for use in four-stroke gasoline and naturally aspirated, turbocharged and modern electronically controlled/low emission diesel engines calling for an SAE 15W-40 heavy duty motor oil. Allows users with a wide mix of engine brands to enjoy simplified inventory and dispensing systems that may contribute to saving money, space and handling time.

- **Warranty Plus Protection** — Bumper-to-bumper warranty protection from the engine to the drive train. Payment for Chevron lubricant-related damage to your equipment, including parts and labor.¹ Problem resolution and technical advice from Chevron's lubrication experts.
- **Access to Chevron's Lubrication and Industry Knowledge** — Helps maximize your bottom line business results.

FEATURES

Delo 400 SDE SAE 15W-40 with ISOSYN Advanced Technology is a super premium quality conventional engine oil which exceeds industry and engine manufacturers' performance requirements. It is the most recommended OEM viscosity grade for over-the-road and off-highway diesel engines.



It is formulated using the most advanced additive technology to provide outstanding protection for on- and off-highway applications, including GHG 17 and EPA 2010 compliant engines of on-highway diesel trucks burning Ultra Low Sulfur Diesel (ULSD), as well as 2014 compliant engines for off-highway vehicle diesel engines.

¹ See Warranty Plus for details and restrictions.

Product(s) manufactured in the USA and Colombia.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

A Chevron company product

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Today, Delo® 400 SDE SAE 15W-40 with ISOSYN® Advanced Technology meets the most stringent EGR soot control requirements.

Delo 400 SDE SAE 15W-40 with ISOSYN Advanced Technology has been specifically designed to meet the demands of EGR and SCR engines. It is formulated to comply with passenger car requirements where API SN performance standard and SAE 15W-40 viscosity grade are acceptable, and when maximum 800 ppm phosphorous is specified.

Delo 400 SDE SAE 15W-40 is formulated with ISOSYN Advanced Technology, which is the combination of Chevron's industry leading formulating expertise with unique, high performance additive chemistry to help extend the durability of your critical diesel engine parts.

ISOSYN ADVANCED TECHNOLOGY

ISOSYN Advanced Technology is the combination of Chevron's outstanding formulating expertise, unique high performance additive chemistry and premium base oils that helps extend the durability of critical diesel engine parts.

Delo 400 products formulated with ISOSYN Advanced Technology can provide improved engine longevity, extended oil drain performance, and excellent diesel component parts protection, helping to extend vehicle life and minimize total cost of ownership when compared with previous generation Chevron HDMO formulations.

ISOSYN Advanced Technology benefits customers by helping to provide:

- Up to 35% improved oil oxidation control*
- Up to 68% improved wear protection*
- Up to 64% improved piston deposit control*

*Results will vary based on the particular Delo 400 product, operating conditions, and engine types. Always follow OEM recommendations and utilize used oil analysis testing when extending oil drain intervals.

FUNCTIONS

Delo 400 SDE SAE 15W-40 with ISOSYN Advanced Technology helps keep rings clean and free for maximum combustion pressure and minimal wear. Delo 400 SDE SAE 15W-40 minimizes valve and piston crown land deposits, thereby maintaining minimal oil

consumption. Its high level of ashless dispersants keep fuel soot in suspension and help avoid filter plugging, heavy cylinder head sludge, abrasive polishing wear, high viscosity increase, and oil gelling. These problems can result in excessive engine wear and bearing failure on startup, without prior indication to the operator.

Specially selected oxidation inhibitors control oxidation, sludge, and undue thickening during oil drain periods. Delo 400 SDE SAE 15W-40's unique antiwear additive protects against valve train wear and scuffing of highly loaded parts operating under boundary lubrication. A specially selected viscosity index improver ensures easy flow at low temperatures and excellent film protection in hot engine areas.

The combination of premium dispersant additives and ISOSYN Advanced Technology allows Delo 400 SDE SAE 15W-40 to effectively disperse soot and keep it in suspension. This minimizes the risk of valve train wear, lever polishing, and filter plugging.

APPLICATIONS

Delo 400 SDE SAE 15W-40 with ISOSYN Advanced Technology is a mixed fleet motor oil recommended for naturally aspirated and turbocharged four-stroke diesel engines and four-stroke gasoline engines in which the API CK-4 or SN service category and SAE 15W-40 viscosity grade are recommended. It is formulated for engines operating under severe service and a wide range of climatic conditions.

Delo 400 SDE SAE 15W-40 with ISOSYN Advanced Technology is excellent for use in new advanced engines developed to meet the latest emissions and reliability standards and in engines equipped with features like four-valve heads, super-charging, turbo-charging, direct injection, shorter piston crowns, higher power density, intercooling, full electronic management of fuel and emissions systems, exhaust selective catalytic reduction, exhaust gas recirculation, and exhaust particulate filters.

It is formulated for exceptional performance with ultra low sulfur diesel and low sulfur diesel fuels.

This product is recommended for use in today's most modern off-highway engines including those adapted for current emissions standards in construction, agriculture, mining, and marine applications

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

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Delo® 400 SDE SAE 15W-40 is approved for:

- **API Service Categories** CK-4, CJ-4, CI-4 PLUS, CI-4, CH-4, SN
- **Cummins** CES 20086
- **Daimler MB-Approval** 228.31
- **Detroit Fluids Specification** (DFS) 93K222
- **DEUTZ** DQC III-10 LA
- **Mack** EOS 4.5
- **MTU** Category 2.1
- **Renault** RLD-4
- **Volvo** VDS-4.5

Delo 400 SDE SAE 15W-40 meets the requirements for:

- **ACEA** E9
- **Caterpillar** ECF-3
- **JASO** DH-2
- **MAN** M3575

TYPICAL TEST DATA

SAE Grade	15W-40
<i>Product Number</i>	222290
<i>SDS Number</i>	
<i>U.S.</i>	42671
<i>Canada</i>	43551
<i>Mexico</i>	43552
<i>Colombia</i>	43918
<i>El Salvador</i>	43919
Density at 15°C, kg/L	0.877
Viscosity, Kinematic mm ² /s at 40°C mm ² /s at 100°C	112 14.6
Viscosity, Cold Crank, °C/mPa.s	-20/5400
Viscosity, MRV, °C/mPa.s	-25/16,700
Viscosity, HTHS, mPa.s	4.2
Viscosity Index	134
Flash Point, °C(°F)	230(446)
Pour Point, °C(°F)	-43(-45)
Sulfated Ash, mass %	1.0
Base Number, mgKOH/g, ASTM D2896	10
Phosphorus, mass %	0.076
Sulfur, mass %	0.3
Zinc, mass %	0.08

Minor variations in product typical test data are to be expected in normal manufacturing.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

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12.1 #3



DELO® 400 LE

SAE 15W-40

PRODUCT DESCRIPTION

"Delo. Let's go further.®"

Delo® 400 LE SAE 15W-40 is a mixed fleet motor oil recommended for naturally aspirated and turbocharged four-stroke diesel engines and four-stroke gasoline engines in which the API CJ-4 service category and SAE 15W-40 viscosity grade are recommended.

CUSTOMER BENEFITS

Delo 400 LE SAE 15W-40 is an API CJ-4 heavy duty engine oil specifically formulated for on-highway and off-highway applications including 2010 compliant low emission diesel engines with Selective Catalytic Reduction (SCR), Diesel Particulate Filter (DPF) and Exhaust Gas Recirculation (EGR) systems. It is fully compatible with previous engine models and previous API Oil Service Categories. It delivers value through:

- **Minimized operating costs** — Exceptional soot dispersancy and wear control. Cylinders, pistons, rings, and injectors are well protected against wear and corrosion, providing optimum service life and minimal maintenance. Contributes to maximum vehicle utilization and minimal downtime.
- **Excellent emission control system life** — Provides optimum Diesel Particulate Filter (DPF) life for minimal downtime and cleaning, thus managing your maintenance costs.
- **Managed inventory costs** — Backward compatible with previous API Oil Service Categories and engine models. Suitable for use in four-stroke gasoline and naturally aspirated, turbocharged and modern electronically controlled/low emission diesel engines calling for an SAE 15W-40 heavy duty motor oil. Allows users with a wide mix of engine brands to enjoy simplified inventory and dispensing systems that may contribute to saving money, space and handling time.

- **Warranty Plus protection** — Bumper-to-bumper warranty protection from the engine to the drive train. Payment for Chevron lubricant-related damage to your equipment, including parts and labor.¹ Problem resolution and technical advice from Chevron's lubrication experts.
- **Access to Chevron's lubrication and industry knowledge** — Help maximize your bottom line business results.

FEATURES

Delo® 400 LE SAE 15W-40 is an industry leading, premium quality engine oil meeting industry and engine manufacturers' performance requirements.

ISOSYN[®]
TECHNOLOGY

It is formulated using advanced additive technology to provide outstanding protection for on- and off-highway applications including 2010 compliant engines of on highway diesel trucks burning Ultra Low Sulfur Diesel (ULSD).

Delo 400 LE SAE 15W-40 is formulated with ISOSYN® Technology. ISOSYN Technology is a combination of premium base oils and high performance additives with Chevron's formulating expertise that "Rivals Synthetic Performance" and provides superb diesel engine parts protection - all at an outstanding value. ISOSYN Technology benefits customers by helping:

- Provide Extended Service Protection
- Maximize Engine Durability
- Minimize Operating Cost

Today, Delo 400 LE SAE 15W-40 meets the most stringent EGR soot control and particulate requirements.

¹ See Warranty Plus for details and restrictions.

Product(s) manufactured in the USA.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

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Delo 400 LE SAE 15W-40 has been specifically designed to meet the demands of EGR and SCR engines while at the same time providing exceptional performance in conventional engines and other engine technologies like Caterpillar ACERT.

FUNCTIONS

Delo 400 LE SAE 15W-40 helps keep rings clean and free for maximum combustion pressure and minimal wear. Delo 400 LE SAE 15W-40 minimizes valve and piston crown land deposits, leading to minimal oil consumption. Its high level of ashless dispersants keeps fuel soot in suspension and helps avoid filter plugging, heavy cylinder head sludge, abrasive polishing wear, high viscosity increase, and oil gelling. These problems can result in excessive engine wear and bearing failure on startup, without prior indication to the operator.

Specially selected oxidation inhibitors control oxidation, sludge, and undue thickening during oil drain periods. Delo 400 LE SAE 15W-40's unique blend of extreme pressure antiwear additive protects against valve train wear and scuffing of highly loaded parts operating under boundary lubrication. A specially selected viscosity index improver ensures easy flow at low temperatures and excellent film protection in hot engine areas. A defoaming additive helps prevent air entrapment.

The combination of premium dispersant additives and ISOSYN Technology allows Delo 400 LE SAE 15W-40 to effectively disperse soot and keep it in suspension. This minimizes the risk of valve train wear, lever polishing, and filter plugging.

APPLICATIONS

Delo 400 LE SAE 15W-40 is a mixed fleet motor oil recommended for naturally aspirated and turbocharged four-stroke diesel engines and four-stroke gasoline engines in which the API CJ-4 service category and SAE 15W-40 viscosity grade are recommended. It is formulated for engines operating under severe service and a wide range of climatic conditions.

Delo 400 LE SAE 15W-40 is excellent for use in engines equipped with features like four-valve heads, supercharging, turbo-charging, direct injection, shorter piston crowns, higher power density, intercooling, full electronic management of fuel and emissions systems, exhaust selective catalytic reduction, exhaust gas recirculation, and exhaust particulate filters.

It is formulated for exceptional performance with Ultra Low Sulfur Diesel and low sulfur diesel fuels.

This product is recommended for use in:

- Today's on-highway low emission designs as well as in older engines.
- Today's off-highway engines including those adapted for current emissions standards in construction, agriculture, marine, and mining applications.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

15 January 2018
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Delo® 400 LE SAE 15W-40 is approved for:

- **API Service Categories** CJ-4, CI-4 PLUS, CI-4, CH-4, SM
- **Cummins** CES 20081
- **Detroit Diesel** DDC Power Guard 93K218
- **DEUTZ** DQC III-10 LA
- **Mack** EO-O Premium Plus
- **MAN** M 3575
- **MB-Approval** 228.31
- **MTU** Category 2.1
- **Renault** VI RLD-3
- **Volvo** VDS-4
- **ZF** TE-ML 04C
- **ZF** TE-ML 23B

Delo 400 LE SAE 15W-40 meets the requirements of:

- **Caterpillar** ECF-3, ECF-2
- **Ford** WSS-M2C171-E
- **JASO** DH-2
- **ACEA European Service Categories** E9, E7
- **major diesel engine manufacturers':**
 - Caterpillar
 - Cummins
 - Detroit Diesel
 - MACK
 - MAN
 - Mercedes
 - Volvo

Delo 400 LE SAE 15W-40 has successfully completed a 7000 hour field trial in Caterpillar 3612 engines with used oil analysis and engine inspections.

Resulting from satisfactory field trial performance, Delo 400 LE SAE 15W-40 is approved by MTU for Series 4000 T94/T94L engines in oil and gas fracking applications in North America. This is the first MTU category 2.1 approved oil for this application that typically requires a category 3.0 or 3.1 approval.

TYPICAL TEST DATA

SAE Grade	15W-40
<i>Product Number</i>	222220
<i>SDS Number</i>	17108
Density at 15°C, kg/L	0.8806
Viscosity, Kinematic mm ² /s at 40°C mm ² /s at 100°C	131 15.7
Viscosity, Cold Crank, °C/mPa.s	-20/6400
Viscosity, MRV, °C/mPa.s	-25/26,400
Viscosity Index	126
Flash Point, °C(°F), minimum	> 204(> 399)
Pour Point, °C(°F)	-33(-27)
Sulfated Ash, mass %	1.0
Base Number, mgKOH/g, ASTM D2896	9.3
Phosphorus, mass %	0.12
Sulfur, mass %	0.32
Zinc, mass %	0.13

Minor variations in product typical test data are to be expected in normal manufacturing.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

15 January 2018
HDMO-25

12.1 # 3
12.4.1 # 3



DELO® 400

SAE 10W, 20, 30, 40, 50

PRODUCT DESCRIPTION

"Delo. Let's go further.®"

Delo® 400 monograde oils are mixed-fleet motor oils recommended for older four-stroke gasoline and diesel engines.

CUSTOMER BENEFITS

Delo 400 monograde motor oils are recommended for use in four-stroke gasoline and diesel engines where the SAE 10W, 20, 30, 40 or 50 monogrades are specified by the OEM.

Delo 400 monograde heavy duty motor oils deliver value through:

- **Controlled oil costs** — Minimal crownland deposits and outstanding oxidation stability lead to the ability to minimize oil consumption.
- **Long engine life** — Excellent control of deposits and wear optimize the engine overhaul intervals.
- **Exceptional engine cleanliness** — High detergency provides excellent deposit and sludge control in the piston ring belt area.
- **Warranty Plus protection** — Bumper-to-bumper warranty protection from the engine to the drive train. Payment for Chevron lubricant-related damage to your equipment, including parts and labor.* Problem resolution and technical advice from Chevron's lubrication experts.
- **Access to Chevron's lubrication and industry knowledge** — Help maximize your bottom line business results.

FEATURES

Delo 400 monograde heavy duty motor oils are premium quality engine oils.

* See Warranty Plus for details and restrictions.

Product(s) manufactured in the USA.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

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They are formulated utilizing advanced additive technology which helps provide outstanding engine protection for four-stroke diesel engines requiring a monograde engine oil.

Delo 400 SAE 10W, 20, 30, 40 and 50 are manufactured using carefully selected premium paraffinic base oils and an optimal blend of dispersant, detergent, oxidation inhibition, antiwear, corrosion inhibition, and defoaming additives.

FUNCTIONS

Delo 400 monograde motor oils are high performance crankcase oils for older diesel engines requiring 10W, 20, 30, 40 or 50 monograde engine oil.

They are manufactured using selected premium paraffinic base oils and detergent, dispersant, wear control, antioxidant, corrosion inhibitor, and foam suppressant additives.

APPLICATIONS

Delo 400 monograde oils are mixed-fleet motor oils recommended for older four-stroke gasoline and diesel engines that require a monograde engine oil.

Delo 400 oils are formulated for exceptional performance in older engines using both normal, high, and low sulfur diesel fuels.

Delo 400 monograde oils are not recommended for use in DDC two-stroke engines.

Delo 400 is approved for:

- **MAN M 3275-2** (SAE 30, 40)
- **MB-Approval 228.2** (SAE 30, 40)
- **MTU Category 2** (SAE 30, 40)

Delo® 400 — Continued

Delo® 400 meets the requirements of:

- **API Service Categories**

- CF†
- SJ (SAE 30, 40)

- **MAN 270 (SAE 30, 40)**

† Obsolete specification.

TYPICAL TEST DATA

SAE Grade	10W	20	30	40	50
Product Number	235109	235117	235118	235120	235119
SDS Number	28323	28323	6711	6711	6711
Density at 15°C, kg/L	0.8700	0.8747	0.8819	0.8863	0.8934
Viscosity, Kinematic mm ² /s at 40°C mm ² /s at 100°C	45 7.0	61 8.5	94 11.5	136 14.7	214 19.3
Viscosity, Cold Crank, °C/mPa.s	-25/5370	—	—	—	—
Viscosity Index	113	111	111	108	102
Flash Point, °C(°F)	226(439)	236(457)	236(457)	250(482)	264(507)
Pour Point, °C(°F)	-30(-22)	-30(-22)	-27(-17)	-24(-11)	-21(-6)
Sulfated Ash, mass %	0.95	0.95	1.5	1.5	0.95
Base Number, mgKOH/g, ASTM D2896	6.3	6.3	10.1	10.1	6.3
Phosphorus, mass %	0.069	0.069	0.11	0.11	0.069
Zinc, mass %	0.076	0.076	0.122	0.122	0.076

Minor variations in product typical test data are to be expected in normal manufacturing.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

21 September 2015
HDMO-50

12.1 #4

12.4.1 #4

12.4.2 #6,7



DELO® TORQFORCE®

SAE 10W, 30, 50, 60

PRODUCT DESCRIPTION

Delo® TorqForce® products are high performance lubricants designed for use in transmissions, final drives, and hydraulic systems in Allison, Caterpillar, Dana Powershift, Komatsu, Komatsu Dresser, Tremec / TTC, Vickers and ZF equipment.

CUSTOMER BENEFITS

Delo TorqForce products deliver value through:

- **Long equipment life** — Special additives help protect metal surfaces against scuffing and wear even under severe operating conditions of high temperature and high load.
- **Smooth operation** — Excellent frictional control helps prevent clutch slippage and offers quiet and efficient action of transmission and brakes while minimizing wear.
- **Minimal downtime** — Good compatibility with seals, O-rings, and packing materials maintains their good condition and keeps leakage at a minimum.
- **Improved filterability** — Delo TorqForce is formulated with special additive chemistry that allows for ultra-fine filtration which provides exceptional fluid cleanliness and equipment reliability performance.
- **Long oil life** — Outstanding ability of the base stock to withstand oxidation at high operating temperatures results in maximum service life for the oil.
- **Reliable operation** — Formulated to keep metal parts clean and free of varnish and sludge deposits that could result in premature breakdown.
- **Minimizing weather and storage concerns** — Protects against rust and corrosion of highly finished precision parts when operating in humid conditions and during seasonal shutdown periods.

- **Warranty Plus protection** — Bumper-to-bumper warranty protection from the engine to the drive train. Payment for Chevron lubricant-related damage to your equipment, including parts and labor.¹ Problem resolution and technical advice from Chevron's lubrication experts.

FEATURES

Delo TorqForce products are high performance lubricants designed for use in transmissions, final drives, and hydraulic systems requiring a fluid meeting Caterpillar TO-4 or Allison C-4 requirements. They are also recommended for transmission and hydraulic systems manufactured by Dana Powershift, Komatsu, Komatsu Dresser, Tremec/TTC, Vickers and ZF.

ISOSYN[®]
TECHNOLOGY[®]

They are manufactured using highly refined base oils, detergents, dispersants, oxidation and corrosion inhibitors, antiwear and extreme pressure agents, and a foam suppressant.

Delo TorqForce products are designed for both newly developed and older model drive train components.

They offer excellent friction retention, wear control, seal compatibility, oxidation stability, and viscosity stability.

The frictional characteristics of the fluid are retained over the life of the lubricant.

Delo TorqForce products are formulated to help protect against wear, even in severe service conditions and under high loads. They help protect precision parts against wear under high load conditions by controlling the formation of corrosion, varnish, and sludge.

Delo TorqForce products are compatible with new and traditional seal and clutch materials.

¹ See Warranty Plus for details and restrictions.

Product(s) manufactured in the USA, Colombia and El Salvador.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

A Chevron company product

1 July 2016
TTF-31

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APPLICATIONS

Delo® TorqForce® products are recommended for use in Caterpillar, Komatsu, transmissions, final drives, and wet brakes, and in Allison, Dana Powershift, Tremec/TTC, Vickers and ZF transmissions, torque converters, and hydraulic systems.

Under normal ambient temperatures, **hydraulic systems will use the SAE 10W** viscosity grade. SAE 10W and 30 are recommended for mobile hydraulic systems where operating requirements are severe.

Transmissions will use the SAE 30 viscosity grade. Delo TorqForce products are also recommended for heavy duty off highway automatic transmissions requiring an SAE 10W, 30, 50 or 60 fluid.

Final drives will use the SAE 50 viscosity grade at normal temperatures and the SAE 60 at high ambient temperatures.

In order to meet Caterpillar specifications, Delo TorqForce products are not friction modified. Thus, they are not recommended for equipment made by other OEMs who require friction modified fluids in order

to assure smooth and quiet brake operation. For example, many farm tractor OEMs require fluids such as Chevron 1000 THF in order to eliminate brake noise.

Delo TorqForce products are approved for:

- **ZF TE-ML 03C** (SAE 10W, 30)
- **ZF TE-ML 07F** (SAE 30)

Delo TorqForce products meet:

- requirements of **Allison C-4** (SAE 10W, 30)
- service requirements of **Caterpillar TO-4**

Delo TorqForce products are recommended for:

- **Dana Powershift** (SAE 10W, 30)
- **Komatsu KES 07.868.1**
- **Komatsu Dresser**
- **Tremec/TTC**
- **Vickers 35VQ25** (SAE 10W, 30)

Do not use in high pressure systems in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

TYPICAL TEST DATA

SAE Grade	10W	30	50	60
<i>Product Number</i>	293105	293106	293107	293108
<i>SDS/MSDS Number</i>				
USA	38351	38351	38351	38351
Colombia	38355	38355	38355	38355
El Salvador	39331	39331	39331	—
API Gravity	30.0	28.7	26.5	25.0
Viscosity, Kinematic				
cSt at 40°C	43.8	87.5	199	319
cSt at 100°C	6.8	10.9	18.5	25.0
Viscosity, Cold Crank, °C/Poise	-25/60	—	—	—
Viscosity Index	110	110	103	101
Flash Point, °C(°F)	238(460)	266(511)	266(511)	266(511)
Pour Point, °C(°F)	-33(-27)	-27(-17)	-27(-17)	-15(+5)

Minor variations in product typical test data are to be expected in normal manufacturing.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

1 July 2016
TTF-31

12.1 * 5,6



CHEVRON HYDRAULIC OIL AW

32, 46, 68

PRODUCT DESCRIPTION

Chevron Hydraulic Oils AW are designed to give excellent hydraulic pump protection.

CUSTOMER BENEFITS

Chevron Hydraulic Oils AW deliver value through:

- **Good oxidation stability** — Provide good service life in high pressure service.
- **Rust and corrosion protection** — Give excellent protection against corrosion of both copper and steel, and passes the ASTM D665A distilled water rust test and ASTM D665B synthetic sea water rust test.
- **Minimum viscosity change** over a wide temperature range.
- **Good foam inhibition** — Contain special foam suppressant, minimizing both foaming and aeration problems.
- **Excellent antiwear properties**
- **Meets major pump manufacturer's requirements** — ISO 32, 46 and 68 meet the requirements of leading hydraulic pump manufacturers for antiwear-type hydraulic fluids in both vane- and piston-type pumps.
- **Good stability in the presence of water** by ASTM D2619 Hydrolytic Stability test and the Denison hybrid T6H20C Wet Pump test.
- **Good thermal stability** in the presence of copper and steel by the MAG Cincinnati Machine Thermal Stability, Procedure A, test.
- **Fast water separation** — Minimize rust problems by fast release of water.

FEATURES

Chevron Hydraulic Oils AW are formulated with refined paraffinic base oils. They provide excellent antiwear protection, oxidation and corrosion inhibition, as well as foam and aeration suppression. All grades have excellent demulsibility characteristics.

Hydraulic systems, due to the nature of their operation, experience accelerated wear unless they are protected by clean, high quality antiwear hydraulic oils. Surging pressures in pumps and valves can increase metal-to-metal contact unless antiwear protection is present. The antiwear additives in Chevron Hydraulic Oils AW create a protective film on the metal surfaces. This protective film minimizes metal-to-metal contact, which is most severe in vane- and gear-type pumps. As hydraulic pressures increase over 1000 psi, the need for antiwear protection increases proportionally.

APPLICATIONS

Chevron Hydraulic Oils AW are versatile lubricants available in ISO viscosity grades 32, 46 and 68.

ISO 32, 46 and 68 grades are most commonly used for hydraulics with vane-, piston-, or gear-type pumps, especially where pressures exceed 1000 psi. They can also be used to lubricate lightly loaded reciprocating compressors.

Chevron Hydraulic Oils AW **32, 46 and 68**:

- meet major pump manufacturer requirements including **Eaton-Vickers** 35VQ25A for M-2950-S (Mobile) and I-286-S (Stationary), **Parker Hannifin (Denison)** HF0/HF2/T6H20C, and **Bosch Rexroth** Racine Model S
- meet **ASTM** D6158 HM
- meet **DIN** 51524-2
- meet **ISO** 11158 L-HM

Product(s) manufactured in the USA, Colombia and El Salvador.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

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1 July 2016
IO-110

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Chevron Hydraulic Oil AW — Continued

- meet **MAG Cincinnati, Cincinnati Machine** specifications P-68 (ISO 32), P-70 (ISO 46), and P-69 (ISO 68)

Chevron Hydraulic Oils AW 32, 46 and 68 are registered by **NSF** and are acceptable as lubricants where there is no possibility of food contact (H2) in and around food processing areas. The NSF Nonfood Compounds Registration Program is a continuation of the USDA product approval and listing program, which

is based on meeting regulatory requirements of appropriate use, ingredient review and labeling verification.

Please consult with your equipment manufacturer if equipment is operating outside normal operating conditions. Do not use in high pressure systems in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

TYPICAL TEST DATA

ISO Grade	32	46	68
Product Number	255675	255674	255673
SDS Number	7457	7457	7457
Colombia	-	32564	-
El Salvador	-	32563	-
API Gravity	32.6	31.8	31.6
Viscosity, Kinematic cSt at 40°C	30.4	43.7	64.6
cSt at 100°C	5.2	6.5	8.4
Viscosity, Saybolt SUS at 100°F	157	225	334
SUS at 210°F	44	48	55
Viscosity Index	98	98	99
Flash Point, °C(°F)	220(428)	226(439)	235(455)
Pour Point, °C(°F)	-25(-13)	-23(-9)	-22(-8)
Oxidation Stability Hours to 2.0 mg KOH/g acid number, ASTM D943	> 2000	> 2000	> 2000

Minor variations in product typical test data are to be expected in normal manufacturing.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

1 July 2016
IO-110

12.1 #7



⑦

CHEVRON 1000 THF

PRODUCT DESCRIPTION

Chevron 1000 THF is a high quality, multifunctional tractor hydraulic fluid, specially formulated for use in transmissions, final drives, wet brakes, and hydraulic systems of tractors and other equipment employing a common fluid reservoir.

CUSTOMER BENEFITS

Chevron 1000 THF delivers value through:

- **Low operating costs** — Chevron 1000 THF meets or exceeds fluid performance requirements of most OEM's, maintaining efficiency and reliability while minimizing overall operating costs.
- **Long equipment life** — Special additives protect metal surfaces against scuffing and wear even under severe operating conditions leading to maximum equipment life.
- **Low inventory cost** — One fluid does the job of a full range of tractor hydraulic systems. Can replace multiple products and free up shelf space too!
- **Minimizing weather and storage concerns** — Protects against rust and corrosion of highly finished precision parts when operating in humid conditions and during seasonal shutdown periods.
- **Minimal downtime** — Good compatibility with seals, O-rings, and packing materials maintains their good condition and keeps leakage at a minimum.
- **Smooth operation** — Formulated to suppress brake "chatter" and transmission "slip" for quiet and efficient action of brakes and transmission.
- **Reliable operation** — Formulation helps keep metal parts clean and free of varnish and sludge deposits that could result in premature breakdown.
- **Fast service time** — Orange color helps identify origin point of incidental leaks for easy detection and quick remedy.

FEATURES

Chevron 1000 THF is a high quality, multifunctional tractor hydraulic fluid, specially formulated for use in transmissions, final drives, wet brakes, and hydraulic systems of tractors and other equipment employing a common fluid reservoir.

It is formulated with highly refined base stocks, a viscosity index improver, oxidation and corrosion inhibitors, antiwear and film strength additives, an antifoaming agent, and a pour point depressant.

Its distinctive orange color allows for easy product identification and leak detection.

Chevron 1000 THF meets the needs of modern tractors for a multi-functional lubricant. It is designed for many uses, such as lubrication of the transmission and final drive, and serves as a hydraulic fluid to operate power steering units, brakes, implements, and attachments.

Chevron 1000 THF is formulated to suppress brake "chatter" and excessive brake facing wear. It offers smooth operation of clutch packs and wet brakes, provides excellent shifting action, provides exceptional rust and corrosion protection for vital parts, and minimizes leakage because of good compatibility with seals, O-rings, and packing materials.

It helps prevent sludge and varnish formation, protects metal surfaces against scuffing and wear, and provides outstanding lubrication for spur, helical, and spiral bevel final drive gears.

Chevron 1000 THF is compatible with equipment manufacturer's proprietary fluids and other fluids of this type.

APPLICATIONS

Chevron 1000 THF is recommended for use:

- in ABB Dodge controlled start-up transmissions
- in non-hypoid API GL-4 applications.
- in Hitachi mid-sized wheel loader axle applications, transfer case and hydraulics

Product(s) manufactured in the USA, Colombia and El Salvador.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

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1 July 2016
TTF-3

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- as a multifunctional fluid in many types of farm tractors and equipment.
- in applications which call for the following OEM lubricant specifications:
 - **AGCO** — improved power fluid 821XL
 - **Case Corporation** — JIC-143, JIC-145, MS 1206, MS 1207, MS 1209, MS 1210 (TCH)
 - **Case New Holland** — MAT 3525, MAT 3505
 - **Caterpillar** TO-2
 - **Ford New Holland** — ESN-M2C134-D, FNHA 2 C 201
 - **International Harvester** B6
 - **John Deere** — J20C
 - **Kubota** UDT
 - **Massey Ferguson** — M1135, M1141, M1143, M1145
 - **Minneapolis-Moline** — Q-1766, Q-1722, Q-1766B
 - **Oliver** — Q-1705
 - **Renk Doromat** — 874A and 874B
 - **Volvo** WB 101
 - **White Farm Equipment** — Q-1826
 - **ZF** — TE-ML 03E, TE-ML 05F, TE-ML 06K, TE-ML 17E, TE-ML 21F

Chevron 1000 THF is also an excellent hydraulic fluid for many types of hydraulic systems requiring an anti-wear hydraulic fluid in this viscosity range. It passes the High Pressure Vane Pump Test, ASTM D2882, with less than 15 mg steel weight loss.

Do not use in high pressure systems in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

TYPICAL TEST DATA

<i>Product Number</i>	226606
<i>SDS/MSDS Number</i>	
USA	7648
Colombia	33702
El Salvador	33703
API Gravity	29.9
Viscosity, Kinematic	
cSt at 40°C	58.4
cSt at 100°C	9.5
Viscosity, Saybolt	
SUS at 100°F	298
SUS at 210°F	58.3
Viscosity, Brookfield	
cP at -35°C	40,000
Viscosity Index	145
Flash Point, °C(°F)	235(455)
Pour Point, °C(°F)	-42(-44)
Color	Orange

Minor variations in product typical test data are to be expected in normal manufacturing.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

1 July 2016
TTF-3

12.1 #8
12.4.1 #8



CHEVRON ULTRA-DUTY GREASE EP

NLGI 0, 1, 2

PRODUCT DESCRIPTION

Chevron Ultra-Duty Greases EP are versatile, high pressure greases with good adhesive properties designed for a wide variety of automotive and industrial applications.

CUSTOMER BENEFITS

Chevron Ultra-Duty Greases EP deliver value through:

- **Shock load protection**
- **Load-carrying protection**
- **Corrosion and rust protection**
- **Water resistant**
- **Maximum service lubrication**

FEATURES

Chevron Ultra-Duty Greases EP are versatile, high pressure greases with good adhesive properties designed for a wide variety of automotive and industrial applications.

They are manufactured using selected highly refined, high viscosity base oils, a lithium-12 hydroxystearate thickener, rust and oxidation inhibitors, and extreme pressure and tackiness additives. They are red in color and stringy in texture.

Chevron Ultra-Duty Greases EP provide thicker shock-absorbing oil film protection and greater water resistance than conventional multipurpose greases due to their high viscosity components.

The high viscosity components and tackiness additive give Chevron Ultra-Duty Greases EP an excellent adhesive quality which provides a tenacious lubricating film in working parts. The lubricants stay in place under abrasive operating conditions to resist water washout and shock load wear.

The tackiness characteristics of Chevron Ultra-Duty Greases EP make these products somewhat harder to pump than the historical soft, buttery greases. For this reason, we recommend the use of a heavy follower plate with air-driven grease pumps.

Chevron Ultra-Duty Greases EP lubricate well at low temperatures. The ASTM D1478 low temperature torque test shows that they retain their lubricating capacity, as defined by military specification MIL-G-81322, down to about -26°C (-15°F).

APPLICATIONS

Chevron Ultra-Duty Greases EP are recommended for use in automotive and industrial equipment operating under most conditions except where very high operating temperatures are encountered. Typical applications are: mining equipment, construction equipment, material handling equipment, marine deck equipment, marine deck cranes, oil field equipment, offshore drilling equipment, paper machines, dredging equipment, logging equipment, rock quarry equipment, etc., operating in water, mud, or dusty conditions.

Chevron Ultra-Duty Greases EP will help provide the needed shock load and rust protection and, best of all, they stay put which means less frequent regreasing. They are not Chevron's primary recommendation for high temperature wheel bearings. Delo® Greases EP or Black Pearl® Greases EP are preferred for wheel bearing applications.

In industrial service, Chevron Ultra-Duty Greases EP are recommended for use in most types of plain and antifriction bearings from 1-1/2 inch OD to over 16 inch OD, operating at speeds from 50 to 3000 rpm, as well as slides, gears, ways, etc.

Product(s) manufactured in the USA.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

A Chevron company product

3 June 2013
GR-150

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TYPICAL TEST DATA

NLGI Grade	0	1	2
<i>Product Number</i>	<i>238013</i>	<i>238012</i>	<i>238011</i>
<i>SDS Number</i>	<i>6790</i>	<i>6790</i>	<i>6790</i>
Operating Temperature, °C(°F) Minimum ^a Maximum ^b	-26(-15) 132(270)	-26(-15) 138(280)	-26(-15) 143(290)
Penetration, at 25°C(77°F) Worked (60 Strokes)	370	325	280
Dropping Point, °C(°F)	172(342)	172(342)	190(374)
Four Ball Weld Point, kg	315	315	315
Four Ball Wear Scar, mm	0.45	0.45	0.45
Timken OK Load, lb	55	70	70
Water Washout, wt %	15	10	7
Water Spray-off, wt %	n/a	40	25
Lincoln Ventmeter, psig at 30 s, at 75°F 30°F 0°F	100 200 1700	100 400 1750	280 600 2500
Thickener, % Type	5.6 Lithium	7.2 Lithium	8.6 Lithium
ISO Viscosity Grade, Base Oil Equivalent	460	460	460
Viscosity, Kinematic* cSt at 40°C cSt at 100°C	400 24.3	400 24.3	400 24.3
Viscosity, Saybolt* SUS at 100°F SUS at 210°F	2160 121	2160 121	2160 121
Viscosity Index*	76	76	76
Flash Point, °C(°F)*	274(525)	274(525)	274(525)
Oil Separation, mass %	5	4	2
Texture	Stringy	Stringy	Stringy
Color	Red	Red	Red

a Minimum operating temperature is the lowest temperature at which a grease, already in place, could be expected to provide lubrication. Most greases cannot be pumped at these minimum temperatures.

b Maximum operating temperature is the highest temperature at which the grease could be used with frequent (daily) relubrication.

* Determined on mineral oil extracted by vacuum filtration.

Minor variations in product typical test data are to be expected in normal manufacturing.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

3 June 2013
GR-150

121 # 9.10

Chevron



DELO® GEAR EP-5

SAE 80W-90, 85W-140

PRODUCT DESCRIPTION

Delo® Gear EP-5 gear lubricants are recommended for use in spiral bevel and hypoid differentials, power dividers, and oil-lubricated steering axle wheel bearings.

CUSTOMER BENEFITS

Delo Gear EP-5 delivers value through:

- **Long gear life** — Extreme pressure properties protect hypoid and other types of gears from scuffing and wear.
- **Rust and corrosion protection** — Effective inhibitor package protects against rusting or corrosion of gear and bearing surfaces.
- **Excellent foam inhibition** — Foaming minimized by use of foam inhibitor.
- **Long lubricant life** — Outstanding thermal and oxidation stability allow high temperature operation with long lubricant life.
- **Seal Protection** — Formulated to protect against oil seal deterioration.

FEATURES

Delo Gear EP-5 are multipurpose lubricants.

They are made from paraffinic base stocks and contain a carefully balanced additive package to provide gear protection and long lubricant life.

The sulfur-phosphorus extreme pressure additive technology used in Delo Gear EP-5 provides exceptional thermal and oxidation stability. In addition, this lubricant is fortified with rust and corrosion inhibitors, a foam inhibitor, and a pour point depressant.

The sulfur-phosphorus extreme pressure additives in Delo Gear EP-5 minimize the spalling and wear of gears by creating a microthin sacrificial film on the surface of the gear teeth which is actually softer than the gears themselves. Frictional heat and pressures between gear teeth cause the sulfur-phosphorus to react with the surfaces of the gear teeth at the point of contact, thus creating the sacrificial film.

The highly refined base stocks and various inhibitors in the additive package help assure a well-balanced lubricant and long gear and bearing life.

APPLICATIONS

Delo Gear EP-5 lubricants are recommended for use in spiral bevel and hypoid differentials, power dividers, and oil-lubricated steering axle wheel bearings.

Their multiviscosity characteristics allow their use in equipment operating over a broad ambient temperature range. This means good cold flow properties and gear protection.

Delo Gear EP-5 lubricants are approved for **SAE J2360** (formerly known as MIL-PRF-2105E) and meet the requirements of:

- **API Service Categories** MT-1, GL-4 and GL-5
- **Mack** GO-J

Product(s) manufactured in the USA.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

A **Chevron** company product

18 April 2017
GL-46

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TYPICAL TEST DATA

SAE Grade	80W-90	85W-140
<i>Product Number</i>	<i>223022</i>	<i>223021</i>
<i>SDS Number</i>		
<i>U.S.</i>	<i>44036</i>	<i>44036</i>
<i>Canada</i>	<i>44042</i>	<i>44042</i>
<i>Mexico</i>	<i>44043</i>	<i>44043</i>
Density at 15.6°C(60°F), kg/L(lb/gal)	0.8856(7.39)	0.8991(7.50)
Viscosity, Kinematic		
cSt at 40°C	145	341
cSt at 100°C	14.2	25.0
Viscosity, Brookfield		
cP at -12°C	—	80,000
cP at -26°C	73,000	—
Viscosity Index	95	95
Flash Point, °C(°F)	218(421)	226(439)
Pour Point, °C(°F)	-33(-27)	-15(+5)

Minor variations in product typical test data are to be expected in normal manufacturing.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

18 April 2017
GL-46



LUBRICANTS

12.2 # 1, 2, 3

10

Shield® Choice

Phillips 66® Shield Choice Synthetic Blend Motor Oil is a premium quality, part-synthetic automotive engine oil designed to provide excellent engine protection for both turbocharged gasoline direct-injection, conventional gasoline-fueled and flex-fueled passenger cars and light trucks under all operating conditions.

Shield Choice Synthetic Blend Motor Oil is formulated to provide excellent wear protection, to minimize sludge and varnish formation, and to resist viscosity and thermal breakdown, even in severe service. It also protects against rust and bearing corrosion, and is resistant to foaming.

Shield Choice Synthetic Blend Motor Oil (except SAE 10W-40 & 20W-50) exceeds new car warranty requirements as defined by ILSAC GF-5. It is uniquely formulated to help combat low speed pre-ignition (LSPI) in turbocharged gasoline direct injection engines. Shield Choice (except SAE 10W-40 & 20W-50) meets "Resource Conserving" requirements for fuel economy improvement, emission system and turbocharger protection, and protection of engines operating on ethanol-containing fuels up to E85. It is backward serviceable for use where API SN or earlier "S" category engine oils are recommended.

Applications

- Turbocharged gasoline direct-injection, conventional gasoline-fueled and flex-fuel passenger cars, light trucks and sport utility vehicles, including gasoline-electric hybrids, especially when operating under severe conditions
- Four-stroke cycle gasoline engines in other mobile or stationary equipment

Shield Choice Synthetic Blend Motor Oil is licensed for:

- ILSAC GF-5 (except SAE 10W-40 and 20W-50)
- API Service SN Plus with Resource Conserving (except SAE 10W-40 and 20W-50 which is API SN Plus only)

Shield Choice Synthetic Blend Motor Oil meets or exceeds the requirements of:

- Chrysler MS-6395
- Ford WSS-M2C945-A (SAE 5W-20)
- Ford WSS-M2C945-B1 (SAE 5W-20)
- Ford WSS-M2C946-A (SAE 5W-30)
- Ford WSS-M2C946-B1 (SAE 5W-30)
- Ford WSS-M2C947-B1 (SAE 0W-20)
- Ford WSS-M2C947-A (SAE 0W-20)
- GM6094M (obsolete specification)

Premium Synthetic Blend Passenger Car Engine Oil





LUBRICANTS

Features/Benefits

- Helps protect against low speed pre-ignition (LSPI) in turbocharged gasoline direct-injection engines (TGDI)
- Exceeds ILSAC GF-5 requirements for new cars under warranty
- Friction-modified for improved fuel economy
- Excellent resistance to viscosity and thermal breakdown at high temperatures
- Protects against sludge and varnish formation
- Protects against wear and bearing corrosion
- Low volatility for reduced oil consumption
- Highly resistant to foaming
- Formulated to protect turbochargers and emission control system catalysts
- Formulated for use in vehicles operating on ethanol-containing fuels up to E85

Shield[®] Choice

Typical Properties						
SAE Grade	0W-20	5W-20	5W-30	10W-30	10W-40	20W-50
Specific Gravity @ 60°F	0.848	0.862	0.862	0.866	0.869	0.881
Density, lbs/gal @ 60°F	7.06	7.18	7.17	7.21	7.24	7.33
Color, ASTM D1500	3.0	3.0	3.0	3.0	3.0	3.5
Flash Point (COC), °C (°F)	218 (424)	218 (424)	216 (421)	229 (444)	227 (440)	230 (446)
Pour Point, °C (°F)	-34 (-29)	-30 (-22)	-30 (-22)	-30 (-22)	-30 (-22)	-30 (-22)
Viscosity, Kinematic						
cSt @ 40°C	46.0	49.8	65.4	65.1	106	176
cSt @ 100°C	8.8	8.5	10.9	10.4	15.8	19.6
Viscosity Index	174	147	158	148	150	128
Cold Cranking Viscosity, cP	5,400	6,150	6,150	4,550	6200	7200
@ (°C)	(-35)	(-30)	(-30)	(-25)	(-25)	(-15)
High-Temp/High-Shear Viscosity, cP @ 150°C	2.6	2.6	3.1	3.0	3.8	4.9
Sulfated Ash, ASTM D874, wt %	0.96	0.96	0.96	0.96	0.96	0.96
Total Base Number (TBN), ASTM D2896	8.0	8.0	8.0	8.0	8.0	8.0
Phosphorus, wt %	0.077	0.077	0.077	0.077	0.077	0.077
Zinc, wt %	0.085	0.085	0.085	0.085	0.085	0.085

Health Safety Information

For recommendations on safe handling and use of this product, please refer to the Material Safety Data Sheet via <http://www.phillips66.com/SDS>

02-19-18

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LUBRICANTS

12.2 #4



Guardol ECT® Diesel Engine Oil with Liquid Titanium®

Phillips 66® Guardol ECT (Emission Compatible Technology) Diesel Engine Oil with Liquid Titanium protection additive is a premium quality, part-synthetic API CK-4 engine oil developed for use in four-stroke cycle diesel engines designed to meet 2007 and later EPA on-highway exhaust emissions standards. It is specially formulated for compatibility with exhaust aftertreatment systems using diesel particulate filters (DPF), diesel oxidation catalysts (DOC) and/or selective catalytic reduction (SCR). It is backward serviceable for use in pre-2007 diesel engines.

Guardol ECT with Liquid Titanium is formulated with a blend of synthetic and high-quality Group II base stocks and a proprietary low-SAPS additive package to provide outstanding engine protection in new and older diesel engines. It is fortified with our exclusive Liquid Titanium protection additive for enhanced oxidation resistance and protection against wear. This additive enhancement provides increased engine protection from a strongly bonded titanium shield formed on the surface of critical engine parts, which reduces wear and helps extend component life.

Guardol ECT with Liquid Titanium has excellent soot dispersancy to protect against abrasive wear and soot-induced oil thickening, and to ensure good low-temperature pumpability even with highly soot-laden oil. It provides excellent bearing corrosion protection and protects against sludge and varnish formation. The synthetic blend formulation provides enhanced thermal stability at high temperatures and improved low-temperature properties compared with conventional diesel engine oils.

Guardol ECT with Liquid Titanium meets or exceeds the performance requirements of API Service Category CK-4 and is approved under the latest OEM specifications for use in low-emission diesel engines. It is backward serviceable for use where earlier API "C" category engine oils, or the concurrent earlier OEM specifications, are specified. It is formulated for use in diesel engines operating on diesel fuels with sulfur content up to 500 ppm. However, for applications not using Ultra-Low Sulfur Diesel (ULSD), consult the engine manufacturer for recommended service interval.

**Premium
Synthetic Blend
API CK-4 Diesel
Engine Oil;
Fortified with
Liquid Titanium®
Protection
Additive**





LUBRICANTS

Applications

- On-highway diesel trucks equipped with EGR and exhaust aftertreatment systems to meet 2007/2010 emissions standards
- Older diesel equipment with conventional, non-EGR engines or ACERT engines
- Off-highway construction, earth moving and mining equipment

Guardol ECT with Liquid Titanium is licensed or OEM-certified for:

- API Service CK-4 CJ-4, CI-4 PLUS
- Cummins CES 20086
- Detroit Diesel DFS 93K222
- Mack EOS-4.5
- Mercedes-Benz Sheet 228.31 (SAE 15W-40)
- MTU MTL 5044 Type 2.1 (SAE 15W-40)
- Renault VI RLD-4 (SAE 15W-40)
- Volvo VDS-4.5
- Ford WSS-M2C171-F1

Guardol ECT with Liquid Titanium meets or exceeds the requirements of:

- ACEA E9
- Caterpillar ECF-3, ECF-2, ECF-1-a
- Chrysler MS-10902 (SAE 15W-40)
- JASO DH-2 (SAE 15W-40)
- Diesel engines manufactured by OEMs not listed above, where the OEM specifies API CK-4 engine oil

Features/Benefits

- Excellent protection for newer low-emission diesel engines and older diesel engines
- Specially formulated to protect exhaust aftertreatment systems
- Exclusive Liquid Titanium protection additive provides enhanced oxidation resistance and protection against engine wear
- Outstanding soot control for protection against abrasive wear and soot-induced oil thickening
- Outstanding resistance to viscosity and thermal breakdown at high temperatures
- Protects against sludge and varnish formation
- Protects against rust and bearing corrosion
- Excellent low-temperature pumpability with soot-laden oil
- High shear stability
- Good resistance to foaming and aeration

Typical properties are average values only and do not constitute a specification. Minor variations that do not affect product performance are to be expected during normal manufacture, and at different blending locations. Product formulations are subject to change without notification.

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LUBRICANTS

Guardol ECT[®] Diesel Engine Oil with Liquid Titanium[®]

Typical Properties		
SAE Grade	10W-30	15W-40
Specific Gravity @ 60°F	0.870	0.875
Density, lbs/gal @ 60°F	7.25	7.29
Color, ASTM D1500	4.0	4.0
Flash Point (COC), °C (°F)	226 (439)	240 (464)
Pour Point, °C (°F)	-40 (-40)	-40 (-40)
Viscosity, Kinematic		
cSt @ 40°C	80.0	119
cSt @ 100°C	12.0	15.4
Viscosity Index	144	135
Cold Cranking Viscosity, cP @ (-25)	6300 (-25)	6200(-20)
High-Temp/High-Shear Viscosity, cP @ 150°C	3.6	4.26
Sulfated Ash, ASTM D874, wt %	1.00	1.00
Total Base Number (TBN), ASTM D2896	10.5	10.5
Titanium, wt%	0.010	0.010
Zinc, wt %	0.122	0.122
Phosphorus wt %	0.1100	0.1100

Health & Safety Information

For recommendations on safe handling and use of this product, please refer to the Safety Data Sheet via <http://www.phillips66.com/EN/products/Pages/MSDS.aspx>.

01-13-2017

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LUBRICANTS

12.2 45

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T5X® Off-Road Mobile Hydraulic Fluid

Phillips 66® T5X Off-Road Mobile Hydraulic Fluid is a high-performance hydraulic fluid designed primarily for use in the hydraulic systems of Caterpillar and other off-highway mobile equipment. It also may be used in the hydrostatic transmissions of some off-road equipment.

T5X Off-Road Mobile Hydraulic Fluid is formulated to provide excellent wear protection, to protect hydraulic system components against rust and corrosion, and to resist foaming. It has excellent oxidation resistance to minimize deposit formation and provide long service life, and high dispersancy-detergency to maintain hydraulic system cleanliness. It contains a high level of zinc-containing antiwear additive to meet Caterpillar requirements for use in the hydraulic systems of Caterpillar equipment. It has a high viscosity index for use over a wide temperature range.

T5X Off-Road Mobile Hydraulic Fluid is recommended for use in a wide range of hydraulic applications in the construction, mining and agricultural industries. However, it is not recommended for use in industrial hydraulic systems where excellent water separation is required, since the dispersant-detergent additives will emulsify some water and hold it in suspension.

Applications

- Hydraulic systems and some hydrostatic transmissions on Caterpillar and other off-highway mobile equipment
- Hydraulic systems operating over a wide temperature range

Features/Benefits

- High viscosity index for use over a wide temperature range
- Excellent wear protection for hydraulic system components
- High dispersancy-detergency for excellent system cleanliness
- Protects against deposit formation
- Protects against rust and corrosion
- Good resistance to foaming

**High-
Performance
Hydraulic
Fluid for Off-
Road Mobile
Equipment**



**LUBRICANTS****T5X® Off-Road Mobile Hydraulic Fluid**

Typical Properties	
SAE Grade	10W
Specific Gravity @ 60°F	0.872
Density, lbs/gal @ 60°F	7.26
Color, ASTM D1500	L 2.5
Flash Point (COC), °C (°F)	210 (410)
Pour Point, °C (°F)	-39 (-38)
Viscosity, Kinematic	
cSt @ 40°C	48.0
cSt @ 100°C	7.5
Viscosity Index	120
Sulfated Ash, ASTM D874, wt %	1.16
Total Base Number (TBN), ASTM D2896	8.7
Zinc, wt %	0.099

Health & Safety Information

For recommendations on safe handling and use of this product, please refer to the Safety Data Sheet via <http://www.phillips66.com/EN/products/Pages/MSDS.aspx>.

09-14-2016

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LUBRICANTS

12.2 #6

13

T5X[®] Heavy Duty Diesel Engine Oil

Phillips 66[®] T5X Heavy Duty Diesel Engine Oil is a high-quality diesel engine oil designed for use in a wide variety of applications, including off-highway diesel equipment, farm machinery, marine engines, 2-stroke cycle diesel engines (SAE 40 only) and mixed commercial fleets. It also may be used in some heavy-duty manual transmissions in trucks and buses.

T5X Heavy Duty is formulated to provide excellent wear protection, to minimize the formation of sludge and varnish, to protect against rust and bearing corrosion, and to resist foaming. It has excellent soot dispersancy to protect against abrasive wear and soot-induced oil thickening, and excellent oxidation resistance to help minimize deposit formation. The SAE 40 viscosity grade has low ash content to help minimize ash deposits and keep intake ports clear to maintain good power output in 2-stroke cycle applications.

T5X Heavy Duty SAE 30 & SAE 50 meets or exceeds the performance requirements of API Service Categories CF and SL. They are recommended primarily for use in off-highway diesel equipment and mixed commercial fleets with both diesel and gasoline vehicles.

T5X Heavy Duty SAE 40 meets or exceeds the performance requirements of API Service Categories CF-2 and CF, and also may be used in applications where API CD quality oil is specified. It is particularly recommended for use in 2-stroke cycle diesel engines in transit buses and marine fleets running on low-sulfur diesel fuel.

Applications

- 2-stroke cycle diesel engines in bus fleets and marine fleets (SAE 40)
- Off-highway trucks, heavy equipment and farm equipment
- Light trucks and farm equipment with gasoline engines (SAE 30, SAE 50)
- Heavy-duty manual transmissions in trucks and buses where the OEM specifies engine oil

T5X Heavy Duty meets or exceeds the requirements of:

- API Service CF-2⁽¹⁾, CF⁽¹⁾ (SAE 40)
- API Service CF⁽¹⁾, SL (SAE 30, SAE 50)
- Detroit Diesel 2-stroke cycle engines, Oil Type 1 (1.0% max. sulfated ash)
(SAE 40)

⁽¹⁾ Obsolete service category.

Heavy-Duty Monograde Diesel Engine Oil





LUBRICANTS

Features/Benefits

- Excellent soot control for protection against abrasive wear and soot-induced oil thickening
- Protects against sludge and varnish formation
- Protects against scuffing and wear
- Protects against rust and bearing corrosion
- Good resistance to foaming and aeration
- Low-ash content to minimize ash deposits and help keep intake ports clean (SAE 40)

T5X[®] Heavy Duty Diesel Engine Oil

Typical Properties			
SAE Grade	30	40	50
Specific Gravity @ 60°F	0.883	0.886	0.891
Density, lbs/gal @ 60°F	7.35	7.38	7.42
Color, ASTM D1500	4.0	4.0	4.0
Flash Point (COC), °C (°F)	230 (446)	235 (455)	240 (464)
Pour Point, °C (°F)	-33 (-27)	-27 (-17)	-27 (-17)
Viscosity, Kinematic			
cSt @ 40°C	92.0	142	224
cSt @ 100°C	11.3	15.0	20.0
Viscosity Index	110	106	103
High-Temp/High-Shear Viscosity, cP @ 150°C	3.4	4.2	5.7
Sulfated Ash, ASTM D874, wt %	1.39	0.90	1.39
Total Base Number (TBN), ASTM D2896	10.5	6.8	10.5
Zinc, wt %	0.119	0.077	0.119

Health & Safety Information

For recommendations on safe handling and use of this product, please refer to the Safety Data Sheet via <http://www.phillips66.com/EN/products/Pages/MSDS.aspx>.

09-14-2016

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LUBRICANTS

12.2 # 7

14

PowerDrive® Fluid

Phillips 66® PowerDrive Fluid is a high-performance multi-functional fluid developed for use in transmissions, final drives and hydraulic systems of off-highway equipment where a fluid meeting Caterpillar TO-4 performance requirements is specified. It provides substantially improved friction and antiwear performance compared with older API CD/TO-2 quality fluids, resulting in longer equipment life and reduced risk of field failure. The SAE 10W and 30 viscosity grades also are recommended for use in Allison off-highway heavy-duty automatic transmissions where a C-4 quality fluid is specified.

PowerDrive Fluid is formulated with state-of-the-art additive technology that provides improved deposit control, corrosion protection and load-carrying capacity for better equipment protection and more reliable operation. Its carefully optimized frictional properties prevent clutch slippage for smoother, more consistent transmission operation and also provide improved wet brake performance.

Applications

- Powershift transmissions, hydrostatic transmissions, torque converters, final drives and hydraulic systems of Caterpillar, Euclid, Komatsu and other off-highway construction and mining equipment
- Heavy-duty automatic transmissions where the OEM specifies an Allison C-4 quality fluid
- Heavy-duty manual and semi-automatic transmissions in trucks and buses where the OEM specifies a Caterpillar TO-4 quality fluid or a heavy-duty engine oil

Note: Typically, the SAE 10W and 30 viscosity grades are recommended for hydraulic systems and transmissions, and the SAE 50 viscosity grade is recommended for differentials, final drives and heavy-duty manual transmissions. Refer to the OEM recommendations for selection of the proper viscosity grade.

PowerDrive Fluid SAE 30 is OEM-approved for service fill in the following applications:

- Allison TES-439, for off-highway applications (approval no. 439-33372012)

PowerDrive Fluid meets or exceeds the requirements of:

- Caterpillar TO-4, TO-2¹⁾
- Vickers (Eaton) M-2950-S

¹⁾Obsolete specification.

Caterpillar TO-4 Fluid for Off-Highway Equipment





LUBRICANTS

PowerDrive Fluid is recommended for service fill in:

- ZF torque converter transmissions in off-highway equipment where the OEM specifies a TE-ML 03C quality lubricant (SAE 10W, 30)

Features/Benefits

- Well-balanced frictional properties for efficient clutch operation and improved wet brake performance
- Excellent oxidation resistance and thermal stability for long fluid life
- High load-carrying capacity for protection of final drive gear sets
- Excellent deposit control and wear protection
- Protects yellow metals against corrosion
- High shear stability
- Compatible with a wide variety of seals and friction materials
- Good low-temperature properties
- Good foam resistance

PowerDrive® Fluid

Typical Properties				
SAE Grade	10W	30	50	60
Specific Gravity @ 60°F	0.875	0.857	0.861	0.896
Density, lbs/gal @ 60°F	7.29	7.34	7.43	7.46
Color, ASTM D1500	2.5	3.0	4.0	5.5
Flash Point (COC), °C (°F)	213 (415)	233 (451)	242 (468)	281 (538)
Pour Point, °C (°F)	-39 (-38)	-33 (-27)	-28 (-18)	-12 (10)
Viscosity, Brookfield				
cP @ -35°C	45,500	—	—	—
Viscosity, Kinematic				
cSt @ 40°C	43.0	96.0	227	318
cSt @ 100°C	6.6	11.1	19.1	24.0
Viscosity Index	105	101	95	96
Total Base Number (TBN), ASTM D2896	7.6	7.6	7.6	7.6
Zinc, wt %	0.110	0.110	0.110	0.110

Health & Safety Information

For recommendations on safe handling and use of this product, please refer to the Safety Data Sheet via <http://www.phillips66.com/EN/products/Pages/MSDS.aspx>.

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LUBRICANTS

12.248

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Triton® Synthetic Transoil 50

Phillips 66® Synthetic Transoil 50 is a full-synthetic SAE 50 transmission lubricant designed for use in heavy-duty manual transmissions in trucks and buses operating in extreme temperatures and/or extended service intervals. It combines improved low-temperature properties with outstanding oxidation resistance and thermal stability at high temperatures to provide excellent all-weather, year-round performance.

Triton Synthetic Transoil 50 has excellent shear stability and antiwear properties to protect synchronizers, reduce component wear and promote longer transmission life. It is particularly recommended for use in newer, higher torque manual transmissions coupled with increased horsepower engines. It is fully approved for extended drain service (up to 500,000 miles in linehaul service) in Eaton Roadranger® and Meritor transmissions.

Applications

- Heavy-duty manual and semi-automatic transmissions in trucks and buses where the OEM specifies a non-EP, API MT-1 SAE 50 or API GL-1 SAE 90 gear oil, or an SAE 50 heavy-duty engine oil

Triton Synthetic Transoil 50 meets or exceeds the requirements of:

- API Service GL-1, MT-1
- International (Navistar) TMS 6816

Triton Synthetic Transoil 50 is approved for service fill under the following OEM specifications:

- Eaton PS-164 Rev 7
- Mack TO-A Plus
- Meritor O-81

Features/Benefits

- Extended drain, all-season performance
- Outstanding oxidation resistance and thermal stability to minimize sludge and varnish formation
- Excellent low-temperature properties for easier shifting in cold weather
- High shear stability
- High load-carrying capacity
- Protects against component wear and gear micropitting
- Protects against rust and corrosion
- Good foam resistance
- Excellent seal compatibility
- Potential fuel economy improvement compared with non-synthetic transmission fluids

Premium Full-Synthetic SAE 50 Manual Transmission Fluid, API MT-1





LUBRICANTS

Triton® Synthetic Transoil 50

Typical Properties	
SAE Grade	50
Specific Gravity @ 60°F	0.860
Density, lbs/gal @ 60°F	7.16
Color, Visual	Amber
Flash Point (COC), °C (°F)	221 (430)
Pour Point, °C (°F)	-45 (-49)
Viscosity, Brookfield	
cP @ -40°C	104,000
Viscosity, Kinematic	
cSt @ 40°C	132
cSt @ 100°C	17.5
Viscosity Index	146

Health & Safety Information

For recommendations on safe handling and use of this product, please refer to the Safety Data Sheet via <http://www.phillips66.com/EN/products/Pages/MSDS.aspx>.

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LUBRICANTS

12.2 #9, 15, 17

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VersaTrans® ATF

Phillips 66® VersaTrans® ATF is a premium quality, part-synthetic transmission fluid specially designed for use in automatic transmissions in most passenger cars and light trucks. It has been extensively field tested for use in most North American vehicles and in a wide variety of European and Japanese vehicles.

VersaTrans ATF has carefully balanced frictional properties for smooth shifting and excellent anti-shudder performance. It has high shear stability and excellent oxidation resistance for long service life. It provides excellent wear protection, helps protect against sludge and varnish formation, and has excellent low-temperature properties for easier shifting in cold weather. The part-synthetic formulation provides enhanced performance benefits at extreme temperatures compared with conventional, all-mineral transmission fluids.

VersaTrans ATF meets the requirements of the JASO M315, Class 1A performance standard developed by Japanese automakers for service fill automatic transmission fluids.

Applications

- Chrysler automatic transmissions, except continuously variable transmissions (CVTs)
- Ford automatic transmissions where MERCON® V or an earlier-generation MERCON fluid (obsolete) is specified
- GM automatic transmissions in 2005 and earlier vehicles, except those that require DEXRON®-VI for warranty coverage, or a CVT fluid
- Many import vehicles, including Acura, Audi, BMW, Honda, Hyundai, Infiniti, Kia, Mazda, Mercedes-Benz, Mitsubishi, Nissan, Porsche, Saab, Saturn, Toyota, Volkswagen and Volvo®
- Heavy-duty automatic and powershift transmissions in trucks and buses
- Hydraulic systems on industrial and mobile equipment operating over a wide temperature range

(Note: VersaTrans ATF is not recommended for use in continuously variable transmissions (CVTs) or in most 6-speed or 7-speed automatic transmissions. For questions about a specific application, please call our Technical Support Hotline.)

VersaTrans ATF is OEM-approved for service fill in the following applications:

- Ford MERCON V (License Nos. M5091007, M5091008, M5091009)
- Voith DIWA transmissions

**Synthetic Blend
Multi-Vehicle
Automatic
Transmission
Fluid**





LUBRICANTS

VersaTrans ATF is recommended for service fill in the following applications:

- Allison automatic transmissions in off-highway applications where a C-4 quality fluid is specified
- ZF Ecomat transmissions

VersaTrans ATF is recommended for service fill in:

- ZF torque converter transmissions in off-highway equipment where the OEM specifies a TE-ML-03C quality lubricant (SAE 10W, 30)

Features/Benefits

- Extensively field tested in a wide variety of domestic and import automatic transmissions
- Proper frictional properties for smooth shifting and excellent anti-shudder performance
- Excellent oxidation resistance and thermal stability for long fluid life
- Protects against sludge and varnish formation
- Protects against wear
- Protects against rust and corrosion
- Excellent low-temperature properties for easier shifting in cold weather
- Good seal compatibility
- Good foam resistance

VersaTrans® ATF

Typical Properties	
Specific Gravity @ 60°F	0.857
Density, lbs/gal @ 60°F	7.14
Color, Visual	Red
Flash Point (COC), °C (°F)	196 (385)
Pour Point, °C (°F)	<-45 (<-49)
Viscosity, Brookfield	
cP @ -40°C	10,200
Viscosity, Kinematic	
cSt @ 40°C	34.0
cSt @ 100°C	7.6
Viscosity Index	202
Zinc, wt %	<0.001

Health & Safety Information

For recommendations on safe handling and use of this product, please refer to the Safety Data Sheet via <http://www.phillips66.com/EN/products/Pages/MSDS.aspx>.

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LUBRICANTS

12.2 # 10, 11

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Megaflow® AW Hydraulic Oil

Phillips 66® Megaflow AW Hydraulic Oil is a high-quality anti-wear hydraulic oil developed for use in a wide variety of industrial and mobile hydraulic system applications. It meets the performance requirements of all major hydraulic pump manufacturers, and is recommended for use in all types of high-pressure, high-speed hydraulic pumps.

Megaflow AW Hydraulic Oil is formulated to provide excellent wear protection for hydraulic pumps and motors, and to protect hydraulic system components against rust and corrosion. It has excellent oxidation resistance and thermal stability at high temperatures to minimize deposit formation and provide long service life. It has excellent water-separating properties to minimize the formation of emulsions, and is resistant to excessive foam buildup that can cause poor or sluggish hydraulic system response.

Applications

- Hydraulic systems on industrial, mobile and marine equipment
- Automated machine tools
- Elevators, hoists, presses and floor jacks
- Marine cargo winches and steering systems
- Mobile construction equipment
- Service station lifts
- Air tools and other pneumatic equipment lubricated through air line lubricators
- Chain drives
- Electric motor bearings
- Lightly to moderately loaded enclosed industrial gear drives that do not require a compounded or extreme-pressure (EP) gear oil

Megaflow AW Hydraulic Oil meets the requirements of the following industry and OEM specifications:

- Bosch Rexroth RE 90220, Type HLP
- DIN 51524 Part 2, Anti-wear Hydraulic Oils, Type HLP
- Parker Hannifin (Denison) HF-0, HF-1, HF-2 (approved ISO 32, 46, and 68)
- Eaton-Vickers I-286-S, M-2950-S, 35VQ25A anti-wear performance (brochure 03-401-2010 Rev 1 ISO 32, 46, and 68)
- Fives Cincinnati P-68 (ISO VG 32), P-70 (ISO VG 46), P-69 (ISO VG 68) (approved)
- German Steel Industry SEB 181222
- ISO 11158:1997, Family H (Hydraulic Systems), Type HM
- U.S. Steel 127

**High-Quality
Anti-wear
Hydraulic Oil**



**LUBRICANTS****Features/Benefits**

- Excellent wear protection for hydraulic pumps and motors
- Excellent oxidation resistance and thermal stability
- Protects against rust and corrosion
- Excellent water-separating properties
- Good foam resistance

Megaflow® AW Hydraulic Oil

Typical Properties				
ISO Grade	22	32	46	68
Specific Gravity @ 60°F	0.855	0.862	0.869	0.874
Density, lbs/gal @ 60°F	7.12	7.18	7.24	7.27
Color, ASTM D1500	0.5	0.5	0.5	0.5
Flash Point (COC), °C (°F)	196 (385)	216 (421)	227 (441)	238 (460)
Pour Point, °C (°F)	-40 (-40)	-37 (-35)	-37 (-35)	-33 (-27)
Viscosity				
cSt @ 40 °C	22.0	32.0	46.0	68.0
cSt @ 100 °C	4.3	5.4	6.8	8.7
SUS @ 100 °F	106	150	214	315
SUS @ 210 °F	39.9	44.0	48.5	54.9
Viscosity Index	101	102	102	99
Acid Number, ASTM D974, mg KOH/g	0.38	0.38	0.38	0.38
Copper Corrosion, ASTM D130	1a	1a	1a	1a
Demulsibility, ASTM D1401, minutes to pass	10	10	10	10
Foam Test, ASTM D892, Seq. I, mL	0/0	0/0	0/0	0/0
FZG Scuffing Test, ASTM D5182				
Failure Load Stage	—	12	12	12
Oxidation Stability				
TOST, ASTM D943-04a, hours	>5,000	>5,000	>5,000	>5,000
Rust Test, ASTM D665 A&B	Pass	Pass	Pass	Pass
Zinc, wt %	0.043	0.043	0.043	0.043

Typical properties are average values only and do not constitute a specification. Minor variations that do not affect product performance are to be expected during normal manufacture, and at different blending locations. Product formulations are subject to change without notification.

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**LUBRICANTS****Megaflow® AW Hydraulic Oil**

Typical Properties				
ISO Grade	100	150	220	320
Specific Gravity @ 60°F	0.878	0.882	0.881	0.887
Density, lbs/gal @ 60°F	7.31	7.35	7.34	7.38
Color, ASTM D1500	0.5	0.5	0.5	0.5
Flash Point (COC), °C (°F)	252 (486)	274 (525)	282 (540)	274 (525)
Pour Point, °C (°F)	-32 (-26)	-33 (-27)	-30 (-22)	-24 (-11)
Viscosity				
cSt @ 40 °C	100	150	220	320
cSt @ 100 °C	11.0	14.7	19.2	24.3
SUS @ 100 °F	463	695	1,020	1,483
SUS @ 210 °F	62.8	76.8	95.1	117
Viscosity Index	94	96	98	96
Acid Number, ASTM D974, mg KOH/g	0.38	0.38	0.38	0.38
Copper Corrosion, ASTM D130	1a	1a	1a	1a
Demulsibility, ASTM D1401, minutes to pass	10	10	10	10
Foam Test, ASTM D892, Seq. I, mL	0/0	0/0	0/0	0/0
FZG Scuffing Test, ASTM D5182				
Failure Load Stage	12	12	12	12
Oxidation Stability				
TOST, ASTM D943-04a, hours	>5,000	>4,500	>4,500	>4,500
Rust Test, ASTM D665 A&B	Pass	Pass	Pass	Pass
Zinc, wt %	0.043	0.043	0.043	0.043

Health & Safety Information

For recommendations on safe handling and use of this product, please refer to the Safety Data Sheet via <http://www.phillips66.com/EN/products/Pages/MSDS.aspx>.

05-09-17

Typical properties are average values only and do not constitute a specification. Minor variations that do not affect product performance are to be expected during normal manufacture, and at different blending locations. Product formulations are subject to change without notification.

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LUBRICANTS

12.2 12

18

PowerTran™ Fluid

Phillips 66® PowerTran Fluid is a multi-functional fluid specially formulated for use in farm tractors and other off-highway equipment requiring one lubricant for the transmission, final drive, wet brakes and hydraulic systems. It meets the performance requirements of all major brands of farm tractors and other farm equipment that utilize a common fluid reservoir.

PowerTran Fluid is formulated to provide excellent oxidation resistance, excellent wear protection, protection against rust and corrosion, and resistance to foaming. It has carefully balanced frictional properties to ensure proper operation of wet brakes and transmission clutches.

PowerTran Fluid is available in two viscosity grades for use over a wide range of temperatures. The heavier viscosity grade is suitable for year-round use in most climates, whereas the "Low Viscosity" grade is recommended for use in cold climates where a John Deere J20D fluid is specified.

Applications

PowerTran Fluid is recommended for use where the equipment manufacturer specifies:

- AGCO Power Fluid 821XL, Q-1826, Q-1802 (Type 55 Fluid), Q-1766B
- Case IH MS1210, MS1209, MS1207, MS1206
- Case New Holland (CNH) MAT3525 (134-D Fluid), MAT3506, MAT3505
- Caterpillar TO-2 (obsolete)
- Denison Hydraulics HF-0, HF-1, HF-2
- Ford ESN-M2C134-D, ESN-M2C86-C, ESN-M2C86-B, ESN-M2C41-B
- Ford-New Holland FNHA-2-C-201.00
- John Deere JDM J20C, J20D ("Low Viscosity" grade), J14C (Type 303 Fluid)
- Kubota UDT Fluid
- Landini Tractor II Hydraulic Fluid
- Massey Ferguson CMS M1145/M1143, M1141, M1135, M1129A
- Sundstrand Hydrostatic Transmission Fluid
- Vickers (Eaton) M-2950-S, I-286-S
- Volvo VME WB 101 (VCE 1273.03)
- ZF TE-ML 03E, 05F, 17E, 21F

PowerTran Fluid also meets API GL-4 performance requirements.

**Multipurpose
Hydraulic/
Transmission/
Final Drive
Fluid for Farm
Tractors**





LUBRICANTS

Features/Benefits

- Excellent oxidation resistance and thermal stability
- Excellent wear protection for clutches, gears and hydraulic pumps
- Prevents brake chatter and grabbing
- Protects against rust and corrosion
- Excellent seal compatibility
- Good foam resistance
- Two viscosity grades for use in most climates

PowerTran™ Fluid

Typical Properties		
SAE Grade		Low Vis
Specific Gravity @ 60°F	0.879	0.864
Density, lbs/gal @ 60°F	7.32	7.19
Color, ASTM D1500	3.5	3.5
Flash Point (COC), °C (°F)	210 (410)	190 (374)
Pour Point, °C (°F)	-43 (-45)	-51 (-60)
Viscosity, Brookfield		
cP @ -20°C	2,800	---
cP @ -35°C	26,700	---
cP @ -40°C	---	11,500
Viscosity, Kinematic		
cSt @ 40°C	61.0	34.3
cSt @ 100°C	9.4	7.4
Viscosity Index	135	190
Sulfated Ash, ASTM D874, wt %	1.41	1.41
Total Base Number (TBN), ASTM D2896	9.6	9.6
Zinc, wt %	0.149	0.149

Health & Safety Information

For recommendations on safe handling and use of this product, please refer to the Safety Data Sheet via <http://www.phillips66.com/EN/products/Pages/MSDS.aspx>.

09-14-2016

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LUBRICANTS

12.2 #13

19

Omniguard®

Phillips 66® Omniguard is a high-performance, multipurpose, extreme-pressure (EP), corrosion-preventive grease specially developed for use in industrial and automotive equipment operating in wet or corrosive environments. It is particularly recommended for equipment exposed to water contamination, saltwater corrosion and/or high temperatures.

Omniguard is manufactured with high-quality base oils and a non-soap, calcium sulfonate thickener. It is fortified with antiwear additives and rust and corrosion inhibitors. It protects against rust and corrosion in high-humidity, high-temperature applications such as those found in the steel, lumber, tire manufacturing and paper industries. It has excellent load-carrying capacity, high shear stability and outstanding resistance to water washout.

Omniguard Grade No. 2 is NLGI GC-LB certified for use as a multipurpose automotive wheel bearing and chassis lubricant.

Applications

- Industrial and automotive equipment operating at high temperatures and exposed to water contamination, high humidity or corrosive environmental conditions
- Marine equipment, heavy mobile equipment and cables exposed to salt water
- Paper machine wet- and dry-end bearings and hot calender stacks
- Rolling mills, hot roll tables, continuous casters, ingot buggies and slab mills
- Steel mill roller bearings, conveyors and gears
- Centralized lube systems and auto lubbers in service shops

Features/Benefits

- Excellent oxidation resistance and thermal stability at high temperatures
- Outstanding rust and corrosion protection, including resistance to saltwater corrosion
- Excellent extreme-pressure and antiwear properties
- Outstanding resistance to water washout
- Excellent shear stability
- High dropping point (>550°F)
- Light-colored, low staining
- NLGI GC-LB certified (Grade No. 2)

**Premium
Extreme-
Pressure,
Corrosion
Preventive
Calcium
Sulfonate
Grease**



**LUBRICANTS****Omniguard®**

Typical Properties		
NLGI Grade	1	2
Thickener	Calcium Sulfonate	Calcium Sulfonate
Color	Tan	Tan
Dropping Point, °C (°F)	300 (572)	300 (572)
Density, lbs/gal	8.29	8.29
Penetration, ASTM D217 (worked 60 strokes)	310-340	265-295
Texture	Smooth	Smooth
Four-Ball EP, ASTM D2596, Weld Load, kgf	500	500
Four-Ball Wear, ASTM D2266, Scar Diameter, mm	0.39	0.39
Oxidation Stability, ASTM D942, 100 hrs		
Pressure Drop, psi (kPa)	0 (0)	0 (0)
Roll Stability, ASTM D1831, Change in Penetration, %	7	7
Rust Prevention, ASTM D1743	Pass	Pass
Shear Stability, ASTM D217, Change (100,000 strokes), %	1	1
Timken OK Load, ASTM D2509, lb	65	65
Water Washout Resistance, ASTM D1264		
Weight Loss @ 175°F, %	2.81	2.81
Base Oil Properties		
Viscosity		
cSt @ 40°C	219	219
cSt @ 100°C	18.8	18.8
SUS @ 100°F	1,160	1,160
SUS @ 210°F	96	96
Viscosity Index	96	96
Usable Temperature Range		
°C	-29 to 177	-29 to 177
°F	-20 to 350	-20 to 350

Health & Safety Information

For recommendations on safe handling and use of this product, please refer to the Safety Data Sheet via <http://www.phillips66.com/EN/products/Pages/MSDS.aspx>.

4-19-16

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LUBRICANTS

122 # 14



MP Gear Lube

Phillips 66® Gear Lube is a multipurpose, API GL-5 automotive gear lubricant specifically designed for use in passenger car and truck axles with hypoid gear sets. It also is recommended for use in some heavy-duty manual transmissions in trucks and buses.

MP Gear Lube is formulated to provide long service life and extended gear life in automotive differentials operating under varying conditions of speed, load, temperature and torque. The carefully balanced formulation is designed to minimize oxidative sludge and varnish formation, reduce wear, prevent scoring damage, and protect against metal fatigue and spalling damage under shock-load conditions.

Applications

- Service fill of conventional differentials in passenger cars and trucks
- Top-off only of limited-slip differentials in passenger cars and light trucks⁽¹⁾
- Service fill of differentials, final drives and transfer cases in some off-highway equipment
- Non-synchronized manual transmissions in trucks, buses and heavy equipment where the manufacturer specifies an API GL-5 or MT-1 gear oil

⁽¹⁾Notes: For complete drain and refill, many limited-slip differentials may require the manufacturer's specified gear lubricant or supplemental additive. Refer to the owner's manual for specific requirements.

MP Gear Lube meets or exceeds the requirements of:

- API Service GL-5, MT-1
- Meritor O76-A (SAE 85W-140), O76-D (SAE 80W-90), O76-E (SAE 75W-90)
- MIL-PRF-2105E

MP Gear Lube is registered or approved for:

- Mack GO-J (SAE 80W-90, 85W-140)
- MAN 342 Type M2 (SAE 75W-90, SAE 80W-90)
- MAN 342 Type M1 (SAE 85W-140)
- SAE J2360 (SAE 80W-90, 85W-140)

**Multipurpose
Automotive Gear
Lubricant, API
GL-5/MT-1**





Features/Benefits

- Excellent oxidation resistance and thermal stability to minimize sludge and varnish formation
- Excellent thermal durability and extreme-pressure (EP) properties for extended gear life
- High load-carrying capacity for protection against scuffing and wear
- Protects against rust and corrosion
- Good foam resistance

MP Gear Lube

Typical Properties				
SAE Grade	75W-90	90	80W-90	85W-140
Specific Gravity @ 60°F	0.878	0.892	0.880	0.894
Density, lbs/gal @ 60°F	7.31	7.43	7.40	7.48
Color, ASTM D1500	1.0	2.5	2.5	2.5
Flash Point (COC), °C (°F)	190 (374)	220 (428)	220 (428)	225 (437)
Pour Point, °C (°F)	-45 (-49)	-11 (12)	-30 (-22)	-12 (10)
Viscosity, Brookfield				
cP @ -40°C	120,000	---	---	---
cP @ -26°C	---	---	105,000	---
cP @ -12°C	---	---	---	110,000
Viscosity, Kinematic				
cSt @ 40°C	101	183	146	336
cSt @ 100°C	15.0	17.2	14.5	25.0
Viscosity Index	156	95	97	96

Health & Safety Information

For recommendations on safe handling and use of this product, please refer to the Safety Data Sheet via <http://www.phillips66.com/EN/products/Pages/MSDS.aspx>.

01-22-18

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LUBRICANTS

12.2 # 18,19

21

Triton® Synlube LDO

Phillips 66® Triton® Synlube LDO is a synthetic, API GL-5 automotive gear lubricant specially designed for long-drain service and extended warranty protection in passenger car and truck axles with hypoid gear sets.

Triton Synlube LDO is formulated to provide long service life and extended gear life in automotive differentials operating under varying conditions of speed, load, temperature and torque. It combines excellent oxidation resistance and thermal stability at high temperatures with outstanding low-temperature properties to ensure excellent performance over a wide temperature range. It has excellent water-separating properties to prevent the formation of emulsions and retain its lubricating properties even in the presence of a small amount of water.

Triton Synlube LDO is approved for 500,000-mile drain intervals in drive axles under Meritor extended warranties.

Applications

- Service fill of conventional differentials in passenger cars and trucks
- Top-off only of limited-slip differentials in passenger cars and light trucks⁽¹⁾
- Service fill of differentials, final drives and transfer cases of some off-highway equipment
- Non-synchronized manual transmissions in trucks, buses and heavy equipment where the manufacturer specifies an API GL-5 or MT-1 gear oil

⁽¹⁾Note: For complete drain and refill, many limited-slip differentials may require the manufacturer's specified gear lubricant or supplemental additive. Refer to the owner's manual for specific requirements.

Triton Synlube LDO meets or exceeds the requirements of:

- API Service GL-5, MT-1
- Mack GO-J
- MIL-PRF-2105E
- SAE J2360

Triton Synlube LDO is approved for service fill under the following OEM specifications:

- Meritor O76-R for extended-drain lubricants

**Synthetic
Long-Drain
Automotive
Gear Lubricant,
API GL-5/MT-1**





Features/Benefits

- Extended drain/extended warranty protection
- Outstanding oxidation resistance and thermal stability to minimize sludge and varnish formation
- Excellent thermal durability and extreme-pressure properties for extended gear life
- High load-carrying capacity for protection against scuffing and wear
- High shear stability
- Outstanding low-temperature properties
- Excellent water-separating properties
- Protects against rust and corrosion
- Good foam resistance
- Compatible with synthetic and conventional automotive gear oils

Triton® Synlube LDO

Typical Properties		
SAE Grade	75W-90	80W-140
Specific Gravity @ 60°F	0.874	0.882
Density, lbs/gal @ 60°F	7.28	7.34
Color, ASTM D1500	L 8.0	L 8.0
Flash Point (COC), °C (°F)	200 (392)	200 (392)
Pour Point, °C (°F)	-45 (-49)	-36 (-33)
Viscosity, Brookfield		
cP @ -40°C	119,000	-----
cP @ -26°C	-----	48,000
Viscosity, Kinematic		
cSt @ 40°C	114	222
cSt @ 100°C	17.2	25.5
Viscosity Index	166	146

Health & Safety Information

For recommendations on safe handling and use of this product, please refer to the Safety Data Sheet via <http://www.phillips66.com/EN/products/Pages/MSDS.aspx>.

09-15-16

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12.3 # 1, 2



22

HAVOLINE® UNIVERSAL ANTIFREEZE/COOLANT

PRODUCT DESCRIPTION

Havoline® Universal products are single phase, ethylene glycol antifreeze/coolants based on patented aliphatic carboxylate corrosion inhibitor systems and are available as a concentrate and a 50/50 pre-dilute.

CUSTOMER BENEFITS

Havoline Universal Antifreeze/Coolants deliver value through:

- **Wide service application** — Recommended use in Domestic, Asian and European automotive and light duty truck applications including newer hybrid vehicles.¹
- **Long Service Life** — 150,000 miles/240,000 km/5 years of cooling system protection.
- **Beneficial formulation** — Organic additive formulation that is free of silicate, nitrite, borate, phosphate, nitrate and amines and which promotes long service life.
- **Compatibility** — Compatible with other extended life coolant formulations. Note: It is recommended that this product not be diluted by more than 25% with other coolant formulations.
- **Performance** — Exceptional protection at high operating temperatures. Minimizes the occurrence of hard water scale.
- **Wide temperature application** — Protects against winter freeze up and minimizes chances of summer boil over.
- **Managed Inventory Costs** — Can be used in mixed fleet applications where both cars and light duty trucks are present from various manufacturers.¹
- **Stability** — Storage stability for at least 8 years.

¹ Some OEMs require the use of silicate containing coolants. Follow your OEM's recommendation.

Product(s) manufactured in the USA.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

A Chevron company product

1 April 2015
COOL-260

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FEATURES

Havoline Universal Antifreeze/Coolants are designed for all makes and all models of automobile and light duty trucks regardless of fuel type built by American, European, or Asian OEMs.¹ This product is dyed yellow, which allows it to be used as top-up in any automobile or light duty truck application without changing the existing coolant color. Havoline Universal is recommended for use in general service applications where cooling system warranty maintenance is not required. Mixing of Havoline Universal with other products will reduce its extended life properties.

Note: These products are not to be used to protect the inside of potable water systems against freezing.

APPLICATIONS

Recommended Applications for Havoline Universal Antifreeze/Coolants:

- All makes and all models of automotive and light duty trucks regardless of fuel type¹
- Meets or exceeds: **ASTM D3306**
- It is recommended that this product not be diluted with other coolant formulations by more than 25% in order to maintain performance claims.

PRODUCT DILUTION AND BOIL OVER PROTECTION RECOMMENDATIONS FOR HAVOLINE® UNIVERSAL ANTIFREEZE/COOLANT - CONCENTRATE

Boiling Protection, °F/°C (using a 15 lb pressure cap) 50% 1:1 (1 part antifreeze/1 part water)	265/129
Freezing Protection, °F/°C 40% 2:3 (2 parts antifreeze/3 parts water) 50% 1:1 (1 part antifreeze/1 part water) 60% 3:2 (3 parts antifreeze/2 parts water)	-12/-24 -34/-37 -62/-52

Notes

- Product concentrates should be agitated before use
- For optimum year round protection against freezing, boiling and corrosion, a 50 percent Havoline Universal (1 part antifreeze/1 part water) is recommended.
- For maximum protection against freezing in extremely cold areas, a 60 percent solution of Havoline Universal Antifreeze/Coolant - Concentrate (3 parts antifreeze/2 parts water) can be used. Concentrations greater than 67 percent are not recommended.
- Always dispose of used coolant in accordance with local, state and federal guidelines.

PRODUCT REFERENCE

Note: Bitterant is a flavor aversive that may help reduce the accidental ingestion of this product. These products contain bitterant.

Product Number 227062

SDS Number 14875

Havoline Universal Antifreeze/Coolant - Concentrate

Product Number 227063

SDS Number 14879

Havoline Universal Antifreeze/Coolant - Premixed
50/50

TYPICAL TEST DATA

HAVOLINE UNIVERSAL ANTIFREEZE/COOLANT - CONCENTRATE

Appearance	Light Yellow
Specific gravity 15/15°C	1.130
Freezing point, °C ^a , ASTM D1177	-37
pH ^b , ASTM D1287	8.3
Reserve alkalinity ^c , ASTM D1121	6.0
Silicate, % ^d	None

Minor variations in product typical test data are to be expected in normal manufacturing.

HANDLING PRACTICES

The primary limiting factor in the shelf life of a coolant is silicate instability. Since silicate will eventually polymerize to silicate gel, silicate containing coolants have a shelf life of about 18 months. Havoline Universal Antifreeze/Coolants are silicate-free and therefore can be stored for at least 8 years, provided the integrity of the container is maintained. Product should be agitated before use.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

1 April 2015
COOL-260



12.4.1 # 2
12.4.2 # 4

22

Synthetic Blend 15W40

PRODUCT DESCRIPTION

ALLFLEET Synthetic Blend 15W40 is a mixed fleet heavy duty motor oil recommended for all naturally aspirated and turbocharged four-stroke diesel engines and four-stroke gasoline engines in which the API CK-4 service category and SAE 15W-40 viscosity grade are recommended.

CUSTOMER BENEFITS

ALLFLEET Synthetic Blend 15W40 is an API CK-4 heavy duty engine oil specifically formulated for 2010 compliant low emission diesel engines with Selective Catalytic Reduction (SCR), Diesel Particulate Filter (DPF) and Exhaust Gas Recirculation (EGR) systems and calling for SAE 15W-40 heavy duty motor oil. It is fully compatible with previous engine models and previous API Oil Service Categories.

It delivers value through:

- » **Minimized operating costs.** Disperses soot and controls wear. Cylinders, pistons, rings, and valve train components are well protected against wear and corrosion, providing optimum service life and minimal maintenance. Contributes to optimal vehicle utilization and minimal downtime.
- » **Long emission control system life.** Provides optimum Diesel Particulate Filter (DPF) life for minimal downtime and cleaning, thus managing your maintenance costs.
- » **Managed inventory costs.** Backward compatible with all previous API Oil Service Categories and engine models. Good for services in four-stroke gasoline and naturally aspirated turbocharged and modern electronically controlled/low emission diesel engines calling for an SAE 15W-40 heavy duty motor oil. Allows users with a wide mix of engine brands to enjoy simplified inventory and dispensing systems that may contribute to saving money, space and handling time.



FEATURES

ALLFLEET Synthetic Blend 15W40 is a quality, mixed fleet heavy duty motor oil manufactured using selected high viscosity index base oils and additives that protect against sludge, varnish, deposits, wear, oxidation, foam, corrosion, and rust. ALLFLEET Synthetic Blend 15W40 helps minimize deposit buildup resulting from high temperature engine operation (especially in the piston and ring area), combats varnish formation, and helps keep vital engine parts clean. It also protects against corrosion and resists oxidation at high temperatures. ALLFLEET Synthetic Blend 15W40 meets the most stringent EGR soot control and particulate requirements.

FUNCTIONS

ALLFLEET Synthetic Blend 15W40 helps keep rings clean and free for maximum combustion pressure and low oil consumption. It helps minimize valve and piston crown land deposits. Its high level of ashless dispersants keeps fuel soot in

www.RelaDyne.com

CV.271201.092116

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Synthetic Blend 15W40

suspension and helps avoid filter plugging, heavy cylinder head sludge, abrasive polishing wear, high viscosity increase, and oil gelling. These problems can result in excessive engine wear and bearing failure on startup, without prior indication to the operator. Specially selected oxidation inhibitors control oxidation, sludge, and undue thickening during oil drain periods.

APPLICATIONS

ALLFLEET Synthetic Blend 15W40 is a mixed fleet motor oil recommended for naturally aspirated and turbo-charged four-stroke diesel engines and four-stroke gasoline engines in which the API CK-4 service category and SAE 15W-40 viscosity grade are recommended. It is formulated for engines operating under severe service and a wide range of climatic conditions.

ALLFLEET Synthetic Blend 15W40 is excellent for use in new advanced engines developed in response to 2010 emissions standards.

This product is recommended for use in Caterpillar engines in off-highway or construction applications which require an API CK-4 Service Category.

ALLFLEET Synthetic Blend 15W40 is approved for:

- » API Service Categories CK-4, CI-4 PLUS, CI-4, SM
- » Cummins CES 20081
- » DDC Power Guard 93K218
- » Mack EO-O Premium Plus
- » Volvo VDS-4

ALLFLEET Synthetic Blend 15W40 meets the requirements of:

- » Caterpillar ECF-3, ECF-2

TYPICAL TEST DATA

SAE Grade	15W-40
SDS Number	038
API Service	CK-4 / SN
Viscosity Index	145
Viscosity, Kinematic	
cST @ 40°C	113.9
cST @ 100°C	15.6
CCS Viscosity	
cP @ -20C	5,500
Flash Point, °C(°F)	226
Pour Point, °C(°F)	-33
Sulfated Ash, wt%	1.0
Specific Gravity @ 60°F	.0869
TBN	10.0
Sulfated Ash, wt%	1.0

Minor variations in product typical test data are to be expected in normal manufacturing.

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12.4.1 # 5.6

12.4.2 # 10, 11 Premium

(24)

AW Hydraulic Oils

ALLFLEET Premium AW Hydraulic Oils 32, 46, 68

Product Description

ALLFLEET Premium AW Hydraulic Oil is a high viscosity index, anti-wear hydraulic oils blending from superior quality base stocks. It is available in five viscosity grades to comply with most industrial applications. All grades are formulated according to the ISO viscosity grade classification

Benefits

ALLFLEET AW Hydraulic Oils contain additive systems which impart characteristics most desired in these types of oils:

- Excellent thermal stability – ALLFLEET Premium AW Hydraulic Oils contain the latest thermally stable zinc-type additives, virtually eliminating the formation of heat-related sludging in electro-hydraulic servos associated with conventional zinc-types oils.
- Excellent rust protection.
- Excellent anti-wear protection to pumps, motors, valves, and other hydraulic circuit components.
- Excellent antifoam protection.
- Excellent hydraulic stability in the presence of water will not contribute to the formation of corrosive reactants or metal-etching acids.

Application

ALLFLEET Premium AW Hydraulic Oils may be recommended for applications when a premium quality, antiwear hydraulic oil is required by equipment manufacturers. The oils meet the rigorous performance requirements including Denison HF-0 and HF-2; Cincinnati Milicron P-68, P-69, and P-70; Vickers M-2950-S and 1-286-S; and passes Vickers 35VQ25 Pump Test.

ALLFLEET Premium AW Hydraulic Oils provide excellent vane pump wear and protection. Extremely low pump part weight losses were encountered in the ASTM-D-2882 Vane Pump Wear Tests. Piston pump performance is also outstanding. No evidence of wear or distress was observed at the end of the 100-hour (5000psi) Denison P-46 Axial Piston Pump Test.

Technical Data

ISO Viscosity Grade	22	32	46	68	100
Viscosity @ 40°C, cSt	22.59	30	42.7	62.9	96.0
Viscosity @ 100°C, cSt	4.48	5.26	6.57	8.43	11.0
Viscosity, SUS @ 210°F	36.6	43.9	48.2	54.6	64
Viscosity Index	110	106	105	104	99
API Gravity	34.17	31.2	30.4	29.7	29
Flash Point: °C		220	226	235	
Pour Point: °C	-45	-36	-33	-30	-21
Color (ASTM-D 1500)	0.5	0.5	1.0	1.5	1.5
Oxidation (ASTM-D943)	4000+	>5000	>5000	>5000	3500
Total Acid # (ASTM-D974)	0.5	0.5	1.0	1.5	1.5
(ASTM-D665A)	PASS	PASS	PASS	PASS	PASS
(ASTM-D665B)	PASS	PASS	PASS	PASS	PASS

C2.142.050114

Contact your RelaDyne Representative for more information.

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888.830.3156





12.4.2 #9, 15, 16, 17

25

Global Full Synthetic Multi-Vehicle ATF

DuraMAX Global Full Synthetic Multi-Vehicle ATF is formulated for the newest generation of high efficiency transmissions and is also a fuel efficient choice for older models.

CATEGORY	TEST METHOD	TYPICAL VALUE
Gravity, °API	ASTM D287	35.6
Specific Gravity @ 60°F (15.6°C)	ASTM D4052	0.8468
Viscosity @ 40°C cSt	ASTM D445	28.56
Viscosity @ 100°C cSt	ASTM D445	5.797
Viscosity Index	ASTM D2270	151
Pour Point °C (°F)	ASTM D5950	-51 (-60)
Brookfield Viscosity at -40°C, cP	ASTM D2893	10,300
Color	ASTM D1500	Red



DuraMAX Global Full Synthetic Multi-Vehicle ATF is DEXRON® VI approved and suitable for use in the following applications:

- » Type A
- » Allison C-4
- » Allison TES-389
- » Dexron® VI
- » GMN10060
- » Audi G 052 025, 052 162, 055 025
- » Esso 71141
- » BMW P/N 83 22 0 024 359, ETL-8072B
- » BMW P/N 83 22 0 0246 922, ETL-7045E
- » BMW P/N 83 22 0 403 249, ETL-8072B
- » BMW P/N 83 22 9 407 765, LA 2634
- » BMW P/N 83 22 9 407 807, LT 711 41
- » Dexron III G/H, Dexron II, Dexron, AW1
- » Honda DW-1, Z-1
- » Volvo P/N 1161540-8
- » Hyundai/Kia/Mitsubishi Diamond SP-II, RED-1, SP-IV
- » Chrysler AS68RC, Diamond SP-III
- » Chrysler P/N 05127382AA, P/N 68043742AA (DEX VI)
- » JWS 3309, Any 3309
- » M315-2004 JASO 1A, 2A
- » MAN 339 Type Z1, Z2, V1
- » MAN 339 Type V2
- » Mazda ATF M-III, MV, T-IV
- » NAG-1
- » MB 223.2, 236.1, 236.2, 236.10, 236.12, 236.41, 236.5, 236.6, 236.7, 236.8, 236.9
- » Shell M-1375.4
- » Mercon V (XT-5-QM, XT-5-DM)
- » Mercon, Ford ESP-M2C166-H
- » Mercon SP, except 6HP26 / 6R60 / 6R75 transmissions
- » XT-6-QSP, XT-6-DSP, except 6HP26 / 6R60 / 6R75 transmissions
- » Mercon LV (XT-10-QLV)
- » Nissan Matic-D, J, K, 402
- » Texaco N402
- » Nissan Matic, J, S
- » Shell 3403, LA2634, Texaco 7045-E, ETL-8072B
- » Hyundai NSWS9638
- » Fuchs 3353
- » IDEMITSU APOROIL ATF HP
- » ISUZU 08200-9001 / Genuine ATF
- » MINI P/N 83 22 0 402 413
- » Saturn P/N 21005966
- » SAAB P/N 22 717 466, 93 165 147 (AW-1)
- » Jaguar P/N WSS-M2C922-A-1
- » Porsche P/N 999 917 547 00 (A2)
- » VW P/N GUS 000 162
- » Shell 3403 M115
- » Subaru ATF, ATF-HP
- » Toyota T-II, T-III, T-IV, WS, Ford XT8QAW
- » Saturn T-IV, GM TASA, T-IV ATF, GM WS ATF
- » JWS 3324
- » Voith 55.6335 (G607)
- » Volvo Passenger Car (4-6 sp), Volvo 97340, 97341
- » VW G 052 025, 162, 099, 055 025
- » ZF TE-ML 02F, TE-ML 03D, TE-ML 04D, TE-ML 09, TE-ML 11A
- » ZF TE-ML 14A, TE-ML 14B, TE-ML 14C, TE-ML 16L, ZF TE-ML 17C
- » VW TL52162 (LT71141)

Always check your owner's manual to determine the proper automatic transmission fluid for your vehicle. Do not use in high pressure systems in the vicinity of flames, sparks, and hot surfaces. Use only in well ventilated areas. Keep container closed. This product is not suitable for dual clutch transmissions (DCT) or continuously variable transmissions (CVT). Please consult with your RelaDyne associate for more details with regards to products for those applications. This product is Compatible for use with high viscosity applications outside of warranty without causing harm to the transmission; however the viscosity profile does not meet the specification requirements and may be subject to regulation in some countries and states in the U.S. such as California.

www.Reladyne.com

WD.N6LVPL.031616

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

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12.4.2 # 1,2,3

26

Synthetic Blend Motor Oils

DuraMAX Synthetic Blend Motor Oils provide superb performance for today's gasoline powered cars, SUVs, light trucks and vans. DuraMAX Synthetic Blend Motor Oils are specifically formulated to reduce fuel consumption, promote clean engines and extend engine life. DuraMAX Motor Oils are completely compatible with mineral or other synthetic oils.

DuraMAX Synthetic Blend Motor Oils use an Advanced Detergent Additive System blended with synthetic base oils to deliver the following benefits:

Benefits:

- ✓ Advanced additive detergency that fights deposit build up
- ✓ Enhanced wear protection in both low and high temperature climates
- ✓ Improved fuel efficiency
- ✓ Superior resistance to viscosity breakdown in severe environments
- ✓ Excellent sludge control
- ✓ Helps protect emission systems
- ✓ Excellent protection of critical turbo components

Industry

Specifications:

- ✓ API SN (0w20, 5w20, 5w30, 10w30, 10w40, and 20w50)
- ✓ ILSAC GF-5 (0w20, 5w20, 5w30, 10w30, and 10w40)
- ✓ Chrysler MS-6395 (0w20, 5w20, 5w30, 10w30)
- ✓ Ford WSS-M2C945-A (5w20), WSS-M2C946-A (5w30)
- ✓ Ford WSS-M2C930-A (5w20), WSS-M2C929-A (5w30)
- ✓ GM 6094M (0w20, 5w20, 5w30, 10w30)
- ✓ Honda, Acura (0w20) and Toyota as well as most import and domestic models requiring SAE motor oil

Typical Properties:

SAE Grade	0w20	5w20	5w30	10w30	10w40	20w50
Viscosity @ 40°C	44.5	48.2	60.1	68.1	87.6	154
Viscosity @ 100°C	8.46	8.4	10.1	10.8	13.1	17.8
Viscosity Index	170	150	150	140	150	125
API Gravity	35.52	32.8	32.9	31.6	31.4	29.7
Flash Point °C (°F)		216 (421)	220 (428)	219 (436)	215 (419)	240 (464)
Pour Point °C (°F)	-48	-42 (-44)	-45 (-49)	-43 (-45)	-42 (-44)	-33 (-27)
Cold Crank, cSt @ -30		5300	5390			
Cold Crank, cSt @ -25				5570	6040	
Cold Crank, cSt @ -15						4918
Low-Temp Pumping (MRV), cSt @ -35		18,000	25,000			
Low-Temp Pumping (MRV), cSt @ -30				24,600	32,000	
Low-Temp Pumping (MRV), cSt @ -20						23,600
NOACK Volatility		<15	< 15	< 15	< 15	< 15

TS 07.23.15

Contact your RelaDyne Representative for more information.

www.reladyne.com

888.830.3156





12.4.1 #7
12.4.2 #12

27

J20C Universal Tractor Fluid

Product Description

ALLFLEET™ Universal Tractor Hydraulic Fluid is a premium quality fluid for use in transmissions, hydraulic systems, oil immersed brakes, and other ancillary systems fitted to agricultural tractor and off-road equipment. It is an exceptional universal tractor fluid specially formulated from paraffinic base stocks and the latest technology, for use where a common fluid reservoir serves transmissions, final drives and hydraulic systems.

Application

- Tractors and other equipment using a common fluid to lubricate the transmission, differential and hydraulic systems
- Caterpillar power shift transmissions requiring a TO-2 Fluid
- Mobile equipment using Sundstrand hydrostatic transmissions
- Mobile and industrial systems operating over a wide temperature range
- ALLFLEET Universal Tractor Hydraulic Fluid is not recommended for Caterpillar TO-4 service

Benefits

- Incorporates a friction modifier to ensure proper noise-free operation of wet brakes
- Excellent low temperature fluidity
- Field tests prove ALLFLEET Universal Tractor Fluid provides excellent service in virtually all makes of construction and farm tractors
- Is frequently used as a single fluid to prevent accidental contamination or misapplication, and to eliminate the need to purchase and keep in inventory several products for most farm and construction equipment

Industry Specifications

- John Deere J20C
- MF1 143 and 1135
- Ford M2C 134D, M2C 159C
- New Holland 420A
- Case MS 1207, MS 1206
- Vickers 104C Pump
- KUBOTA Universal Tractor Fluid (UDT)
- Volvo BM
- Caterpillar TO-2
- Allison C3, Allison C4
- Sundstrand Pump (JDQ 84)
- MS 1206, 1207, 1209, 1210, 1230

Typical Analysis

Test	Typicals
Viscosity, cSt @ 40°C	68.4
Viscosity, cSt @ 100°C	10.2
Viscosity Index	130
API Gravity @ 60°F	29.7
Flash, COC, °C (°F)	202 (396)
Pour, °C	-40

Contact your RelaDyne Representative for more information.

TS.01105.042514

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12.4.1 H9.10
12.4.2 H14

28

GL-5 Gear Oils

Product Description

ALLFLEET GL-5 Gear Oils are multi-service EP gear lubricants manufactured from high quality base stocks and superior additive technology. They are recommended for use in gearboxes, manual transmissions, bearings, gear reducers and many other applications where an API Service classification GL-5 gear lubricant is specified. ALLFLEET GL-5 Gear Oils can be used for make-up of Limited Slip/Positive Traction rear axles.

Industry Specifications

- API MT-1
- API GL-5
- MIL-PRF-2105E
- PG-2 Limited Slip
- MACK GO-J

Typical Analysis

Test	GL-5 80w90	GL-5 85w140
Viscosity, cSt @ 40°C	151	360
Viscosity, cSt @ 100°C	15.36	28.74
Viscosity Index	96	109
API Gravity @60°F	27.79	27.21
Flash, COC, °C(°F)	219 (426)	203 (398)
Pour, °C(°F)	-29 (-20)	-14 (7)

TS 02.26.14

Contact your RelaDyne Representative for more information.

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888.830.3156



12.4.2 #5



URSA® HYDRAULIC OIL 10W

PRODUCT DESCRIPTION

Ursa® Hydraulic Oil 10W is a heavy duty on- and off-highway hydraulic oil that is recommended for SAE 10W applications and for equipment with Caterpillar TO-2 requirements.

CUSTOMER BENEFITS

Ursa Hydraulic Oil 10W delivers value through:

- **Meets many major pump manufacturer's requirements** — For antiwear-type hydraulic fluids in heavy duty on- and off-highway mobile hydraulic systems. Excellent Eaton-Vickers 35VQ25A performance.
- **Foam inhibition** — Contains special foam suppressant to minimize both foaming and aeration problems.
- **Excellent antiwear properties** — Formulated with anti-wear performance additives.
- **Excellent thermal stability** — In the presence of copper and steel.
- **Excellent filterability** — Thermal and hydrolytic stability helps prevent formation of deposits which may interfere with filtration in equipment with close tolerances.

FEATURES

Ursa Hydraulic Oil 10W is a premium hydraulic oil specifically designed to give maximum hydraulic pump protection in on- and off-highway heavy duty hydraulic applications where an SAE 10W engine oil is specified.

Ursa Hydraulic Oil 10W provides excellent antiwear protection, oxidation and corrosion inhibition, as well as foam and aeration suppression.

The antiwear additives in Ursa Hydraulic Oil 10W create a protective film on the metal surfaces. This protective film minimizes metal-to-metal contact, which is most severe in vane- and piston-type pumps.

Ursa Hydraulic Oil 10W is fully compatible with engine oils that may typically be used in hydraulic applications.

APPLICATIONS

Ursa Hydraulic Oil 10W is recommended for:

- Heavy duty on- and off-highway mobile hydraulic systems where an SAE 10W engine oil is specified.
- Caterpillar hydraulic systems where a **Caterpillar TO-2** fluid is required.
- Caterpillar hydraulic systems where a minimum of 0.09 percent (900 ppm) of zinc additive is specified.
- Pump applications requiring an **Eaton-Vickers 35VQ25A** hydraulic oil.

Do not use in high pressure systems in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

Product(s) manufactured in the USA, Colombia and El Salvador.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

A **Chevron** company product

1 July 2016
TTF-60

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TYPICAL TEST DATA

<i>Product Number</i>	<i>273270</i>
<i>SDS/MSDS Number</i>	
<i>USA</i>	<i>23575</i>
<i>Colombia</i>	<i>33075</i>
<i>El Salvador</i>	<i>33074</i>
<i>API Gravity</i>	<i>31.2</i>
<i>Viscosity, Kinematic</i>	
<i>cSt at 40°C</i>	<i>40</i>
<i>cSt at 100°C</i>	<i>6.5</i>
<i>Viscosity, Saybolt</i>	
<i>SUS at 100°F</i>	<i>184.7</i>
<i>SUS at 210°F</i>	<i>48</i>
<i>Viscosity Index</i>	<i>114</i>
<i>Flash Point, °C(°F)</i>	<i>234(452)</i>
<i>Pour Point, °C(°F)</i>	<i>-33(-27)</i>
<i>Zinc, wt %</i>	<i>0.094</i>

Minor variations in product typical test data are to be expected in normal manufacturing.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

1 July 2016
TTF-60



URSA® HYDRAULIC OIL 10W

PRODUCT DESCRIPTION

Ursa® Hydraulic Oil 10W is a heavy duty on- and off-highway hydraulic oil that is recommended for SAE 10W applications and for equipment with Caterpillar TO-2 requirements.

CUSTOMER BENEFITS

Ursa Hydraulic Oil 10W delivers value through:

- **Meets many major pump manufacturer's requirements** — For antiwear-type hydraulic fluids in heavy duty on- and off-highway mobile hydraulic systems. Excellent Eaton-Vickers 35VQ25A performance.
- **Foam inhibition** — Contains special foam suppressant to minimize both foaming and aeration problems.
- **Excellent antiwear properties** — Formulated with anti-wear performance additives.
- **Excellent thermal stability** — In the presence of copper and steel.
- **Excellent filterability** — Thermal and hydrolytic stability helps prevent formation of deposits which may interfere with filtration in equipment with close tolerances.

FEATURES

Ursa Hydraulic Oil 10W is a premium hydraulic oil specifically designed to give maximum hydraulic pump protection in on- and off-highway heavy duty hydraulic applications where an SAE 10W engine oil is specified.

Ursa Hydraulic Oil 10W provides excellent antiwear protection, oxidation and corrosion inhibition, as well as foam and aeration suppression.

The antiwear additives in Ursa Hydraulic Oil 10W create a protective film on the metal surfaces. This protective film minimizes metal-to-metal contact, which is most severe in vane- and piston-type pumps.

Ursa Hydraulic Oil 10W is fully compatible with engine oils that may typically be used in hydraulic applications.

APPLICATIONS

Ursa Hydraulic Oil 10W is recommended for:

- Heavy duty on- and off-highway mobile hydraulic systems where an SAE 10W engine oil is specified.
- Caterpillar hydraulic systems where a **Caterpillar TO-2** fluid is required.
- Caterpillar hydraulic systems where a minimum of 0.09 percent (900 ppm) of zinc additive is specified.
- Pump applications requiring an **Eaton-Vickers 35VQ25A** hydraulic oil.

Do not use in high pressure systems in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

Product(s) manufactured in the USA, Colombia and El Salvador.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

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TYPICAL TEST DATA

<i>Product Number</i>	<i>273270</i>
<i>SDS/MSDS Number</i>	
<i>USA</i>	<i>23575</i>
<i>Colombia</i>	<i>33075</i>
<i>El Salvador</i>	<i>33074</i>
<i>API Gravity</i>	<i>31.2</i>
<i>Viscosity, Kinematic</i>	
cSt at 40°C	40
cSt at 100°C	6.5
<i>Viscosity, Saybolt</i>	
SUS at 100°F	184.7
SUS at 210°F	48
<i>Viscosity Index</i>	<i>114</i>
<i>Flash Point, °C(°F)</i>	<i>234(452)</i>
<i>Pour Point, °C(°F)</i>	<i>-33(-27)</i>
<i>Zinc, wt %</i>	<i>0.094</i>

Minor variations in product typical test data are to be expected in normal manufacturing.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

1 July 2016
TTF-60

12.4.246



URSA[®] SUPER PLUS

SAE 30, 40

PRODUCT DESCRIPTION

Ursa[®] Super Plus monograde motor oils are recommended for use in two and four-cycle gasoline and diesel engines where the appropriate API service category and SAE 30 or 40 viscosity grade is specified by the OEM.

CUSTOMER BENEFITS

Ursa Super Plus monograde heavy duty motor oils deliver value through:

- **Managed oil costs** — Minimal piston crownland deposits and strong oxidation stability promote low oil consumption.
- **Long engine life** — resulting from additives that protect highly loaded parts from scuffing and wear optimizing engine overhaul intervals.
- **Outstanding engine cleanliness** — High detergency provides excellent deposit and sludge control in the piston ring belt area.
- **Access to Chevron's lubrication and industry knowledge** — Helps maximize your bottom line business results.

FEATURES

Ursa Super Plus monograde oils are quality, mixed fleet motor oils manufactured using selected high viscosity index base oils and additives that provide protection against sludge, varnish, ash deposits, wear, oxidation, foam, corrosion, and rust.

Ursa Super Plus monograde oils utilize technology to help provide excellent performance in older model engines.

FUNCTIONS

Ursa Super Plus monograde oils are strong performing crankcase oils for older diesel engines requiring SAE 30 or 40 monograde engine oil.

They are manufactured using selected paraffinic base oils in combination with detergent, dispersant, wear control, antioxidant, corrosion inhibitor and foam suppressant additives.

APPLICATIONS

Ursa Super Plus monograde oils are ideal for older diesel engines in mixed commercial fleets, farm machinery, construction equipment, marine and other off-highway applications specifying an SAE 30 or 40 monograde engine oil.

They may also be used in four-cycle gasoline engines where this product is recommended by the OEM.

Ursa Super Plus meets the requirements of:

- **API Service Categories**
 - CF*, CF-2*
- **Detroit Diesel Corporation** 2-cycle engine recommendations (71, 92) (SAE 40)

* Obsolete specification.

Product(s) manufactured in the USA.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

A **Chevron** company product

10 April 2015
HDMO-90

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TYPICAL TEST DATA

SAE Grade	30	40
<i>Product Number</i>	<i>271203</i>	<i>271204</i>
<i>SDS Number</i>	<i>23578</i>	<i>23578</i>
API Gravity	29.4	28.7
Viscosity, Kinematic cSt at 40°C cSt at 100°C	96 11.5	141 14.7
Viscosity Index	107	104
Flash Point, °C(°F)	232(450)	254(489)
Pour Point, °C(°F)	-27(-17)	-24(-11)
Sulfated Ash, wt %	0.95	0.98
Base Number, ASTM D2896	6.3	6.3
Phosphorus, wt %	0.069	0.069
Zinc, wt %	0.072	0.072

Minor variations in product typical test data are to be expected in normal manufacturing.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

10 April 2015
HDMO-90



URSA[®] SUPER PLUS

SAE 30, 40

PRODUCT DESCRIPTION

Ursa[®] Super Plus monograde motor oils are recommended for use in two and four-cycle gasoline and diesel engines where the appropriate API service category and SAE 30 or 40 viscosity grade is specified by the OEM.

CUSTOMER BENEFITS

Ursa Super Plus monograde heavy duty motor oils deliver value through:

- **Managed oil costs** — Minimal piston crownland deposits and strong oxidation stability promote low oil consumption.
- **Long engine life** — resulting from additives that protect highly loaded parts from scuffing and wear optimizing engine overhaul intervals.
- **Outstanding engine cleanliness** — High detergency provides excellent deposit and sludge control in the piston ring belt area.
- **Access to Chevron's lubrication and industry knowledge** — Helps maximize your bottom line business results.

FEATURES

Ursa Super Plus monograde oils are quality, mixed fleet motor oils manufactured using selected high viscosity index base oils and additives that provide protection against sludge, varnish, ash deposits, wear, oxidation, foam, corrosion, and rust.

Ursa Super Plus monograde oils utilize technology to help provide excellent performance in older model engines.

FUNCTIONS

Ursa Super Plus monograde oils are strong performing crankcase oils for older diesel engines requiring SAE 30 or 40 monograde engine oil.

They are manufactured using selected paraffinic base oils in combination with detergent, dispersant, wear control, antioxidant, corrosion inhibitor and foam suppressant additives.

APPLICATIONS

Ursa Super Plus monograde oils are ideal for older diesel engines in mixed commercial fleets, farm machinery, construction equipment, marine and other off-highway applications specifying an SAE 30 or 40 monograde engine oil.

They may also be used in four-cycle gasoline engines where this product is recommended by the OEM.

Ursa Super Plus meets the requirements of:

- **API Service Categories**
 - CF*, CF-2*
- **Detroit Diesel Corporation** 2-cycle engine recommendations (71, 92) (SAE 40)

* Obsolete specification.

Product(s) manufactured in the USA.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

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HDMO-90

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TYPICAL TEST DATA

SAE Grade	30	40
<i>Product Number</i>	<i>271203</i>	<i>271204</i>
<i>SDS Number</i>	<i>23578</i>	<i>23578</i>
API Gravity	29.4	28.7
Viscosity, Kinematic cSt at 40°C cSt at 100°C	96 11.5	141 14.7
Viscosity Index	107	104
Flash Point, °C(°F)	232(450)	254(489)
Pour Point, °C(°F)	-27(-17)	-24(-11)
Sulfated Ash, wt %	0.95	0.98
Base Number, ASTM D2896	6.3	6.3
Phosphorus, wt %	0.069	0.069
Zinc, wt %	0.072	0.072

Minor variations in product typical test data are to be expected in normal manufacturing.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

10 April 2015
HDMO-90



12.4.2 #18.19 (31)

Synthetic Gear Oils

Product Description

ALLFLEET Synthetic GL-5 Gear Lubricants are fully synthetic, multipurpose, heavy-duty gear lubricant. These Synthetic GL-5 Gear Lubricants have low pour and channel points. These properties permit the products to flow readily to lubricated surfaces, including sub-zero temperatures. They also help protect gears and bearings. A high viscosity index provides maximum protection over a wide range of temperatures. In addition to extending the life of differential parts, these low temperature properties also provide the potential for fuel savings by reducing the drag normally encountered when using conventional petroleum-based lubricants and by permitting more of the engine horsepower to be transmitted to the drive wheels. ALLFLEET Synthetic GL-5 Gear Lubricants separate readily from water. They pass two industry standards for demulsibility – US Steel Specification 224, and the American Gear Manufacturers (AGMA) Standard 250.03.

ALLFLEET Synthetic GL-5 Gear Lubricants are recommended for applications where heat, water and extended drain intervals contribute to severe service. These applications include farm equipment and heavy construction equipment. ALLFLEET Synthetic GL-5 Gear Lubricants are recommended for use in heavy duty and automotive differentials and industrial gearing, where API GL-5 gear oils are suggested. 75w-140 includes limited slip applications.

Industry Specifications

- API GL-5
- Eaton Road-Master, Eaton, and Meritor (formerly Rockwell)
- Mac Truck GO-J
- MIL-PRF-2105E
- Dana 256 spec – formerly Eaton PS 163 (75w90)

Typical Analysis

Test	GL-5 75w90	GL-5 75w140	GL-5 80w140
Viscosity, cSt @ 40°C	100.6	168.6	219.8
Viscosity, cSt @ 100°C	16.52	24.88	28.99
Viscosity Index	178	181	171
API Gravity @60°F	33.1	33.8	32.0
Flash, COC, °C(°F)	216 (420)	218 (424)	222 (432)
Pour, °C(°F)	-45 (-49)	-45 (-49)	-45 (-49)
Brookfield @ -40°C	119,260	131,300	n/a
Brookfield @ -26°C	n/a	n/a	58,828

TS 02.26.14

Contact your RelaDyne Representative for more information.

www.reladyne.com

888.830.3156





Synthetic Gear Oils

Product Description

ALLFLEET Synthetic GL-5 Gear Lubricants are fully synthetic, multipurpose, heavy-duty gear lubricant. These Synthetic GL-5 Gear Lubricants have low pour and channel points. These properties permit the products to flow readily to lubricated surfaces, including sub-zero temperatures. They also help protect gears and bearings. A high viscosity index provides maximum protection over a wide range of temperatures. In addition to extending the life of differential parts, these low temperature properties also provide the potential for fuel savings by reducing the drag normally encountered when using conventional petroleum-based lubricants and by permitting more of the engine horsepower to be transmitted to the drive wheels. ALLFLEET Synthetic GL-5 Gear Lubricants separate readily from water. They pass two industry standards for demulsibility – US Steel Specification 224, and the American Gear Manufacturers (AGMA) Standard 250.03.

ALLFLEET Synthetic GL-5 Gear Lubricants are recommended for applications where heat, water and extended drain intervals contribute to severe service. These applications include farm equipment and heavy construction equipment. ALLFLEET Synthetic GL-5 Gear Lubricants are recommended for use in heavy duty and automotive differentials and industrial gearing, where API GL-5 gear oils are suggested. 75w-140 includes limited slip applications.

Industry Specifications

- API GL-5
- Eaton Road-Master, Eaton, and Meritor (formerly Rockwell)
- Mac Truck GO-I
- MIL-PRF-2105E
- Dana 256 spec – formerly Eaton PS 163 (75w90)

Typical Analysis

Test	GL-5 75w90	GL-5 75w140	GL-5 80w140
Viscosity, cSt @ 40°C	100.6	168.6	219.8
Viscosity, cSt @ 100°C	16.52	24.88	28.99
Viscosity Index	178	181	171
API Gravity @60°F	33.1	33.8	32.0
Flash, COC, °C(°F)	216 (420)	218 (424)	222 (432)
Pour, °C(°F)	-45 (-49)	-45 (-49)	-45 (-49)
Brookfield @ -40°C	119,260	131,300	n/a
Brookfield @ -26°C	n/a	n/a	58,828

TS 02.26.14

Contact your RelaDyne Representative for more information.

www.reladyne.com
888.830.3156



CERTIFICATE OF INTERESTED PARTIES

FORM 1295

1 of 1

Complete Nos. 1 - 4 and 6 if there are interested parties.
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

OFFICE USE ONLY CERTIFICATION OF FILING

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

A. J. Hurt Jr., Inc
Houston, TX United States

Certificate Number:
2018-332622

Date Filed:
04/02/2018

Date Acknowledged:
04/10/2018

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

Fort Bend County Texas

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.

18-052
Oil and Lubricants

4	Name of Interested Party	City, State, Country (place of business)	Nature of interest (check applicable)	
			Controlling	Intermediary

5 Check only if there is NO Interested Party.



6 UNSWORN DECLARATION

My name is _____, and my date of birth is _____.

My address is _____, _____, _____, _____, _____.
(street) (city) (state) (zip code) (country)

I declare under penalty of perjury that the foregoing is true and correct.

Executed in _____ County, State of _____, on the _____ day of _____, 20____.
(month) (year)

Signature of authorized agent of contracting business entity
(Declarant)