



# **Chevron Branded Lubricants Packaging and Bulk Sale Manual**



Our Family of Brands

## **INTRODUCTION**

*Product Integrity is essential to the long term profitability of the Chevron Lubricants (CL) business and Marketers of CL's lubricant products. This Chevron Branded Lubricants Packaging and Bulk Sale Manual provides requirements and guidelines to maintain product integrity from receipt of the product from the CL plant through the Marketer's delivery to the end use customer. The CL product integrity requirements and guidelines have been based on and incorporated into the API Recommended Practice 1525 First Edition, June 1997. This was done to enable Marketers to efficiently ascertain the requirements and guidelines, for maintaining product integrity, through the review of a single document.*

In this manual, the API Recommended Practice has been largely maintained and is recognizable via its black text. The 10 sections of the API practice have been reproduced in their entirety without modification, except where indicated. However, some API appendices have been replaced by CL Standards. API Appendix D was also deleted as it is not applicable to product integrity.

*The additional CL requirements and guidelines are bold, italicized, and colored green to differentiate them. Please contact your CL Business Consultant if you have any questions or concerns. CL content was last updated in March of 2018.*

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# Bulk Oil Testing, Handling, and Storage Guidelines

## 1 Scope

The purpose of these guidelines is to provide recommended equipment and procedures for the proper handling of incoming and outgoing shipments of lubricants to prevent contamination and spillage, and to protect product quality. The guidelines cover receipt, storage, **packaging** and shipment of finished lubricants in bulk, drum, or pail. A log detailing incoming and outgoing shipments is recommended **by API, but required by Chevron Lubricants (CL). The guidelines also provide requirements and recommendations regarding the handling and dilution of coolants.**

This recommended practice provides general guidance on the proper handling **and packaging** of bulk oil. Application of all or part of the guidelines should be determined on a case-by-case basis.

## 2 Governmental Requirements and Reviews

Reviews should be conducted periodically to help ensure that the facility meets applicable federal, state, or local requirements. **CL recommends in all cases that government regulations be followed. If government regulations conflict with CL requirements, an 'exception' request must be submitted. Please contact your Chevron Business Consultant (BC) for further instruction if this issue presents itself.** These reviews should include, but are not limited to the following:

- a. Spill Prevention Control and Countermeasure (SPCC) plans, 40 *Code of Federal Regulations* (CFR) 112 and other Environmental Protection Agency (EPA) requirements.
- b. Occupational Safety and Health Act (OSHA) requirements.
- c. Tank or vessel inspection records, registration, or files.
- d. Discharge or remediation permits.
- e. Air and water permits.
- f. Oil Pollution Act of 1990 (OPA 90) regulations and contingency plans.
- g. State and local emergency plans.
- h. 49 *Code of Federal Regulations* 195—Department of Transportation (DOT) Transportation of Hazardous Liquid by Pipeline regulations.
- i. Superfund Amendments and Reauthorization Act (SARA) Title III requirements.
- j. United States Coast Guard (USCG) requirements, 33 *Code of Federal Regulations* 154.
- k. Local or state Fire Marshall permits.

## 3. Definitions

**3.1** For the purposes of this recommended practice, the following definitions apply:

- 3.1.1 **may:** indicates provisions that are optional and, consequently, are at the discretion of the designer or operator.
- 3.1.2 **must:** indicates important legal or safety considerations.
- 3.1.3 **shall:** indicates provisions that are mandatory to meet [this API standard].
- 3.1.4 **should:** indicates provisions that are recommended but not mandatory. Implementation of these provisions will be made based on consideration of the following, as appropriate: (a) risk/benefit analysis, (b) company standards, (c) company experience, and (d) company philosophy
- 3.1.5 **underground tank:** a buried container that has a capacity of more than 110 gallons (416 liters) and is used to store petroleum, additives, or other products for later use.
- 3.1.6 **CL requires:** indicates additional provisions that are mandatory for Chevron Lubrication Marketers.
- 3.1.7 **CL recommends:** indicates additional provisions that are recommended for ease of operation and maximum product integrity.
- 3.1.8 **Distributor/Marketer:** API uses the term Distributor while CL uses the term Marketer – in these guidelines, both terms refer to CL's Lubrication Marketers.
- 3.1.9 **Truck:** includes all transport vehicles (e.g. rail cars) and requirements for trucks also apply to all transport vehicles unless specifically prohibited by configuration or regulation.

## 4 Facility and Equipment Standards

The following are recommendations for the tankage, lines, and testing equipment, and are intended to complement the general operating guidelines.

### 4.1 STORAGE TANKS

**4.1.1** Tanks may be either above or below ground. Tanks should meet all federal, state, and local codes and requirements. Underground tank integrity testing should be done annually, and records of such testing should be maintained. *CL recommends not using below ground tanks due to potential liabilities associated with leaks. CL recommends tanks be designed and constructed using API standards: API-650 Welded Steel Tanks for Oil Storage, API-651 Cathodic Protection for Above Ground Petroleum Storage Tanks, API-2000 Venting Atmospheric and Low-Pressure Storage Tanks, API -2350 Overfill Protection for Petroleum Storage Tanks, API-2550 Measurements and Calibration of Petroleum Storage Tanks. CL also recommends tanks be inspected and maintained using API standards API-2015 Cleaning Petroleum Storage Tanks, and API-653 Tank Inspection, Repair, Alteration, and Reconstruction. CL also recommends tanks be designed, constructed and maintained per National Fire Protection Agency (NFPA) 30.*

**4.1.2** All tanks should be clearly marked with the product name, as well as any other information required by federal, state, and local laws. *CL requires tanks be clearly marked with full product name and product code.*

**4.1.3** All tanks, except cone-bottom tanks, should have a water draw-off at the lowest possible point within the tank. *CL requires that tanks are water drawn as specified in a receiving or shipping procedure, or as a scheduled routine duty at a minimum of every quarter.*

**4.1.4** All tanks should be designed to allow for sampling of the contents. A sample obtained through a pump or line is acceptable, provided adequate flushing procedures are used.

**4.1.5** When changing tank service from one product type to another, the tank should be emptied completely and cleaned first. It is not necessary to clean between shipments that have the same grade and performance level. *CL requires verification that a tank has been completely emptied, prior to introducing a new product of the same family group. Additionally, CL requires the tank be flushed with non-dyed diesel or the scheduled product, prior to introducing a product from another family group, to remove sludge, water, and other residue. CL provides a list of products and their associated product family group in Appendix F. Appendix F also provides the means for calculating the minimum volume of flush required by CL for changing the service of a tank's associated piping systems.*

**4.1.6** The facility should be capable of storing line flushings. Disposal of line flushings should be in accordance with federal, state, and local laws. *CL requires Marketers have a dedicated flush oil tank. The flush oil storage tank and all temporary flush oil containers must be clearly labeled (for example "Flush Oil"). CL recommends that empty product containers not be used for this purpose. CL requires all product labels be removed from container(s) and replaced with "flush oil" labeling.*

**4.1.7** Tanks should be designed so that their contents can be volumetrically measured/gauged in some manner.

**4.1.8** All tanks should be designed so that the temperature of their contents can be monitored. Heating, if required to facilitate handling, should be carefully controlled to prevent product degradation.

**4.1.1** *CL recommends tank vent ports incorporate a vent filter that is a quality rating of Beta 20-75 or better (98,6% efficient 20-micron breather filter).*

**4.1.2** *CL requires that all temporary storage tanks used to handle lubricants, or to transfer bulk lubricants to remote locations, conform to same use considerations as the permanently mounted tanks; specifically, the use of vent filter, labels, cleaning and flushing when changing products.*

### 4.2 LINES, PUMPS, METERS, AND HOSES

**4.2.1** All lines should be clearly identified with the product name near the valve closest to the tank discharge or receiving point. *CL requires product systems be labeled at each connection and valve. CL recommends all lines should be as short as possible with no low spots or dead legs that can retain product when flushing the system.*

**4.2.2** It is preferred that each product have separate (*dedicated systems*) tanks, lines, pumps, and meters. *CL recommends dedicated product systems for ease of operation, elimination of flushing, and prevention of accidental mixing of products.*

**4.2.3** In situations where a totally dedicated system for each product is not feasible, it may be acceptable to use limited common lines and a common pump/meter within each of the product groups. Common lines and pumps/meters should not be

used for products in different groups (hydraulic oils, motor oils, gear oils, ATF). *CL requires non-dedicated (common) system be limited to products from the same family groups as defined in Appendix F; an exception being that products from Family Groups 1 & 14 may share the same system. CL requires that a Marketer, through its BC, obtain PLCM-MLS approval to use common systems for products outside of family groups 1, 2, 5, 14, 15, & 20. CL provides a list of products and their associated product family group in Appendix F. Appendix F also provides the means for calculating the minimum volume of flush required by CL for moving from one product to another through a common system. CL requires detailed written flushing procedures be in place for each non-dedicated (common) system. The flushing procedures must include a method to identify the family group of the last product in the system; this information is required to calculate the amount of flush required to use the system for the next product. Flush oil cannot be sold as a Chevron branded product, nor be mixed or blended into other Chevron products.*

**4.2.4** Lines should have isolated valves close to the pump (manifold) and should be equipped with appropriate pressure-relief controls.

**4.2.5** Schedule 40 carbon steel or stainless steel are the preferred materials for all lines carrying lube oils. Galvanized and PVC pipe are not recommended for lubricants. Most PVC pipe is manufactured for water service and is incompatible with hydrocarbons, especially low-viscosity products and synthetics.

**4.2.6** All lines and hoses at bulk loading racks should be designed to drain-dry, and/or procedures should provide for line flushing using pigs, inert gas, or air if it is safe to do so.

**4.2.7** All scales and meters should be routinely and regularly calibrated and should comply with city, county, state, federal, and other applicable regulations. Records of calibration should be maintained. *CL requires a minimum of an annual calibration, that inspected/calibrated equipment be tagged by inspecting agency to include date and inspector information, and that records are available for inspection. Meters and scale calibration must comply with National Institute of Standards and Technology (NIST) requirements.*

**4.2.8** Loading and filling lines should contain a strainer of 60-mesh or finer, to protect the pump. Small micron-size screens may be required to meet cleanliness requirements.

**4.2.9** To maintain good housekeeping, drip pans should be used where the hoses are coupled.

**4.2.10** All hoses used within the facility should be dedicated to a specific product group and identified to reflect that service. *CL has defined family groups for products in Appendix F.*

**4.2.11** A schematic drawing of the bulk plant facilities indicating tank sizes, products, lines, pumps, and other pertinent information is recommended.

### 4.3 PRODUCT TESTING EQUIPMENT

For facilities handling bulk lubricants, the following equipment should be available to perform basic product tests:

- a. *CL requires* Clean, dry, and clear glass or plastic bottles that can be used when making visual comparisons to reference samples for color, water, and contamination.
- b. A handheld device to measure product viscosity grade. (This is used for viscosity grade identification only. This is not a measure of accurate viscosity.)
- c. A soldering iron *or hot plate* to run crackle tests for water contamination.
- d. An explosion-proof droplight to inspect 55-gallon drums for internal cleanliness.
- e. A sample thief to secure representative samples from storage tanks or other containers.
- f. Any additional laboratory equipment that may be necessary to complete ASTM tests on products that are blended on site.
- g. *CL recommends Hydrometers and cylinders for running API gravity testing (required for filling by weight).*
- h. *CL recommends Zinc testing kits for detection of zinc in zinc free products, if handling zinc free products.*

### 4.4 PERSONAL SAFETY EQUIPMENT

Safety equipment is recommended to protect employees. Appropriate safety equipment may include the following:

- a. Hardhat.
- b. Protective eyewear.
- c. Fire extinguisher.
- d. Solvent-impervious gloves.
- e. Long-sleeved clothing and/or coveralls.
- f. Safety belts.
- g. Personnel should follow a written safety program that includes appropriate governmental regulations and recommended company safety policies.

## **h. Safety Shoes**

### **4.5 TRAINING RECORDS**

Records should be maintained to document training provided to employees who handle loading or packaging of lubricants. **CL requires records be maintained to document training provided to employees on Standard Operating Procedures (SOPs).**

## **5 Sampling and Testing**

General sampling and testing guidelines are located in Appendixes B and C.

## **6 Storage**

### **6.1 GENERAL**

**6.1.1** All bulk oil products should be stored in dedicated tanks.

**6.1.2** Clearly mark tanks as to contents, disclosing product name, and viscosity. **CL requires tanks be clearly marked with full product name and product code.**

**6.1.3** Beginning and ending balances should be recorded.

**6.1.4** Tanks should be designed so that samples may be taken.

**6.1.5** Tanks should be designed so that the temperature of the contents can be monitored.

### **6.2 COMMINGLING**

**6.2.1** Products from different companies should not be commingled, even if the product is similar.

Note: Under some circumstances, mixing different oils with different additive systems may cause adverse reactions. Additionally, there may be commercial or contractual restrictions that prohibit commingling different products from different companies. Therefore, as a general rule, oils should not be mixed, unless full disclosure is made to all parties involved.

**6.2.2** Tanks should be drained and flushed between similar products from different companies.

**6.2.3** Tanks should be drained and flushed between different grades of the same product.

**6.2.4** Tanks should be cleaned between different products or product groups.

## **7. Bulk Product Pick-up and Unloading Procedures**

### **7.0 TANK TRUCK LOADING AT CHEVRON FACILITIES**

**7.0.1** **CL requires truck be prepared to load products prior to entering a CL loading rack by meeting following conditions:**

- a. For transporting products in family groups 2, 3 & 20 compartments must have documentation verifying that the trailer either:**
  - i. Transported a full load of non-dyed, non-recycled, diesel last;**
  - ii. Transported a compatible product last (Appendix F may be used to determine if products are compatible); or**
  - iii. Had its compartments hot water surfactant washed, rinsed and dried, then flushed with either diesel or base oil (new or used for this purpose only) to remove residual water.**
- b. For transporting products in all other family groups documentation verifying compartments were diesel flushed and drained is acceptable as is any of the documentation described in 7.0.1.a.**
- c. Truck peripherals (pump, hoses, etc.) are not used at Chevron Plant for loading. If truck peripherals (pumps, hoses, etc.) are to be used for unloading they must meet the requirements specified for compartments.**
- d. Compartments must be clean and clear of residual product, water, dirt, and debris.**
- e. Manifolds must be clean, dry, & odor free when internal valves are opened.**
- f. Prior load cannot be dyed diesel or gasoline**
- g. Compartments must not contain 10% or more of lower flammability limit of a vapor**

**7.0.2** **Trucks with residual product left from prior load will not be loaded.**

**7.0.3** **CL will sample truck loads and test samples prior to releasing truck for unloading. CL will retain this sample for 6 months.**

## 7.1 BEFORE UNLOADING TRUCKS

**7.1.1** Properly position the truck for unloading; secure the brakes, and chock the tires. *CL requires Standard Operating Procedure (SOP) be developed for all unloading activities. All personnel unloading bulk products must be trained on SOP. CL requires the procedure include a bulk lubricant unloading checklist to ensure that personnel follow the SOP when unloading CL products. If CL arranged transport the "Chevron Lubricants Unloading Checklist & Authorization" form must be used in place of or in addition to any Marketer checklist. CL also requires the use of a "Chain of Custody Log" to record all activities associated with unloading CL lubricants from a transport to the tank farm. This log tracks data that is critical to resolution of problems if they arise. See Appendix A for an example of a recommended log. The log is retained for a minimum of 1 year and made available to BC upon request.*

**7.1.2** Carefully check delivery documents to verify the products and quantities to be unloaded. If multiple products are included in separate compartments, take special care to avoid possible cross-contamination. A Bulk Receiving/Batch Log (see Appendix A) should be maintained for each product received.

**7.1.3** Obtain a sample, per sampling instructions (see Appendix B). Complete the identification label, attach it to the sample bottle, and submit the sample to the laboratory. *CL requires:*

- a. A 6-ounce sample is taken from each compartment unloaded and retained for 6 months. Sample must be clearly labeled and made available to BC upon request.*
- b. If a direct shipment is made from the lubricant plant to a customer, a sample is taken from each compartment unloaded and retained for 6 months.*
- c. The sample is compared visually to reference samples (sample from last delivery) for color and appearance. CL recommends if any appearance of haziness is recognized, a crackle (water) test should be made.*
- d. If the sample color or appearance is questionable, stop the unloading process and contact the Chevron Lubetek Group at 800-585-3835; they will work the issue and assist to develop a plan of action. Be prepared to provide CL Order Number, Product Name, and Compartment Number to Lubetek*

**7.1.4** Gauge the receiving tank to verify that there is enough room for the product to be unloaded. The quantity of the product to be unloaded should not exceed safe tank height, which is considered to be 90 percent of tank capacity.

**7.1.5** Upon release by the laboratory, or verification that the shipment conforms to acceptance criteria, connect the ground strap to the trailer and prepare to unload the truck.

**7.1.6** All unloading should be performed in accordance with applicable safety procedures and governmental regulations.

**7.1.7** Inspect hoses for integrity and the absence of contaminants. Faulty hoses should not be used. Hoses used for unloading other products, or hoses that are dirty, should be flushed prior to use.

**7.1.8** Before unloading, lines and valves must be set to direct the product to the proper tank. Piping systems with common lines, pumps, or manifolds should be flushed to displace any prior product (see Table 1). *Appendix F provides the means for calculating the minimum volume of flush required by CL for moving from one product to another in a common system. CL requires Standard Operating Procedures for draining, pigging, air-blowing and flushing each non-dedicated (common) system. The SOP must include a method to identify the family group of the last product in the system; this information is required to calculate the amount of flush required to use the system for the next product. Record the amount of flush in the Chain of Custody Log; See example in Appendix A.*

**7.1.9** *If the truck pumping system is to be used for unloading, CL requires inspection and flushing of the truck pump, hoses, and piping. Documentation verifying truck pump and truck hose preparation must be validated before pumping can commence. CL requires Standard Operating Procedures for draining, pigging, air-blowing and flushing truck pumping systems. Appendix F provides the means for calculating the minimum volume of flush required by CL for pumping multiple products using the truck's common pumping system. The flushing procedures must include a method to identify the family group of the last product in the system; this information is required to calculate the amount of flush required to use the system for the next product. Record the amount of flush in the Chain of Custody Log; See example in Appendix A.*

Note: All trucks/trailers have emergency or hydraulic valves that must be opened before unloading can begin. Operator must ensure the dome hatch is not obstructed, which could cause the trailer to implode.

## 7.2 DURING UNLOADING

**7.2.1** Once pumping has begun, inspect the system for possible leaks. If any leaks are noted, the unloading should be discontinued while the leak is repaired. Drip pans should be used to collect or contain any spillage.

**7.2.2** During pumping, observe the pressure level on the pump discharge. An unusually low or high pressure may indicate that the pump suction is obstructed, or that the dome cover or valves are improperly open. Also, check the receiving tank to

verify that the product from the trailer has been directed to the correct tank. If any anomalies are noted, all pumping operations should be shut down until the matter is understood and resolved.

### 7.3 AFTER UNLOADING

**7.3.1** Once the trailer is empty, close the bottom valve, pump the suction valve, and turn off the pump. When possible, particularly when receiving lines to storage tanks are not product specific, blowing receiving lines with inert gas and/or ball will clear product from lines into receiving tank. Then, close all remaining valves, beginning at the receiving tank and ending at the pump discharge.

Table1 - Recommended Flushing Volumes for Common Systems – **Replaced with Appendix F.**

**7.3.2** Bleed any pressure from the lines before disconnecting the suction hose. Connections should be released slowly to avoid possible discharge due to pressure buildup. Hoses should be capped/plugged before they are returned to storage areas.

**7.3.3** Cap the trailer outlet valve, disconnect the ground strap, return the drip pan, and remove the wheel chocks. Release the truck.

**7.3.4** Record receiving tank volumes (gauge readings) on the Bulk Receiving/Batch Log (see Appendix A).

## 8 Bulk Loading & Delivery Procedures

### 8.1 GENERAL

**8.1.1** Truck operators should be DOT qualified per all federal, state, and local regulations. *CL requires Standard Operating Procedure (SOP) be developed for bulk deliveries; this includes package trucks with IBCs, totes, or drums used to pump bulk lubricants into customer storage. All personnel loading bulk products must be trained on SOP. CL also requires the use a "Chain of Custody Log" to log all bulk Chevron lubricants loaded for transport to a customer. This log tracks data that is critical to resolution of problems if they arise. See Appendix A for examples of recommended checklist and log. The log is retained for a minimum of 1 year and made available to BC upon request.*

**8.1.2** Truck operators should comply with all applicable loading site safety precautions and regulations. Loading site personnel should clearly post these safety precautions if appropriate.

**8.1.3** Transport trailers and local bulk delivery equipment must have tight-sealing loading domes. *CL recommends compartments are checked regularly for leakage and distortion. CL recommends trucks have at least two separate pumps and hose systems to minimize excessive flushing between products. CL requires all scales and meters be routinely and regularly calibrated to comply with city, county, state, federal, and other applicable regulations. CL requires a minimum of an annual calibration, that inspected/calibrated equipment be tagged by inspecting agency to include date and inspector information, and that records are available for inspection. Meters and scale calibration must comply with National Institute of Standards and Technology (NIST) requirements.*

**8.1.4** Tank compartments should be steam-cleaned and dried prior to loading if they contained any corrosive or flammable products, glycol, or any non-petroleum products during the previous load. Special products, such as active sulfur-containing products, must be handled in segregated systems, or stringent flushing procedures must be followed. Even trace amounts of such products in engine oils, turbine oils, hydraulic oils, and so forth, can cause catastrophic component failure. *CL requires truck be prepared to load products by meeting following conditions, which should be included in the truck loading SOP:*

- *For transporting products in family groups 2,3, & 20 compartments must have documentation verifying that the trailer either:*
  - *Transported a full load of non-dyed, non-recycled, diesel last;*
  - *Transported a compatible product last (Appendix F may be used to determine if products are compatible); or*
  - *Had its compartments hot water surfactant washed, rinsed, dried, then flushed with either diesel or base oil (new or used for this purpose only) to remove residual water.*
- *For transporting products in all other family groups documentation verifying compartments were diesel flushed and drained is acceptable as is any of the documentation required for products groups 2, 3 & 20.*
- *Compartments must be clean and clear of water, dirt, and debris.*
- *Compartments must be clear of residual product unless compartment is dedicated*
- *Use of dedicated hoses and pumps at the facility is the preferred practice. If truck peripherals (pumps, hoses, etc.) are to be used they must meet the requirements specified for compartments.*

- **Manifolds must be drained unless dedicated, and clear of debris.**

**8.1.5** The carrier is usually responsible for cleaning or flushing compartments; however, the loading facility must verify that the truck meets cleanliness requirements.

**8.1.6** Loading into a retained product that is already on-board is generally not acceptable.

**8.1.7** In the absence of sealed markers, or tank strappings, or both, the quantity of the product to be loaded should be determined by meter or scale.

## **8.2 BEFORE LOADING TRUCKS**

**8.2.1** Inspect each compartment to ensure it is empty and free of contaminants.

**8.2.2** Use an MSA-type gas tester to test each compartment for gasoline or other combustible gases.

**8.2.3** Verify that the product to be loaded matches shipping documents or loading instructions.

**8.2.4** Line up the appropriate storage tank lines, pumps, and so forth. The system must be flushed to clear any common lines of possible contaminants. **Appendix F provides the means for calculating the minimum volume of flush required by CL for moving from one product to another in a common system. CL requires a Standard Operating Procedure for draining, pigging, air-blowing and flushing each non-dedicated (common) system. The SOP must include a method to identify the family group of the last product in the system; this information is required to calculate the amount of flush required to use the system for the next product.**

## **8.3 DURING LOADING**

**8.3.1** Open valves, start the pump, and begin loading. Watch for unusually high or low pressures. High pressure could indicate a closed discharge valve or frozen pipe. Low pressure could indicate a plugged strainer or closed suction.

**8.3.2** Check the system for any leaks. If leaks are detected, shut down the pumping and make the necessary repairs. Any spillage must be contained.

**8.3.3** Verify that the product is being received in the truck, and that the product level in the storage tank is decreasing. If any anomalies are observed, pumping must be discontinued until the situation is investigated and resolved.

## **8.4 AFTER LOADING**

**8.4.1** Close valves and shut down the pump. Disconnect the loading arm or hose. Samples should be taken from the middle of each compartment and submitted for specified testing. **CL requires 6-ounce samples be taken from each truck compartment loaded with products in family groups 3 & 20. CL recommends a 6-ounce sample be taken from each compartment of motor oils (as recommended by API 1525A). All samples must be retained for 6 months.**

**8.4.2** The truck should be released only after sample approval.

**8.4.3** The truck should be gauged or weighed to verify the volume of the loaded product. Confirm that the valves are closed and the outlets are capped.

**8.4.4** Seals should be used on compartments for security. If a seal is used, the seal number should be recorded on the Bill of Lading.

## **8.5 BULK DELIVERY TO CUSTOMER**

### **8.5.1 Bulk Deliveries Using Common Piping Systems**

**8.5.1.1 CL recommends deliveries are scheduled with product integrity in mind. Plan the delivery routes that allow the drivers to deliver products in an efficient and cost-effective sequence. For example, if hydraulic oil and engine oil are transferred through the same system (which is not a recommended practice) the hydraulic delivery stops should be grouped together, and should be scheduled to occur prior to any engine oil deliveries if possible. This minimizes flush oil by allowing the driver to make the transition from motor oil to hydraulic oil only once**

**8.5.1.2 CL requires a detailed truck and/or system specific Standard Operating Procedure (SOP) written for draining, pigging, air-blowing and flushing common (systems used to dispense multiple products) truck delivery systems. The common parts of the truck delivery system (pump, line, meter and hose) must be flushed between products. Appendix F provides the means for calculating the minimum volume of flush required by CL for moving from one product to another in a common system. The SOP must include a method to identify the family group of the last**

*product in the system; this information is required to calculate the amount of flush required to use the system for the next product.*

**8.5.1.3** *CL requires a detailed Standard Operating Procedure (SOP) written for draining, pigging, air-blowing and flushing common (used to dispense multiple products) customer delivery systems. The common parts of the delivery system (pump, line, meter and hose) must be flushed between products. Appendix F provides the means for calculating the minimum volume of flush required by CL for moving from one product to another in a common system. The SOP must include a method to identify the family group of the last product in the system; this information is required to calculate the amount of flush required to use the system for the next product.*

**8.5.2** *CL recommends every attempt should be made to only load the bulk delivery truck with the amount of oil needed for deliveries scheduled for that day. The goal is to have no oil retained in non-dedicated truck compartments when it returns. If there is product left on the truck, it should be returned to storage. When using a non-dedicated system to unload the product, CL requires using SOPs specified in Section 7.*

**8.5.3** *CL recommends flush accumulated in the truck from the delivery be discharged into the Marketer facility flush oil system.*

## 9 Packaging

### 9.1 GENERAL

The guidelines in this section were devised to set some recommendations for distributors who package products from bulk storage into drums and/or pails. These guidelines are not meant to replace more restrictive instructions or requirements from packaging equipment manufacturers or finished lubricant manufacturers. *CL requires Marketers obtain CL approval to package specific products in specific packages. CL authorizes packaging of bulk products in the Lubrication Marketer Agreement.*

**9.1.1** Drums or pails should be filled in an area that is free of dust and moisture. *CL recommends packaging be done indoors and that the fill area should be within a spill containment area; including all connections, manifolds, meters, scales, and pumps.*

**9.1.2** Fill lines should be flushed between products in accordance with flushing guidelines. ~~(See 7.1.8.)~~ *(See Appendix F) CL recommends filling systems are dedicated to a specific product or compatibility group (as defined in Appendix F). CL requires a detailed Standard Operating Procedure (SOP) written for draining, pigging, air-blowing and flushing common (used to dispense multiple products) filling systems. CL requires the common parts of the filling system (pump, line, meter and hose) be flushed between products. Appendix F provides the means for calculating the minimum volume of flush required by CL for moving from one product to another in a common system. The SOP must include a method to identify the family group of the last product in the system; this information is required to calculate the amount of flush required to use the system for the next product.*

**9.1.3** Records should be kept to reflect the product filled, date, time, quantity, and source of the product (storage tank ID or trailer). A retained or inventory sample of the product to be packaged will aid in responding to consumer complaints or possible field contamination. *CL requires the use a "Chain of Custody Log" to record all activities associated with packaging Chevron lubricants. This log tracks data that is critical to resolution of problems if they arise. See Appendix A for an example of recommended log. The log must be retained for 1yr and made available to the BC upon request.*

**9.1.4** Never commingle. Adequate, separate storage should be available for each brand or grade of lubricant that is handled. If supply source (terminals) have to be changed, empty the tank completely, even if the new source will supply the same brand and product.

Note: Under some circumstances, there may be adverse reactions when mixing different oils with different additive systems. There may also be commercial or contractual restrictions that prohibit commingling different products from different companies. Therefore, as a general rule, oils should not be mixed unless full disclosure is made to all parties involved.

**9.1.5** Avoid manifold, reel, or line mixing from one type of product to another. Follow flushing guidelines whenever common lines are used.

**9.1.6** Use current and complete product information labels. The information in the labels must be sufficient to trace the product to lot numbers and retained samples. *CL requires that:*

- *Labels are purchased only from CL-approved vendor; Stenciling, silk screening, etc. are not acceptable.*
- *Labels are printed through CL-approved application. All product information must be current. Incorrect or obsolete product information, especially for health and safety information and product claims, can lead to*

*violation of federal or state labeling requirements. CL recommends that Marketer minimize pre-printing of product labels before day of filling.*

- *Labels are applied to the package carefully per specification in Appendix G, so they are square (straight), unwrinkled and clean.*
- *Labels include a Marketer Identification*
- *Labels include a Fill date and Batch number. When packaging pails from drums, transfer the drum fill date and Batch number to the pail. Otherwise use the actual date of the fill, and the batch number from the last bulk shipment. Labels should not be printed in advance with an inaccurate fill date. If information cannot be printed on the label, use indelible ink marker to neatly place the information on the label in the correct place. The fill date facilitates inventory management, product shelf life management, and enables traceability to investigate product integrity issues.*

**9.1.7** Samples from each fill run should be retained (*CL required*). The following information should be retained with the sample for a reasonable period of time (*CL requires the following information on the sample tag or label*):

- a. Product name and manufacturer code number.
- b. Date packaged.
- c. Batch number and reference number.

**d. Package code**

*CL also requires:*

- *Sample to be taken after the system has been prepared for the new product and before 1<sup>st</sup> package is filled.*
- *Sample to be six-ounce sample and collected from the fill nozzle in a clean, clear container.*
- *Sample to be compared with the most recent tank sample by placing the containers side by side and look through each at the same time.*
- *Confirm the samples to be the same color and clarity,*
- *Confirm there is no sign of water, cloudiness, or particulate in the line sample*
- *If the sample does not meet specifications, repeat the flush, re-sample the line, and compare the line sample with the tank sample again.*
- *All samples are stored to prevent light from darkening the samples, and are retained for a minimum of six months.*

**9.1.8** *CL requires the Chevron Bill of Material (BOM) list in Appendix G be used to select packaging components for specific product-package fills.*

**9.1.9** *CL requires all packaging components comply with Chevron specifications listed in Appendix G. CL requires all shipments of components be inspected to assure they comply with the specifications in Appendix G. CL recommends purchasing components from suppliers listed in Appendix G.*

**9.1.10** *CL requires empty containers be inspected either upon arrival or immediately prior to use. CL requires all empty containers must be stored indoors and in a manner that prevents contamination. Drums must have both bungs installed and tightened. Empty pails should remain in the protective stretch wrap and corrugated shipping protection while in storage; once opened the pails should be stored up-side-down to prevent contamination.*

**9.1.11** *Marketers are responsible for filling containers and making bulk deliveries that meet applicable federal, state, and local weights and measures requirements. CL requires:*

- a. *Using calibrated scale to fill, or using a check weight system to assure package volumes and weights are within ½ of NIST HB133 – Table 2.5 MVA (Weight) & Table 2.6 MVA (Volume) requirements. See Appendix H for a link to NIST HB133 and an example of a check weight system. See Appendix G for the target weight or volume for each specific product-package combination.*
- b. *When filling with a scale, use either the specific gravity or API gravity from the CofA, the bulk load ticket or a hydrometer to calculate the target fill weight. Hydrometers may be purchased from supplier in Appendix I. Do not use the typical gravity values; see Appendix H for details. CL recommends using a scale that can automatically zero out the container tare weight and shut off the product flow at the preset target fill weight.*
- c. *CL requires temperature correction and air eliminators when filling with a meter; see Appendix H for details*

## **9.2 DRUMS**

**9.2.1** Painted surfaces shall be of sufficient thickness and quality to prevent rusting of the drum's external surface after 6 months of outside storage.

**9.2.2** Interior shall be completely dry and free of rust and other foreign material. *CL requires periodic inspections of new drum interiors during the fill using a drum inspection light; at a minimum the first, middle, and last drum must be inspected. All reconditioned drums must be internally inspected. Internal inspection must be conducted with a light that reaches the bottom of the drum. CL recommends not using flashlight but using a drum inspection light purchased from supplier listing in Appendix I. Drums are inspected internally for rust, liquid, or any other foreign residue.*

**9.2.3** All drums shall be structurally sound and free of leaks.

**9.2.4** In addition, reconditioned drums should meet the following conditions:

- a. Chine (drum rim) shall be tight and to original contour.
- b. Head shall be smooth and free of dents and welds, and shall conform to original contour.
  - c. Plugs shall be clean, free of worn or damaged threads, equipped with new gaskets, and capable of providing a leakproof closure.
- d. Flanges shall be free of worn or damaged threads. Threads shall be clean and the face of the flange shall be smooth and capable of providing a leakproof closure. Closure shall permit sealing.

**9.2.5** *CL requires reconditioned drums meet the following conditions:*

- a. *Drums meet reconditioned drum specifications listed in Appendix G.*
- b. *Drums are dry, clean, & rust free.*
- c. *Drums are painted to match color specifications in Appendix G*
- d. *Drums are cleaned internally using standard procedures, which include a hot detergent wash, a clean water rinse and air drying.*
- e. *Drum interior must not be coated.*
- f. *Drums must have previously contained lubricants or light petroleum distillates. Prior product must not have been pigmented or odorized.*
- g. *Drums must be pressure tested to assure they will not leak. Minimum acceptable test pressure is 7.5 PISIG with the container completely submerged in the test tank.*
- h. *There are no scratches in the paint coating that reveals other colors underneath the surface coating.*

**9.2.6** *CL requires that immediately after filling, the bung be screwed into the drum, and tightened with a torque wrench to between 15 and 30 foot-pounds of torque. The cap seal specified in Appendix G is installed using crimping tool.*

### 9.3 TOTES

**9.3.1** General cleanliness and handling procedures for totes should reflect a similar common-sense approach to drums or pails. However, bulk totes should be treated as tank storage for the loading, flushing, and commingling of products. *CL requires totes or portable tanks returned by the customer are inspected internally and externally prior to refilling.*

**9.3.2** *CL requires the external inspection include the following criteria:*

- a. *The exterior must be clean and dry.*
- b. *The surface must be free of punctures, abrasion damage, or any evidence of a leakage.*
- c. *The top fill hatch or cover must be in place with continuous seals and the closure intact.*
- d. *The bottom unloading valve must be operational and have the handle in place.*
- e. *The tank feet, skids, lift eyes, or other tank fittings and accessories must be intact.*
- f. *Blow molded tanks must be inspected for structural weakness (sagging sides, creases, collapse) and discoloration from extended use, and recycled if any degradation is noticed. If the container is acceptable on all accounts except exterior surface cleanliness, the IBC may be closed tightly (top latch, vent port and ball valve must all be tightly sealed, and a pipe plug should be placed in the ball valve exterior discharge port) and the thoroughly cleaned with either a scrub brush or pressure washer. All precautions must be taken to prevent any possibility of cleaning fluid entering the container. If any moisture or soap enters the container, the container must be flushed and cleaned.*

**9.3.3** *CL requires the internal inspection include the following criteria:*

- a. *Openings must be free of any evidence of residue, dirt, rust or other lubricant from previous use.*
- b. *Internal surfaces must be free of any evidence of residue, dirt, rust or other lubricant from previous use. A drum inspection light, as mentioned for drum inspection above, or equivalent high intensity light must be used to*

*inspect for any evidence of rust, dirt, debris or other foreign material that could compromise the quality of the lubricant.*

*c.If any evidence of moisture or detergent material (from the previous wash-down activity) is noted, the container must be thoroughly flushed with un-dyed diesel fluid, and be allowed to drip-dry prior to filling. Alternately, the container may be processed through an approved IBC cleaning facility.*

**9.3.4** CL requires all tanks be labeled for identification by:

- a.Replacing all IBC labels used for previous product fills. The label should be placed in the appropriate location on each side of the container, per the packaging guidelines provided for bulk containers in Appendix G.*
- b.Identifying each IBC with the manufacturer product item number. This bin number may be used for tracking by placing the container number on the customer's master file*

**9.3.5** CL requires the following for filling Grease totes:

- a.All totes, IBC's, and bins filled by the Marketer must be dedicated to a single product and grade of grease. These containers must be numbered to facilitate tracking per the Chain of Custody Log.*
- b.All refillable grease containers must be internally and externally cleaned and dried prior to inspecting and refilling.*
- c.All grease filling hoses must be dedicated to a single product and grade of grease.*
- d.All non-dedicated grease filling systems are flushed with three times the estimated system capacity when changing greases. CL recommends using systems dedicated to the product & grade*
- e.A grease sample is taken from each container filled, and is retained for one year. The sample is labeled per 9.1.7.*

## **9.4 WAREHOUSING**

**9.4.1** CL requires warehouse is weather tight, with dry floors, and orderly layout to prevent product damage and accumulation of dust and dirt on the packages. CL requires case goods and pails to be stored in a warehouse.

**9.4.2** CL recommends storing drummed and tote product in a warehouse. CL requires that drums stored outside are either stored horizontally, or if stored vertically, must be covered with appropriate protection, i.e. metal or plastic drum covers. CL also requires steel, plastic, or fiberglass totes stored outside must be covered with a waterproof cover. This will prevent moisture from entering through the top hatch or bung.

**9.4.3** CL requires product stacking comply with staking limits specified in Appendix G.

**9.4.4** CL requires product sold to customers be oldest product within shelf life that meets Chevron image standards (not damaged or leaking); see the Lubricant Storage, Stability and Estimated Shelf Life guidelines in Appendix J. Marketers that use inventory control marks written on the drum exterior are responsible to remove the marks before delivering the container to the customer. CL recommends managing inventory reorder points and order quantities to always have materials available when required, and to ensure lubricants do not reach shelf life.

## **10 Record Keeping**

Refer to Appendix A for some examples of basic reports required for lubricant receipt, handling, and shipment. These reports represent a minimum level of record keeping. There are more sophisticated computer programs that are available for record keeping and tracking. *The API Appendix A forms have been replaced by CL forms.*

## **11 Coolants**

### **11.1 FACILITY AND EQUIPMENT STANDARDS**

**11.1.1** Coolant Storage and Coolant Blending equipment should follow the same recommendations and meet the same requirements specified in Section 4 of this API practice for Lube Oil Facility and Equipment, with the exceptions specified below.

**11.1.2** CL recommends material selection for the equipment be done by an engineering firm experienced in designing these facilities, as carbon steel may experience significant corrosion in coolant storage, coolant diluting, and water systems. No galvanized tanks or piping is allowed for coolant storage or transfer. CL recommends coolant blenders be fabricated from stainless steel to prevent vapor space corrosion.

**11.1.3** CL requires that coolant be handed with dedicated equipment separate from equipment dedicated to handling lubricant.

**11.1.4** CL recommends coolant dilution systems be designed to allow some of the dilution water to be used to flush the system at the end of a blend. This allows a single system to blend most coolant products.

**11.1.5** CL requires measurement devices used to blend Chevron Branded Coolants be calibrated per a defined schedule or as a result of Non-Conforming Blend Investigations.

**11.1.6** CL recommends coolants have product-specific (dedicated) storage systems (including tanks, lines, pumps, and meters) for ease of operation, elimination of flushing, and prevention of accidental mixing of products.

**11.1.7** CL requires non-dedicated systems (including common lines, common hoses and a common pump/meter) be segregated by product groups. Currently there are four coolant product groups: (a) Conventional Ethylene Glycol-based coolants, (b) Extended Life Ethylene Glycol-based coolants, (c) Conventional Propylene Glycol-based coolants, and (d) Extended Life Propylene Glycol-based coolants. Ethylene Glycol and Propylene Glycol products may not share common systems. Conventional and Extended Life products may not share common systems. CL requires that a Marketer, through its BC, obtain PLCM-MLS approval to use common systems for coolants from different product groups.

**11.1.8** CL requires coolant hoses be clearly identified as coolant hoses by markings, storing in a dedicated area or attached to a dedicated pump. CL requires coolant hoses are drained and capped when not in use.

**11.1.9** CL requires coolant storage tanks have the ability to mix product by air sparging, mechanical mixing, or recirculation pumping.

**11.1.10** CL requires tanks in Conventional coolants service be steam cleaned every 4 years to remove deposits. The tanks must also be steam cleaned and drained if a coolant from a different product group (See 11.1.6) is going to be stored in these tanks. Tanks storing various products from the same product group (See 11.1.6) do not require steam cleaning when changing products. However, CL requires these tanks be drained until none of the initial coolant remains; if there are any visible deposits on the tank walls after draining system, then CL recommends steam cleaning.

**11.1.11** CL requires tanks holding Extended Life Coolants to be steam cleaned every 8 to 10 years. CL requires tanks changing service from Extended Life Coolants to storing Conventional coolants to be drained until none of the initial coolant remains, but does not require steam cleaning. Tanks storing various products from the same product group (See 11.1.6) do not need to be steamed cleaned when changing products. However, CL requires these tanks must be drained until none of the initial coolant remains; if there are any visible deposits on the tank walls after draining steam, then CL recommends steam cleaning

**11.1.12** If totes are used to store bulk coolants, then CL requires Conventional Ethylene Glycol Coolants be stored in stainless steel totes, as the dye is light sensitive.

**11.1.13** CL requires a retain storage location that protects retains from UV light. CL requires six ounce retains in (minimum) glycol resistant plastic (PETE or PET) or glass bottles with caps.

## **11.2 BULK PRODUCT PICK-UP AND UNLOADING PROCEDURES**

**11.2.1** Coolant receipts should follow the same recommendations and meet the same requirements specified in Section 7 of this API practice for pick-up at CL facilities and unloading of bulk lubricants at Marketer's facilities, with the exceptions specified below.

**11.2.1.1** CL requires coolant truck compartments and manifolds be washed and dried prior to entering CL facilities to pick up coolants. CL requires manifolds be clean (no debris), dry, and odor free when internal valves are opened. CL

*requires Marketer to assure truck has capacity for requested volume. CL requires bottom manifold to be designed to allow products to be unloaded without using a common manifold*

*11.2.1.2 CL recommends unloading using dedicated hoses and pumps at the unloading facility. If truck peripherals (pump, hoses, etc.) are to be used they must meet the requirements specified for trailer compartments.*

*11.2.1.3 CL requires flushing a volume equal to 100% of the common (pump, line & meter) volume when pumping different products within the same product group through common piping systems. CL requires flushing a volume equal to 200% of the common (pump, line & meter) volume when pumping products from different product groups through common piping systems.*

*11.2.1.4 In addition to flushing, CL recommends the following sequencing when unloading coolants through common systems:*

- *Propylene Glycol Extended Life Coolant Concentrates*
- *Propylene Glycol Extended Life Coolant Predilutes*
- *Propylene Glycol Conventional Coolant Concentrates*
- *Propylene Glycol Conventional Coolant Predilutes*
- *Ethylene Glycol Extended Life Coolant Concentrates*
- *Ethylene Glycol Extended Life Coolant Predilutes*
- *Ethylene Glycol Conventional Coolant Concentrates*
- *Ethylene Glycol Conventional Coolant Predilutes*

### **11.3 LOADING & DELIVERY PROCEDURES**

*11.3.1 Coolant receipts should follow the same recommendations and meet the same requirements specified in Section 8 of this API practice for loading at Marketer's facilities and delivering bulk lubricants, with the exceptions specified below.*

*11.3.1.1 CL requires coolant truck compartments be either dedicated to a product or washed and dried prior to placing CL coolants in a truck for delivery.*

*11.3.1.2 CL requires flushing a volume equal to 100% of the common (pump & line) volume when pumping different products within the same product group through common piping systems. CL requires flushing a volume equal to 200% of the common (pump, line & meter) volume when pumping products from different product groups through common piping systems.*

*11.3.1.3 In addition to flushing CL recommends the following sequencing when loading coolants through common filling systems:*

- *Propylene Glycol Extended Life Coolant Concentrates*
- *Propylene Glycol Extended Life Coolant Predilutes*
- *Propylene Glycol Conventional Coolant Concentrates*
- *Propylene Glycol Conventional Coolant Predilutes*
- *Ethylene Glycol Extended Life Coolant Concentrates*
- *Ethylene Glycol Extended Life Coolant Predilutes*
- *Ethylene Glycol Conventional Coolant Concentrates*
- *Ethylene Glycol Conventional Coolant Predilutes*

*11.3.1.4 CL requires mixing before loading coolant products with shelf lives shorter than 24 months. Mixing can be continuous, on a schedule, or immediately before bulk loading. Mixing should be for at least 30 minutes or enough to turn the tank volume over 2 times. Coolants with shelf lives longer than 24 months do not require mixing during storage.*

### **11.4 PACKAGING**

*11.4.1 Packaging coolants should follow the same recommendations and meet the same requirements specified in Section 9 of this API practice for packaging bulk lubricants, with the exceptions specified below.*

**11.4.1.1** CL requires flushing a volume equal to 100% of the common (pump, line & meter) volume when pumping different grades of products within the same product group through common piping systems. CL requires flushing a volume equal to 200% of the common (pump, line & meter) volume when pumping products from different product groups through common piping systems.

**11.4.1.2** CL requires mixing before packaging coolant products with shelf lives shorter than 24 months. Mixing can be continuous, on a schedule, or immediately before packaging. Mixing should be for at least 30 minutes or enough to turn the tank volume over 2 times. Coolants with shelf lives longer than 24 months do not require mixing during storage.

**11.4.1.3** In addition to flushing CL recommends the following sequencing when packaging coolants through common filling systems:

- Propylene Glycol Extended Life Coolant Concentrates
- Propylene Glycol Extended Life Coolant Predilutes
- Propylene Glycol Conventional Coolant Concentrates
- Propylene Glycol Conventional Coolant Predilutes
- Ethylene Glycol Extended Life Coolant Concentrates
- Ethylene Glycol Extended Life Coolant Predilutes
- Ethylene Glycol Conventional Coolant Concentrates
- Ethylene Glycol Conventional Coolant Predilutes

## **11.5 Diluting Chevron Branded Coolants (CL Approval REQUIRED)**

**11.5.1** CL approval is required to dilute Chevron Branded Coolant concentrate into Chevron Branded Coolant 50/50 Pre-Dilute. If approved, a Coolant Dilution Addendum to the Lubricant Marketer Agreement is required. Only the specific Chevron Branded Coolant Concentrates listed in the Addendum may be diluted into Chevron Branded Coolant 50/50 Pre-dilutes.

**11.5.2** CL requires coolant components be obtained from suppliers approved by CL and specified in the Coolant Dilution Addendum. Management of Change for component supplier, formulations, and specifications must be part of Marketer's quality processes and systems.

**11.5.3** CL requires Marketer to review coolant component Certificate of Analysis (CofA) to assure conformance with requirements prior to unloading bulk components. CL requires Marketer segregate package components prior to reviewing Certificate of Analysis. CL requires Marketer obtain written CL (PLCM) approval to use any component that does not meet specifications or for which required CofA data is missing. CL requires the shelf life of components be monitored to assure they are within limits when blended. CL requires component order and receipt documentation be kept for a minimum of 5 years.

**11.5.4** CL requires plant-produced deionized water meet all Chevron Master Data System Specifications. CL requires Marketer segregate deionized water prior to validation that deionized water meets specifications. CL requires water testing laboratory meet requirements for Coolant Laboratories listed in 11.5.12 and 11.5.13. CL requires deionized water specification results be kept for a minimum of 5 years.

**11.5.5** CL requires a Blending Worksheet for each blend, which is based on the then current formula. The Blending Worksheet specifies the batch size, the component amounts, the components batch numbers, and the bulk component tank(s). The Blending Worksheet also specifies the blending guidelines -- specifically, component orders, mixing times, and blend temperatures. CL also recommends the blending guidelines incorporate a final blend tank flush -- specifically treated water is held in reserve during blending and used to flush the blend vessel and piping from the blender to the storage tank.

**11.5.6** CL requires the Marketer to verify components are approved for blending, sufficient components are available, package components are within shelf life, and oldest components are being used.

**11.5.7** CL requires the Marketer verify total blend volume does not exceed tank capacity and that tank is ready to blend into; specifically, that the prior product blended is the same as the planned product, or the blend tank has been emptied and flushed with either treated water or glycol.

**11.5.8 CL requires the Marketer follow the blending guidelines and document on the Batch Worksheet the actual component batches and amounts used.**

**11.5.9 CL requires Marketer obtain and test a representative blend sample. CL requires all release specification testing be completed as specified in the Coolant Dilution Addendum. CL requires Coolant Laboratory used for specification testing meet the requirements listed in 11.5.13 and 11.5.14.**

**11.5.10 CL requires the Marketer to isolate the product in the receiving vessel at the completion of the blend, to prevent packaging or bulk deliveries of the product until the blend has been tested to assure it meets specifications.**

**11.5.11 CL requires the Marketer to contact CL (PLCM MLS) for assistance to correct “off-test” blends. Batches which cannot be adjusted to meet CL specifications cannot be sold as Chevron Branded Coolants. CL requires the Marketer investigate off-test blends to determine the root cause and take preventive action to prevent future off-test blends. Marketer must have an established method for documenting all investigations and associated actions/solutions, including demonstrated methodology in-place that tracks actions to completion. CL requires a 1-pint (500ml) sample of the blend be retained for 6 months. CL requires the Marketer retain the blend worksheet and batch test results for 5 years.**

**11.5.12 CL requires the Marketer obtain documentation proving subcontracted labs are competent -- specifically that the scope of accreditations includes requested testing. Subcontracted labs must meet the requirements specified in 11.5.13 and 11.5.14.**

**11.5.13 CL requires the Coolant Laboratory manage lab equipment by:**

- Managing lab environment (clean, temperature, orderly) to assure proper equipment operation
- Use lab equipment that complies with test method requirements
- Maintain lab equipment preventive maintenance program; initiating maintenance base on a documented PM schedule or Statistical Process Quality Assurance Process (SPQAP)
- Calibrate lab equipment per a calibration schedule, including lab scales and thermometers
- Calibrate lab equipment using procedure consistent with ASTM test method
- Calibrate lab equipment using certified and traceable standards that are within expiration date, as required by ASTM test method

**11.5.14 CL requires the Coolant Laboratory manage lab testing processes by:**

- Documenting all test procedures
- Revising test procedures yearly to assure consistency with current ASTM Test Method
- Train personnel on each revision and document training
  - Must be able to provide documentation verifying specific training conducted and individuals involved
- Implement SPQAP for each test to assure testing process are in control -- specifically control charts exist, out of control parameters are defined (including but not limited to exceeding test method precision requirements), action is taken when parameters are out of control, and actions are documented.
- Participating in Chevron Lab Proficiency Testing Program (LPTP) -- specifically completing requested test for which the lab has procedures, investigating outliers, and implementing corrective action.
- Labeling all samples to assure correct samples are analyzed for correct test, and retains are retrievable.

## **12 Viscosity Blending Hydraulic AW & Rando 46 Oils**

**12.1 CL approval is required to viscosity blend Hydraulic AW 46 and Rando HD 46 oils. If approved, a Viscosity Blending Addendum to the Lubricant Marketer Agreement is required. Only the specific products listed in the Addendum may be viscosity blended to an ISO 46 grade product.**

**12.2 CL requires Marketer components, formulations, blending guidelines, and specifications meet Chevron Master Data System requirements as specified in the Viscosity Blending Addendum. Management of Change for Chevron requirements must be part of Marketer's quality processes and systems.**

**12.3 CL requires a Blending Worksheet for each blend, which is based on the then current formula. The worksheet specifies the batch size, the component amounts, the components batch numbers, and the bulk component tank(s).**

**12.4** CL requires the Marketer verify total blend volume does not exceed tank capacity and that the tank is ready to blend into. All requirements in this Manual for lubricant handling apply to viscosity blending of Hydraulic Oils.

**12.5** CL requires the Marketer follow the blending guidelines and document on the Batch Worksheet the actual component batches and amounts used.

**12.6** CL requires Marketer obtain and test a representative blend sample. CL requires all release specification testing be completed as listed in the Viscosity Blending Addendum. CL requires Hydraulic Oil Laboratory used for specification testing meet the requirements listed in section 12.10 and 12.11.

**12.7** CL requires Marketer to isolate the product in the receiving vessel at the completion of the blend, to prevent packaging or bulk deliveries of the product until the blend has been testing to assure it meets specification.

**12.8** CL requires the Marketer to contact CL (PLCM MLS) for assistance to correct “off-test” blends. Batches which cannot be adjusted to meet CL specifications cannot be sold as Chevron Branded Hydraulic Oil AW or Rando HD. CL requires the Marketer investigate off-test blends to determine the root cause and take preventive action to prevent future off-test blends. Marketer must have an established method for documenting all investigation and associated actions/solutions, including demonstrated methodology in-place to that tracks actions to completion. CL requires 1-pint (500 ml) sample of the blend be retained for 6 months. CL requires the Marketer retain the blend worksheet and batch test results for 5 years.

**12.9** CL requires the Marketer obtain documentation proving subcontracted labs are competent -- specifically that the scope of accreditations includes requested testing. Subcontracted labs must meet the requirements specified in 12.10 and 12.11.

**12.10** CL requires the Laboratory manage lab equipment by:

- Managing lab environment (clean, temperature, orderly) to assure proper equipment operation
- Use lab equipment that complies with test method requirements
- Maintain lab equipment preventive maintenance program; initiating maintenance base on a documented PM schedule or Statistical Process Quality Assurance Process (SPQAP)
- Calibrate lab equipment per a calibration schedule, including lab scales and thermometers
- Calibrate lab equipment using procedure consistent with ASTM test method
- Calibrate lab equipment using certified and traceable standards that are within expiration date, as required by ASTM test method

**12.11** CL requires the Laboratory manage lab testing processes by:

- Documenting all test procedures
- Revising test procedures yearly to assure consistency with current ASTM Test Method
- Train personnel on each revision and document training
  - Must be able to provide documentation verifying specific training conducted and individuals involved
- Implement SPQAP for each test to assure testing process are in control -- specifically control charts exist, out of control parameters are defined (including but not limited to exceeding test method precision requirements), action is taken when parameters are out of control, and actions are documented.
- Participating in Chevron Lab Proficiency Testing Program (LPTP) -- specifically completing requested test for which the lab has procedures, investigating outliers, and implementing corrective action.
- Labeling all samples to assure correct samples are analyzed for correct test, and retains are retrievable.

## **13 Chevron Product Integrity Facility Assessments (PIFA)**

**13.1** Product Integrity Facility Assessment Timing, Objective, & Protocol

**13.1.1** CL requires all Marketers' facilities to be assessed every three years to assure the Marketer operations are in compliance with requirements set forth in this document. These requirements are set forth to prevent product integrity incidents. The assessment is done using the protocol in Appendix M.

**13.2** Product Integrity Facility Assessment Process

**13.2.1** *The CL auditor will contact the Marketer a month prior to schedule the audit. The auditor will also request the pre-audit questionnaire (see Appendix M Protocol) be filled out and returned to the auditor via email two weeks prior to the audit.*

**13.2.2** *The Product Integrity Facility Assessment includes the following:*

- *Pre-Assessment Review Meeting to review the process with the Marketer and answer any questions*
- *Procedure review to assure process and training requirements are met*
- *Operational review to assure processes have been fully deployed within the facility*
- *Sample collection (package and/or bulk) for off-site testing to assess the effectiveness of processes. If the samples do not meet specifications, the BC will contact the Marketer.*
- *De-brief meeting with the auditor, Marketer, and possible the BC to review findings and potential best practices for correcting deficiencies*

**13.2.3** *CL requires the Marketer to:*

- *Make processes, procedures, standards, and records available during the audit*
- *Operate the facility in the “business as normal mode”*
- *Provide access to personal for interviews*

**13.2.4** *The BC may attend the assessment and/or the de-briefing meeting.*

### **13.3** *Correcting Product Integrity Facility Assessment Findings*

**13.3.1** *In the event that a serious or critical deficiency is identified, the BC has the authority and responsibility to advise the Marketer that they can no longer package and/or deliver specific products. The BC also has the authority to reinstate the packaging or bulk handling activity once the critical deficiency is resolved.*

**13.3.2** *Within a week of completing the assessment, the Marketer and BC will receive an email with the final audit report. CL requires the Marketer to input the corrective action plan for each deficiency, including a target completion date. The Marketer must justify completion dates that exceed 60 days. CL requires the Marketer to submit the updated report to the BC within a week of receiving the report. The BC will review the report, may request changes to the corrective action plans & timing, and then approve the corrective action plans and completion dates. Within a week of receiving the report, the BC will send the report to the Product Stewardship Analyst (PSA).*

**13.3.3** *Each month the PSA will issue an excel spreadsheet containing all the deficiencies and corrective action plans. The BC will contact the Marketer on a monthly basis to update corrective action status on the monthly report.*

## **Appendix A - Forms**

***Appendix A Forms have been replaced with Chevron Lubricant Forms located in Excel File “Chain of Custody Logs”***

## **Appendix B - Sampling**

### **B.1 Personnel Safety Precautions**

**B.1.1** While sampling, employees should be wearing the appropriate personal protective equipment, which may include the following items:

- a. A hardhat.
- b. Protective eyewear.
- c. A respirator.
- d. Solvent-impervious gloves.
- e. Other company specified equipment

Additional equipment, such as a face shield, coveralls, or breathing air supply may be required, depending on the circumstances and materials to be sampled. ***CL requires that locations understand and conform to specific storage and handling requirements as defined in the appropriate SDSs.***

### **B.2 Sampling Procedures—Bulk Tanks**

**B.2.1** Open the valve carefully and drain enough oil into the 5-gallon container to purge the valve and line.

**B.2.2** Keep the valve open slightly and fill the sample container. Keep the bottle capped unless a sample is being taken.

**B.2.3** Flush the sample container with oil to remove any contaminants.

**B.2.4** Refill the sample container with fresh oil. Do not disrupt the flow of the product when taking the sample.

**B.2.5** Turn the valve off.

**B.2.6** Fill the handheld viscosity measuring device with oil from the sample bottle, run the test later, or utilize the appropriate QC procedures.

- a. The device must be clean so it will not contaminate the sample.
- b. Leave an air space for expansion in the sample container to prevent rupture. Taking the sample for the viscosity measurement should leave ample expansion room.

**B.2.7** Put the lid on the sample container.

**B.2.8** Label the sample as follows:

- a. Product name and code number, if any.
- b. Date received.
- c. Reference number and date.
- d. Batch number.
- e. Name of the person taking the sample.

### **B.3 Sampling Tank Trucks and Railcars Using a COLIWASA or Equivalent Sampling Device**

**B.3.1** Clear the dome hatch of snow or any other materials that could contaminate the oil when the manway is opened. Protect the oil from rainwater.

**B.3.2** Open the dome hatch's hold-down bolts slowly, beginning at the hinged side; this allows for any possible pressure buildup to subside.

**B.3.3** Open the dome hatch.

**B.3.4** Adjust the sampling device to the open position. The ball valve must be open so that the liquid can enter the tube. A sampling device is a long tube with a check valve that allows representative samples of the total load to be taken.

**B.3.5** Insert the sampling device carefully into the liquid material in the tank truck or railcar. This must be done slowly and carefully to obtain a representative sample.

**B.3.6** When the sampler reaches the bottom, push down to force the valve to a closed position.

**B.3.7** Remove the sampler. During removal, wipe the outside clean to prevent dripping. Transfer the entire contents into a clean sample pitcher. Release the liquid in the sampling device slowly to avoid spillage. Transfer the entire contents of the pitcher into a clean sample bottle.

**B.3.8** Clean the sampling device before using it again.

**B.3.9** Prepare a label, affix it to the bottle, and submit it to the lab along with the appropriate paperwork.

## **B.4 Sampling Drums**

**B.4.1** Drums received directly from a manufacturer for resale will not usually require special testing since the manufacturer certifies that the product conforms to specification. If samples are required from drums, the following procedure should be used.

**B.4.1.1** Inspect the drum's appearance. Check for rust, leaks, or bulges. If the large bung is rusted and cannot be easily opened, spray it with spray penetrant, wait two minutes, and try again. If the drum still cannot be opened, it should be sent back to the generator. If the drum is bulged, it is either pressurized, or has been in the past. Extreme caution should be taken with a drum of this type, and additional personal protective equipment should be worn.

**B.4.1.2** Loosen the large bung slowly. If there is a hissing sound, the drum is under pressure. Stop and place a blanket over the top. Remove the bung slowly under this protective blanket. This will provide protection from spray if the bung comes off quickly. Remove the large bung.

**B.4.1.3** Place the sampling pan on the drum. Place the bottle in its holder.

**B.4.1.4** Adjust the sampling device to the open position.

**B.4.1.5** Insert the sampling device carefully into the drum through the bung hole. This must be done slowly and carefully to obtain a representative sample.

**B.4.1.6** When the sampling device reaches the bottom, adjust it to the closed position.

**B.4.1.7** Remove the sampler. Transfer the material contents to the sample bottle and screw on the bottle cap. Release the liquid in the sampling device slowly to avoid spillage.

**B.4.1.8** Clean the sampling device before using it again.

**B.4.1.9** Prepare and affix a label to the bottle and submit it to the lab with the appropriate paperwork. Return samples to the central location.

## **B.5 Sampling—General Conclusions**

**B.5.1** Upon receipt or shipment of any bulk oil, obtain a sample from each compartment prior to unloading.

**B.5.2** Clearly label each sample with the product name, viscosity, source, date, compartment number, and storage tank identification. Tightly seal and retain this sample as required.

**B.5.3** Record the following information in a permanent ledger or computer file:

- a. Register number.
- b. Date.
- c. Beginning and ending inventory in the storage tank.
- d. The delivery carrier.
- e. Product source.

**B.5.4** When packaging any product, record the package date on each label that is used. A sample should be taken from a drum or a pail for each batch that has been packaged. Identify if sample was taken from a drum or a pail and retain sample as required.

## **Appendix C - Testing Guidelines**

### **C.1 Observable Characteristics in Sample**

The sample should be visually inspected for the following:

- a. Free water.
- b. Sediment.
- c. Hazy appearance.
- d. Particles.
- e. Color (must match the reference sample).
- f. Any other unusual characteristics.

If any of the above are observed, purge 10 gallons and retest. If appearance is still abnormal, call supplier personnel.

## C.2 Viscosity and Water

**C.2.1** Run viscosity on all samples using a handheld viscosity measuring device.

**C.2.2** Run crackle test for water. Other types of testing, such as dielectric strength, may be used if equipment is available. *To run the Water “Crackle” Test place a few drops of oil on a hot metal surface (at least 120° C or 250° F). Observe the oil closely. If the oil creates bubbles but does not make apparent sounds the oil is likely to contain between 0.05% (500 PPM) and 0.1% (1,000 PPM) moisture. If the oil creates audible popping sounds the oil is likely to contain water in excess of 0.1% or 0.2% (2,000 PPM).*

## C.3 Certificate of Analysis—Finished Lubricants

**C.3.1** Distributors should request a Certificate of Analysis on finished lubricants showing all or part of the following test results. Appropriate ASTM tests for each of the following tests might be available and are recommended for use:

- a. Odor.
- b. Appearance.
- c. Color.
- d. Crackle.
- e. Flash.
- f. Pour point.
- g. Viscosity at 100°C.
- h. Viscosity at 40°C.
- i. Additive metals (as appropriate)—Ca, Si, P, Zn, Mg, and so forth.
- j. Viscosity index.
- k. Demulsibility.
- l. Other as compared to a reference specification.

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## APPENDIX D—RECOMMENDATIONS FOR HANDLING AND STORAGE OF LUBRICATING OIL ADDITIVES

*Appendix D has been removed as it is not required for the Chevron Branded Lubricants Packaging and Bulk Sale Manual.*

## APPENDIX E – STANDARD PRACTICE FOR MANUAL SAMPLING OF PETROLEUM AND PETROLEUM PRODUCTS

For information on manual sampling of petroleum and petroleum products, consult the most recent edition of Chapter 8.1 (Manual Sampling of Petroleum and Petroleum Products) and Chapter 18.1 (Measurement Procedures for Crude Oil Gathered from Small Tanks by Truck) of the *API Manual of Petroleum Measurement Standards*.

## Appendix F – CL Compatibility Guidelines & Flushing Requirements, see files:

- Compatibility Guidelines
- Product Compatibility Groups

## Appendix G – CL Packaging Specifications, see files:

- Package Code & BOM Table
- Package Specifications
- Label Position Specifications
- Ordering Cap\_Seals

## Appendix H – CL Package Filling Measurement & Variability, see files:

- Setting Package Fill Targets
- Obtain API Gravity by Hydrometer Method

## Appendix I – CL Equipment, Services & Tool Purchases, see file:

- Testing Equipment & Services

## Appendix J – CL Lubricant Shelf Life, see files:

- General Shelf Life Bulletin
- Product Specific Shelf Life's

## Appendix K – Example Standard Operating Procedure (SOP), see files:

- Standard Marketer Example SOPs
- Coolant Dilution Example SOPs

- **Viscosity Blending of Hydraulic Example SOPs**

**Appendix L – Blend Batch Worksheet, see file:**

- **Blend Batch Worksheet**

**Appendix M – PIFA Audit Protocol, see file:**

- **PIFA Audit Protocol**

**Appendix N – Water Draw Log, see file:**

- **Water Draw Log**