

**GUIDE FOR QUALIFICATION
OF
HYDRAULIC FLUIDS, GREASES,
SOLID FILM LUBRICANTS, & PRESERVATIVES**

JUNE 2002

**DEPARTMENT OF THE ARMY
U.S. ARMY TANK-AUTOMOTIVE AND ARMAMENTS COMMAND
Petroleum and Water Business Area
Fuels and Lubricants Technology Team
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**GUIDE FOR QUALIFICATION
OF
MILITARY AND FEDERAL SPECIFICATIONS
HYDRAULIC FLUIDS, GREASES,
SOLID FILM LUBRICANTS AND PRESERVATIVE PRODUCTS**

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I. PURPOSE

The purpose of this document is to provide manufacturers and suppliers a general description of the type of approvals available and the procedures used in the qualification of hydraulic fluids, greases, solid film lubricants, and preservatives described under the appropriate Military or Federal specification which are managed by the Fuels and Lubrication Technology Team (AMSTA-TR-D(210)).

II. BACKGROUND

Hydraulic fluids, greases, solid film lubricants, and preservatives used by the Department of Defense are procured against the following product specifications. Products meeting these specifications are approved by qualification, with inclusion in a Qualified Products List (QPL), or by First Article Inspection (FA).

A. Hydraulic Fluids

MIL-PRF-6083 (QPL) Hydraulic Fluid, Petroleum Base, for Preservation and Operation.

MIL-PRF-46170 (QPL) Hydraulic Fluid, Rust Inhibited, Fire Resistant, Synthetic Hydrocarbon Base

MIL-H-46001 (FA) Hydraulic Fluid, Petroleum Base, for Machine Tools

MIL-H-53119 (FA) Hydraulic Fluid, Nonflammable, Chlorotrifluoroethylene Base

B. Brake Fluid

MIL-PRF-46176 (QPL) Brake Fluid, Silicone, Automotive, All Weather, Operational and Preservative

C. Grease

MIL-PRF-10924 (QPL) Grease, Automotive and Artillery

D. Solid Film Lubricants

MIL-PRF-46010 (QPL) Lubricant, Solid Film, Heat Cured, Corrosion Inhibiting

MIL-PRF-46147 (QPL) Lubricant, Solid Film, Air Cured, Corrosion Inhibiting

E. Preservatives

MIL-PRF-3150 (QPL) Lubricating Oil, Preservative, Medium

MIL-PRF-32033 (QPL) Lubricating Oil, General Purpose, Preservative (Water Displacing, Low Temperature)

MIL-P-46002 (FA) Preservative Oil, Contact and Volatile, Corrosion Inhibiting

F. Lubricating Oil

All products listed are covered by Military or Federal specifications and are procured by the Defense Supply Center Richmond(DSCR). Contract awards for QPL products are made only for products which are qualified for inclusion on the applicable QPL at the time set for opening of bids. Contractors must arrange to have the products they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or orders for products covered by Military or Federal specifications.

The Qualifying Activity for the aforementioned specification products is the Petroleum and Water Business Area. The abbreviation used for Petroleum and Water Business Area in procurement documents is AT.

III. TYPES OF QUALIFICATION

The following types of qualification approvals are available for qualifying hydraulic fluids, grease, and preservatives:

A. Original Qualification Approval: Qualification issued to a product manufacturer for a unique (original) proprietary formulation .

1. Initial (New) Qualification: First-time qualification of a unique proprietary formulation.

2. Requalification: Required whenever a significant formulation change occurs for a currently qualified product; or 5 years after initial qualification, with no formulation changes involved.

3. Ten-Year Qualification: 10 years after original qualification the .

B. Reblend Approval: Qualification issued to a marketer for a product which is blended in the marketer's facilities and is identical in composition to a product for which an original qualification has been issued.

C. Rebrand Approval: Qualification issued to a marketer for a product which has been previously qualified and is manufactured by the holder of the original qualification.

A formulation change is defined as a change in the weight percentages of any basestocks or additives, an additive or basestock substitution, or a change in additive or basestock supplier. Since the significance of these changes can vary, each case will be individually evaluated to determine if a new qualification is required; if laboratory testing is required; and the resultant test and administrative fee. Most formulation changes will require a new qualification and a new QPL number will be issued.

A product qualified in accordance with any of these types of approvals is issued an individual qualification number and listed on the appropriate QPL. A new QPL number is issued for all initial, new, reblend, and rebrand qualifications.

IV. QUALIFICATION REQUIREMENTS AND PROCEDURES

A. Original Approval, General Procedure

1. The manufacturer formulates the candidate product to meet specification requirements.
2. The manufacturer conducts the physical, chemical and performance tests set forth in the specification.
3. The manufacturer notifies the Qualifying Activity, Petroleum and Water Business Area, in writing, of the intent to qualify the candidate product and requests specific instructions regarding the fee, samples and documentation required. (See following sections for specific items)
4. All test data, including government test data, are reviewed by the Qualifying Activity. After determining that all specification requirements have been met, a QPL number is issued for the candidate product and the company is notified of the qualification.
5. Manufacturing tolerances are established by the Qualifying Activity (see Section VII).
6. Certain provisions of some military specifications are subject to standardization requirements imposed by NATO standardization agreements referred to as STANAGs. Because of this interchangeability requirement and the need to conform to the NATO guide specification (i.e., STANAG 2845), certain product formulations can not be considered for qualification. The specifications subject to NATO standardization agreements are MIL-PRF-10924, MIL-PRF-6083, MIL-PRF-46170, MIL-PRF-3150, MIL-PRF-32033, and MIL-PRF-46176.

B. Original Qualification, Specific Instructions

1. Initial Qualification Requirements
 - a. Evidence of manufacturing facilities approval for some products (see Section V).
 - b. Evidence of plant filling approval for MIL-PRF-46170, MIL-PRF-6083, and MIL-H-53119 products (see Section VI).
 - c. Notarized affidavit (see appendices for specific products).
 - d. Formulation disclosure and noncarcinogenicity statement, notarized (see appendices for specific products).
 - e. Laboratory data showing actual quantitative results for all of the required tests in the specification. Storage stability testing is required for many products and testing must be completed by the manufacturer before final qualification can be awarded. However, the qualification process may be initiated before the completion of storage stability tests. Storage stability tests and other tests may occasionally be waived at the discretion of the Government.
 - f. Complete lab testing by Petroleum and Water Business Area. Some testing may be waived at the discretion of the Government.

g. Samples of finished product and components as required by the Petroleum and Water Business Area.

h. Current Material Safety Data Sheet (MSDS) in accordance with FED-STD-313B for each ingredient of the product and the finished product.

i. Copy and approval of hazardous warning label which will be printed on all containers. The label must conform to the most recent federal guidance for labeling of hazardous substances. The label must also contain any specific labeling required by the specification.

j. Certified check for the designated amount made payable to the Treasurer of the United States for testing and administrative costs.

2. Requalification Requirements

a. Notarized affidavit (see appendices for specific products).

b. Formulation disclosure and noncarcinogenicity statement, notarized (see appendices for specific products).

c. Laboratory data showing actual quantitative results for all of the required tests in the specification. Storage stability tests and other tests may occasionally be waived at the discretion of the government.

d. Lab testing by the Petroleum and Water Business Area. The amount of testing will be determined by the extensiveness of any formulations changes, similarity of a new formulation to other qualified products, and the length of time since testing has been performed by the Petroleum and Water Business Area.

e. Samples of finished product and components as required by the Fuels and Lubricants Technology Team.

f. Current Material Safety Data Sheet (MSDS) in accordance with FED-STD-313B for each ingredient of the product and the finished product.

g. Copy and approval of hazardous warning label which will be printed on all containers. The label must conform to the most recent federal guidance for labeling of hazardous substances. The label must also contain any specific labeling required by the specification.

h. Certified check for the designated amount made payable to the Treasurer of the United States for testing and administrative costs.

4. Ten Year Requalification

A requalification is required every 10 years (see section 2, Requalification Requirements).

C. Reblend Approval

1. Submit to the Qualifying Activity the following affidavits: (Copies of the Reblend Affidavits are provided in Appendix 2.)

a. Affidavit for Reblending (Blending Company) - The Marketer agrees to blend the product in accordance with the original qualified product.

b. Affidavit for Reblending (Qualified Lubricant Manufacturer) - The Qualified Lubricant Manufacturer agrees to allow the Marketer to blend the product in accordance with the Qualified Lubricant Manufacturer's formulation used to obtain the original qualification.

c. Affidavit for Reblending (Additive Manufacturer) - The Additive Manufacturer agrees to furnish the Marketer additives identical to those used in the original qualified product.

d. Affidavit for Reblending (Base Stock Manufacturer) - The Base Stock Manufacturer agrees to furnish the Marketer base stock identical to that used in the original qualified product.

2. After determining that the affidavits have been properly executed, a qualification number is issued for the product and the company is notified of the qualification. The reblended product's qualification will expire when the original expires. A new reblend approval will be required when the Qualified Lubricant Manufacturer requalifies. With the qualification notice the company may be provided manufacturing tolerances for use in acceptance of a product purchased by the Federal Government.

3. Note that only original approvals held in the name of the Qualified Lubricant Manufacturer may be reblended.

D. Rebrand Approval

1. Submit to the Qualifying Activity the following affidavits: (Copies of the rebrand affidavits are provided in Appendix 3.)

a. Affidavit for Rebranding (Marketer) - The Marketer agrees to supply a previously qualified product which is manufactured by the holder of the original qualification.

b. Affidavit for Rebranding (Supplier) - The Supplier agrees to furnish the Marketer a product qualified to and manufactured by the Supplier.

2. After determining that the affidavits have been properly executed, the Qualifying Activity will notify the manufacturer of the qualification. The rebranded product's qualification will expire when the qualification of the original expires. A new rebrand approval will be required when the Qualified Lubricant Manufacturer requalifies the original formulation.

3. Note that all original and reblended products can be rebranded. Also, the holder of the original approval may obtain a rebrand of the product in his own name.

V. MANUFACTURING FACILITY APPROVAL

Manufacturing Facility Approval is required for materials meeting MIL-PRF-6083, MIL-PRF-46170, MIL-H-53119, MIL-PRF-46176, MIL-PRF-3150, and MIL-PRF-32033 only.

Prior to obtaining an original or reblend approval, a Company must demonstrate its manufacturing capability. This is accomplished in the following manner:

1. The blender makes a plant blend (minimum of 1000 gallons) of a qualified product using his personnel and the plant facilities for which approval is desired.
2. Using the facilities of an approved laboratory(s) conduct the tests requested by the Qualifying Activity.
3. Submit the test data, a two gallon sample, and a letter to the Qualifying Activity requesting manufacturing facility approval. The letter requesting approval should be executed by the manufacturing facility blending official and should state the following:
 - a. Size of the plant blend.
 - b. Designation of the blend (product name, batch number, etc.).
 - c. Location of the plant (full address).

sample letter is provided in Appendix 4.

4. If the product has been blended properly, the Qualifying Activity will place the plant making the blend on list of approved blending facilities. Manufacturing facility approval must be obtained for each plant within a Company to be used for the blending (manufacture) of products submitted to the US Government. Although approval is granted for a single product, it is valid for the blending of all qualified fluids under that specification. Manufacturing facility approval may be obtained in conjunction with the qualification of a candidate fluid if the complete set of qualification tests are conducted using the required plant blend of the candidate product.

VI. PLANT FILLING APPROVAL

Plant Filling Approval is required for materials meeting MIL-PRF-6083, MIL-PRF-46170, and MIL-H-53119 only.

Prior to obtaining an original, reblend or rebrand approval, a company must demonstrate that the filling production line to be used to package a product can supply a clean, low particle count fluid as required by the specification.

1. The manufacturer makes a filling production run of at least 1000 quart or gallon containers with a fluid meeting the requirements of MIL-PRF-6083, MIL-PRF-46170, MIL-H-53119, MIL-H-5606, or MIL-H-83282, using his personnel and manufacturing facilities for which approval is desired.
2. Submit for testing purposes the number of filled containers required by the applicable military specification.

3. Submit a letter requesting Plant Filling Approval to the Qualifying Activity. The letter requesting approval should be executed by the plant filling official and should state the following:

a. Size of production run.

b. Location of the plant (full address).

c. The specification product used.

4. If the product has been packaged properly, the Qualifying Activity will place the plant making the product on the list of approved filling facilities. Plant Filling Approval must be obtained for each plant facility within a company to be used for the filling of products submitted to the US Government. Although approval is granted for a single product, it is valid for the packaging of all qualified fluids. Plant Filling Approval may be obtained in conjunction with the qualification of a candidate fluid provided the complete set of qualification tests are conducted using the candidate product.

VII. TOLERANCE LIMITS

Tolerance limits have been established for use by the contracting agents. The tolerances are assigned to selected properties of the originally qualified products based on the precision of the methods, anticipated variations within manufacturer blending operations, and engineering judgment as to acceptable limits.

The sole purpose in establishing tolerance limits is to ensure that manufacturers do not substitute or deviate from the original agreed-to formulations. The properties of the products supplied under the contract must not vary from the original qualification values by more than the tolerances allow. In addition, no assigned tolerance value shall be either below the minimum or above the maximum requirements stated in the specification.

VIII. TIME LIMIT FOR QUALIFICATION

Qualifications are normally valid for 5 years, as stated in each specification. Five years from the original (initial or re-) qualification, a requalification is required which will renew the qualification for another 5 years. Ten years from the original qualification a complete requalification is required. (Every qualified product must experience a thorough qualification review at least every ten years.)

Any formulation changes (changes in the weight percentages of any basestocks or additives, additive or basestock substitutions, or changes in additive or basestock suppliers) that occur must be reported to the Qualifying Activity. Significant formulation changes require requalification of the product with issuance of a new qualification and a new QPL number. (See III above.)

Reblend and rebrand qualifications are valid only for the length of time that the original product is qualified. Whenever the original product is requalified or renewed, the reblend and rebranded products must be requalified.

IX. FIRST ARTICLE INSPECTION

First Article Inspection approval is issued by the contracting officer to a product manufacturer for a new or previously approved formulation which has not changed within the past four years. This type of approval pertains to specifications MIL-H-46001, MIL-H-53119, and MIL-P-46002. Products approved under the First Article Inspection are not placed on a Qualified Products List.

The procedure for First Article Approval follows:

1. First Article Inspection shall consist of tests for all the specification requirements. Testing shall be performed in the contractor's plant or in a government approved laboratory as specified by the procuring activity or its designated agent.
2. Whether testing is performed by the Contractor or by an independent laboratory, written certification, signed by a responsible officer of the firm involved and certified by the regional Quality Assurance Representative (QAR) shall be furnished stating that the first article samples have met all the requirements of the specification.
3. The certification statement shall contain a laboratory report listing all of the tests performed, the results obtained, the product designation, and the location and identity of the laboratory which ran the first article tests.
4. The complete formulation, including the source and composition of each ingredient, shall be submitted to the Qualifying Activity, accompanied by the Material Safety Data Sheet in accordance with FED-STD-313B for each ingredient in the product formulation.
5. One gallon of the first article inspection sample shall be provided to the Qualifying Activity.
6. Waiver of first article inspection may be approved at the option of the procuring activity when the following conditions have been met:
 - a. A first article sample of the product has passed all of the first article inspection requirements within the time specified in the specification.
 - b. The Contractor certifies in writing that the composition of the material is the same as the product which previously passed the first article inspection requirements.

X. SOURCES OF INFORMATION

There are many offices within the Department of Defense that provide assistance and information to individuals and organizations seeking the opportunities to participate in the supply of products under specifications covered by this Guide.

A. Specification and Qualification Requirements

U.S. ARMY TANK-AUTOMOTIVE AND ARMAMENTS COMMAND
Petroleum and Water Business Area
ATTN: AMSTA-TR-D (210)
6501 E. 11 Mile Road
Warren, MI 48397-5000
Telephone: (810) 574-4207

B. Copies of Specifications, Qualified Products Lists, Federal Test Methods

Standardization Document Order Desk
Building 4, Section D
700 Robbins Avenue
Philadelphia, PA 19111-5094

Telephone Inquiries: (215) 697-2667
Telephone Order Entry System (TOES): (215) 697-1187

C. Government Procurement of Products

Commander
Defense General Supply Center
ATTN: DGSC-JBTB
Richmond, VA 23219
Telephone: (804) 279-4257

D. Department of Defense Index of Specifications and Standards (DODISS)

DODISS is a reference publication made available to private industry in microfiche or printed book format. The DODISS is a three-part listing of the following unclassified documents:

Military specifications and standards
Federal specifications and standards
Military handbooks
Qualified products lists
Industry documents
U.S. Air Force-Navy aeronautical standards, aeronautical design standards, and aeronautical bulletins
U.S. Air Force specifications and specification bulletins
Cancellation lists
Other departmental documents

Subscription to the printed edition of the DODISS is available to private industry on a yearly subscription basis from:

Superintendent of Documents
Government Printing Office
Washington, D.C. 20402
Telephone: (202) 783-3238

Subscription to the microfiche edition of the DODISS is available from:

Director
Navy Publishing and Printing Service Office
700 Robbins Avenue
Philadelphia, PA 19111
Telephone (comments, special assistance): (215) 697-2179

E. Non-Government Test Methods and Standards

American Society for Testing and Materials (ASTM)
Publications Department
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959
Telephone: (610) 832-9585
FACSIMILE: (610) 832-9555

Society of Automotive Engineers (SAE)
400 Commonwealth Drive
Warrendale, PA 15096-0001

APPENDIX 1

Qualification Check Lists, Affidavits and Test Report Forms

Hydraulic Fluids

MIL-PRF-46170

MIL-PRF-6083

Brake Fluid

MIL-PRF-46176

Grease

MIL-PRF-10924

Solid Film Lubricants

MIL-PRF-46010

MIL-PRF-46147

Preservative Oils

MIL-PRF-32033

MIL-PRF-3150

Lubricating Oil

MIL-L-53131

MIL-PRF-46170 QUALIFICATION CHECKLIST

For your convenience, the requirements delineated in Part IV for Original Approval have been outlined in the following checklist. A letter requesting qualification shall be sent by the supplier to this office initially. A letter response will be returned stating the qualification fee and any applicable exceptions to the following listed items. Then the following list shall be completed, signed by the manufacturer to insure that all requirements are completed, and submitted with all requested items to this office. ALL ITEMS listed below shall be shipped AT THE SAME TIME to the following address:

U.S. ARMY TANK-AUTOMOTIVE AND ARMAMENTS COMMAND
Petroleum and Water Business Area
ATTN: AMSTA-TR-D (210)
6501 E. 11 Mile Road
Warren, MI 48397-5000

1. () Evidence of Manufacturing Facility Approval for new "Original" or "Reblend" qualifications.
2. () Evidence of Plant Filling Approval for new "Original" or "Reblend" qualifications.
3. () Qualification Samples, plainly identified with a securely attached, durable tag or label with the following:
MIL-PRF-46170 SAMPLE FOR QUALIFICATION INSPECTION
Name of Manufacturer:
Product Name:
Product Type:
Product Formula Number:
Date of Manufacture:

- 2 gallons of finished product (submitted in metal or non-breakable glass containers).
4. () Complete formulation listed on the Formulation Disclosure Document, signed by a corporate official and notarized. This is considered proprietary information and will be treated as such.
5. () Laboratory test report, in the same format as shown in this Guide, with data from the manufacturer's laboratory or a commercial laboratory, showing test results for all requirements of the specification.
6. () Completed affidavit.
7. () Current Material Safety Data Sheets (MSDS) in accordance with FED-STD-313B for the finished product and each ingredient.
8. () Certified check for the designated amount made payable to the Treasurer of the United States.
9. () Copy of hazardous warning label which will be printed on all containers. The label must conform to the most recent federal guidance for labeling of hazardous substances and must also contain any specific labeling required by the specification.

(Corporate Official) Signature_____

(Typed Name of Corporate Official)

MIL-PRF-46170 QUALIFICATION AFFIDAVIT

In submitting _____, _____, which meets the requirements of MIL-PRF-46170,
(product name) (product formula no.)

Type _____,

(manufacturer's name and address)

- (1) Agrees to be bound by all of the provisions and terms set forth in this document.
- (2) Is the manufacturer of the product or a distributor authorized by the manufacturer to rebrand and distribute the product under his own brand and designation. A distributor shall furnish certification from the actual manufacturer that he is authorized to rebrand and distribute the product with his own brand designation (Rebrand Affidavit).
- (3) Has determined from actual tests (within the limits of test equipment commonly available, unless otherwise specified) that the product conforms to the applicable specification. (Test reports and data should be furnished with the application.)
- (4) Will supply items for test which are representative of the manufacturer's production.
- (5) Will supply for use by the Government, products which meet the requirements of the specification in every respect.
- (6) Will not apply for a retest of the product until satisfactory evidence is furnished that all of the defects which were disclosed by previous tests have been corrected. (Test reports may be required as evidence.)
- (7) Will not state or imply in advertising or otherwise that a product(s) which has received Department of Defense Qualification Approval is the only product of that type so qualified, or that the Department of Defense in any way recommends or endorses the product.
- (8) Will notify the responsible activity of any change in his product after qualification approval.
- (9) Will, when requested by the Preparing Activity, submit certification signed by a responsible official of management, attesting that the listed product(s) is still available from the listed plant, can be produced under the same conditions as originally qualified, i.e., same process, materials, construction, design, manufacturer's part number or designation, and meets the requirements of the current issue of the specification.

Date _____

Subscribed and sworn to before me

this _____ day of _____, 19____.

(Notary Public)

(Name of organization)

(Signature of Corp. Officer)

Notary Public in and for the

(Typed name Corp. Officer)

County of _____

State of _____

(Title of Corp. Officer)

My commission expires _____

DATE:
 MANUFACTURER:
 PLANT LOCATION:
 PRODUCT NAME:
 PRODUCT TYPE:
 PRODUCT FORMULA NUMBER:

We the manufacturer, certify that _____
 (product name)

submitted for qualification under MIL-PRF-46170 contains the following:

<u>COMPONENT</u>	<u>CHEMICAL NAME</u>	<u>WT%</u>	<u>SUPPLIER</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

In addition, we hereby certify that this product does not contain carcinogenic or potentially carcinogenic constituents as defined under Hazard Communication Standard (29CFR1910.1200); and the samples sent for qualification testing are the same formulation as stated above.

Date _____

Subscribed and sworn to before me

this ____ day of _____, 19 ____.

 (Name of Organization)

 (Notary Public)

 (Signature, Corporate Officer)

Notary Public in and for the

 (Typed Name Corporate Officer)

County of _____

State of _____

My commission expires _____

(Title of Corporate Officer)

MIL-PRF-46170 QUALIFICATION
MANUFACTURER'S LABORATORY TEST DATA

DATE:
PRODUCT NAME:
PRODUCT TYPE:
PRODUCT FORMULA NUMBER:
MANUFACTURER:
PLANT ADDRESS:

FINISHED PRODUCT REQUIREMENTS

Page 1

<u>Test</u>	<u>Method</u>	<u>Requirement</u>	<u>Results</u>
Viscosity, Cst	ASTM D445		
@ 40°C, max		19.5	
@ 100°C, min		3.4	
@ -40°C, max		2600	
@ -54°C, max		Report	
Trace sediment, ml, max	ASTM D2273	0.005	
Evaporation loss, %, max	ASTM D972	5.0	
149°C, 22 hours			
Flash point, °C, min	ASTM D92		
type I		218	
type II		204	
Fire point, °C, min	ASTM D92	246	
Pour point, °C, max	ASTM D97	-54	
Water, %, max	ASTM D1744	0.05	
Acid number, mg KOH	ASTM D974	0.20	
Autoignition temperature, °C, min	ASTM E659	343	
Bulk modulus, isothermal secant,			
kPa, (psi), max	4.6.3*	1.379 x 10 ⁶	
Water sensitivity,			
% transmittance, min	4.6.5*	90	
Specific gravity	ASTM D287	Report	
Galvanic corrosion	FTM 5322	pass	
Corrosiveness & oxidation stability,			
121°C, 168 hours	FTM 5308		
Corrosiveness, wt change, mg/cm ² , max			
cadmium		0.2	
steel		0.2	
aluminum		0.2	
magnesium		0.2	
copper		0.6	

* These are paragraphs in MIL-PRF-46170 where the Method is outlined.

<u>Test</u>	<u>Method</u>	<u>Requirement</u>	<u>Results</u>
Corrosiveness & oxidation stability:			
Appearance:			
cadmium		no corrosion	
steel		no corrosion	
aluminum		no corrosion	
magnesium		no corrosion	
copper, ASTM D130, max	2		
Oxidation stability:			
viscosity change, %, max	± 10		
acid # change, mg KOH/g, max		+ 0.30	
Low temperature stability	FTM 3458	pass	
Rust prevention, 100 hours	ASTM D1748	pass	
Swelling of synthetic rubber, %	FTM 3603	15 to 25	
Solid particle contamination:			
Particle size, micron, max	Automatic counter		
5 to 25		10,000	
26 to 50		250	
51 to 100		50	
over 100		10	
Gravimetric, mg/100ml, max	ASTM F313	0.5	
Filtration time, minutes, max	FTM 3009	15	
Foaming:			
Sequence 1, ml, max	ASTM D892	65/0	
Sequence 2, ml, max		65/0	
Sequence 3, ml, max		65/0	
Lubricity, scar diameter, mm, max			
10 kg load	ASTM D4172	0.30	
40 kg load		0.65	
Compatibility			
Fluid A	4.6.2*	compatible	
Fluid B		compatible	
Fluid C		compatible	
Fluid D		compatible	
MIL-H-5606		compatible	
MIL-PRF-6083		compatible	
MIL-H-83282		compatible	
High temperature - high pressure			
spray ignition	FTM 6052	pass	
Flame propagation	4.6.4.1*	0.30	
Color of finished fluid, type II	4.6.8*	pass	
Storage stability, 12 months	FTM 3465 and storage stability tests (attached)	pass	
Workmanship	3.4.14*	pass	

* These are paragraphs in MIL-PRF-46170 where the Method is outlined.

MIL-PRF-46170 STORAGE STABILITY REQUIREMENTS

<u>Test</u>	<u>Method</u>	<u>Requirement</u>	<u>Results</u>
Viscosity, Cst	ASTM D445		
@ 40°C, max		19.5	
@ 100°C, min		3.4	
@ -40°C, max		2600	
@ -54°C, max		Report	
Trace sediment, ml, max	ASTM D2273	0.005	
Evaporation loss, %, max	ASTM D972	5.0	
149°C, 22 hours			
Flash point, °C, min	ASTM D92		
type I		218	
type II		204	
Fire point, °C, min	ASTM D92	246	
Pour point, °C, max	ASTM D97	-54	
Water, %, max	ASTM D1744	0.05	
Acid number, mg KOH	ASTM D974	0.20	
Autoignition temperature, °C, min	ASTM E659	343	
Water sensitivity,			
% transmittance, min	4.6.5*	90	
Specific gravity	ASTM D287	Report	
Galvanic corrosion	FTM 5322	pass	
Low temperature stability	FTM 3458	pass	
Rust prevention, 100 hours	ASTM D1748	pass	
Swelling of synthetic rubber, %	FTM 3603	15 to 25	
Solid particle contamination:			
Particle size, micron, max	Automatic counter		
5 to 25		10,000	
26 to 50		250	
51 to 100		50	
over 100		10	
Gravimetric, mg/100ml, max	ASTM F313	0.5	
Filtration time, minutes, max	FTM 3009	15	
Foaming:	ASTM D892		
Sequence 1, ml, max		65/0	
Sequence 2, ml, max		65/0	
Sequence 3, ml, max		65/0	
Lubricity, scar diameter, mm, max	ASTM D4172		
10 kg load		0.30	
40 kg load		0.65	
Color of finished fluid, type II	4.6.8*	pass	
Workmanship	3.4.14*	pass	

* These are paragraphs in MIL-PRF-46170 where the Method is outlined.

MIL-PRF-6083 QUALIFICATION CHECKLIST

For your convenience, the requirements delineated in Part IV for Original Approval have been outlined in the following checklist. A letter requesting qualification shall be sent by the supplier to this office initially. A letter response will be returned stating the qualification fee and any applicable exceptions to the following listed items. Then the following list shall be completed, signed by the manufacturer to insure that all requirements are completed, and submitted with all requested items to this office. ALL ITEMS listed below shall be shipped AT THE SAME TIME to the following address:

U.S. ARMY TANK-AUTOMOTIVE AND ARMAMENTS COMMAND
Petroleum and Water Business Area
ATTN: AMSTA-TR-D (210)
6501 E. 11 Mile Road
Warren, MI 48397-5000

1. () Evidence of Manufacturing Facility Approval for new "Original" or "Reblend" qualifications.
2. () Evidence of Plant Filling Approval for new "Original" or "Reblend" qualifications.
3. () Qualification Samples plainly identified with a securely attached, durable tag or label with the following:
MIL-PRF-6083 SAMPLE FOR QUALIFICATION INSPECTION
Name of Manufacturer:
Product Name:
Product Formula Number:
Date of Manufacture:

- 2 gallons of the finished product (submitted in metal or non-breakable glass containers).
4. () Complete formulation listed on the Formulation Disclosure Document, signed by a corporate official and notarized. This is considered proprietary information and will be treated as such.
5. () Laboratory test report, in the same format as shown in this Guide, with data from the manufacturer's laboratory or a commercial laboratory, showing test results for all requirements of the specification.
6. () Completed affidavit.
7. () Current Material Safety Data Sheets (MSDS) in accordance with FED-STD-313B for the finished product and each ingredient.
8. () Certified check for the designated amount made payable to the Treasurer of the United States.
9. () Copy of hazardous warning label which will be printed on all containers. The label must conform to the most recent federal guidance for labeling of hazardous substances and must also contain any specific labeling required by the specification.

(Corporate Official) Signature_____

(Typed Name of Corporate Official)

MIL-PRF-6083 QUALIFICATION AFFIDAVIT

In submitting _____, _____, which meets the requirements of MIL-PRF-6083,
(product name) (product formula no.)

(manufacturer's name and address)

- (1) Agrees to be bound by all of the provisions and terms set forth in this document.
- (2) Is the manufacturer of the product or a distributor authorized by the manufacturer to rebrand and distribute the product under his own brand and designation. A distributor shall furnish certification from the actual manufacturer that he is authorized to rebrand and distribute the product with his own brand designation (Rebrand Affidavit).
- (3) Has determined from actual tests (within the limits of test equipment commonly available, unless otherwise specified) that the product conforms to the applicable specification. (Test reports and data should be furnished with the application.)
- (4) Will supply items for test which are representative of the manufacturer's production.
- (5) Will supply for use by the Government, products which meet the requirements of the specification in every respect.
- (6) Will not apply for a retest of the product until satisfactory evidence is furnished that all of the defects which were disclosed by previous tests have been corrected. (Test reports may be required as evidence.)
- (7) Will not state or imply in advertising or otherwise that a product(s) which has received Department of Defense Qualification Approval is the only product of that type so qualified, or that the Department of Defense in any way recommends or endorses the product.
- (8) Will notify the responsible activity of any change in his product after qualification approval.
- (9) Will, when requested by the Preparing Activity, submit certification signed by a responsible official of management, attesting that the listed product(s) is still available from the listed plant, can be produced under the same conditions as originally qualified, i.e., same process, materials, construction, design, manufacturer's part number or designation, and meets the requirements of the current issue of the specification.

Date _____

Subscribed and sworn to before me

this _____ day of _____, 19_____.

(Name of Organization)

(Notary Public)

(Signature of Corp. Officer)

Notary Public in and for the

(Typed Name Corp. Officer)

County of _____

State of _____

(Title of Corp. Officer)

My commission expires _____

DATE:
MANUFACTURER:
PLANT LOCATION:
PRODUCT FORMULA NUMBER:
PRODUCT NAME:

We the manufacturer, certify that _____
(product name)

submitted for qualification under MIL-PRF-6083 contains the following:

<u>COMPONENT</u>	<u>CHEMICAL NAME</u>	<u>WT%</u>	<u>SUPPLIER</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

In addition, we hereby certify that this product does not contain carcinogenic or potentially carcinogenic constituents as defined under Hazard Communication Standard (29CFR1910.1200); and the samples sent for qualification testing are the same formulation as stated above.

Date _____

Subscribed and sworn to before me

this ____ day of _____, 19 ____.

(Notary Public)

(Name of Organization)

(Signature, Corporate Officer)

Notary Public in and for the

(Typed Name Corporate Officer)

County of _____

State of _____

My commission expires _____

(Title of Corporate Officer)

MIL-PRF-6083 QUALIFICATION
MANUFACTURER'S LABORATORY TEST DATA

DATE:
PRODUCT NAME:
PRODUCT FORMULA NUMBER:
MANUFACTURER:
PLANT ADDRESS:

FINISHED PRODUCT REQUIREMENTS

<u>Test</u>	<u>Method</u>	<u>Requirement</u>	<u>Results</u>
Corrosion inhibitors	4.6.6*		
Chloride content		0.02	
Sulfate content		0.05	
Acid number		0.10	
Viscosity, Cst	ASTM D445		
@ 40°C, min		13	
@ -40°C, max		800	
@ -54°C, max		3500	
Pour point, °C, max	ASTM D97	-59	
Flash point, °C, min	ASTM D92	82	
Acid number, mg KOH	ASTM D974	0.20	
Trace sediment, ml, max	ASTM D2273	0.005	
Water, %, max	ASTM D1744	0.05	
Color of finished fluid	4.6.1.2* pass		
Corrosiveness & oxidation stability, 121°C, 168 hours	FTM 5308		
Corrosiveness, wt change, mg/cm ² , max			
cadmium		0.2	
steel		0.2	
aluminum		0.2	
magnesium		0.2	
copper		0.6	
Appearance:			
cadmium		no corrosion	
steel		no corrosion	
aluminum		no corrosion	
magnesium		no corrosion	
copper, ASTM D130, max	2		
Oxidation stability:			
viscosity change, %, max		-5 to +20	
acid # change, mg KOH/g, max		+ 0.30	
Copper Corrosion	ASTM D130	3a	
Rust prevention, 100 hours	ASTM D1748	pass	
Low temperature stability	FTM 3458	pass	

* These are paragraphs in MIL-PRF-6083 where the Method is outlined.

<u>Test</u>	<u>Method</u>	<u>Requirement</u>	<u>Results</u>
Shear stability, % viscosity decrease	4.6.4*	2.0	
Swelling of synthetic rubber, %	FTM 3603	19.0 to 28.0	
Evaporation loss, %, max 100°C, 22 hours	ASTM D972	70.0	
Solid particle contamination:			
Particle size, micron, max	Automatic counter		
5 to 25		10,000	
26 to 50	250		
51 to 100		50	
over 100	10		
Gravimetric, mg/100ml, max	ASTM F313	0.5	
Filtration time, minutes, max	FTM 3009	15	
Specific gravity	ASTM D287	Report	
Galvanic corrosion	FTM 5322	pass	
Lubricity, scar diameter, mm, max	ASTM D4172	40 kg load	1.00
Foaming:	ASTM D892		
Sequence 1, ml, max		65/0	
Sequence 2, ml, max		65/0	
Sequence 3, ml, max		65/0	
Storage stability, 12 months	FTM 3465 and		
storage stability	tests (attached)	pass	
Workmanship	3.4.14*	pass	

* These are paragraphs in MIL-PRF-6083 where the Method is outlined.

<u>Test</u>	<u>Method</u>	<u>Requirement</u>	<u>Results</u>
Viscosity, cSt	ASTM D445		
@ 40°C, max		13	
@ -40°C, max		800	
@ -54°C, max		3500	
Pour point, °C, max	ASTM D97	-59	
Flash point, °C, min	ASTM D92	82	
Acid number, mg KOH	ASTM D974	0.20	
Trace sediment, ml, max	ASTM D2273	0.005	
Water, %, max	ASTM D1744	0.05	
Color of finished fluid	4.6.1.2* pass		
Copper Corrosion	ASTM D130	3a	
Rust prevention, 100 hours	ASTM D1748	pass	
Low temperature stability	FTM 3458	pass	
Swelling of synthetic rubber, %	FTM 3603	19.0 to 28.0	
Evaporation loss, %, max	ASTM D972	70.0	
100°C, 22 hours			
Solid particle contamination:			
Particle size, micron, max Automatic counter			
5 to 25			10,000
26 to 50	250		
51 to 100			50
over 100	10		
Gravimetric, mg/100ml, max	ASTM F313	0.5	
Filtration time, minutes, max	FTM 3009	15	
Specific gravity	ASTM D287	Report	
Galvanic corrosion	FTM 5322	pass	
Lubricity, scar diameter, mm, max	ASTM D4172		
40 kg load		1.00	
Foaming:	ASTM D892		
Sequence 1, ml, max		65/0	
Sequence 2, ml, max		65/0	
Sequence 3, ml, max		65/0	
Workmanship	3.4.14*	pass	

* These are paragraphs in MIL-PRF-6083 where the Method is outlined.

The product represented by this qualification blend meets or exceeds the requirements of MIL-PRF-6083.

Prepared By:

(Responsible Laboratory Official)

(Typed Name of Responsible Laboratory Official)

MIL-PRF-46176 QUALIFICATION CHECKLIST

For your convenience, the requirements delineated in Part IV for Original Approval have been outlined in the following checklist. The list shall be completed, signed by the manufacturer to insure all requirements are completed and submitted to this office. ALL ITEMS listed below should be mailed or shipped, as applicable, AT THE SAME TIME.

- 1. () The following qualification samples shall be submitted:

A new sample of the finished product will be submitted in a 5 gallon container with pour spout, and plainly identified with a securely attached, durable tag or label with the following:

SAMPLE FOR QUALIFICATION INSPECTION
(Military Specification Number)
Name of Manufacturer:
Product Formula Number:
Product Name:
Date of Manufacture:
Contents of Container:

- 2. () The complete formulation filled in on the Formulation Disclosure Document, signed by a corporate officer and notarized. This is considered proprietary information and will be treated as such.
- 3. () Material Safety Data Sheets in accordance with FED-STD-313B for each ingredient and the finished product.
- 4. () A certified test report in the same format as shown in this section, from the manufacturer or a commercial laboratory showing test results for all requirements of the specification.
- 5. () A completed qualification affidavit.
- 6. () One certified check for the designated amount made payable to the Treasurer of the United States.
- 7. () Items 2-6 should be mailed at the same time qualification samples are shipped.

Send all items to the following address:

U.S. ARMY TANK-AUTOMOTIVE AND ARMAMENTS COMMAND
Petroleum and Water Business Area
ATTN: AMSTA-TR-D (210)
6501 E. 11 Mile Road
Warren, MI 48397-5000

If there are any questions, please contact this office at (810) 574-4702

Signature _____
(Corporate Officer)

(Typed Name of Corp. Officer)

MIL-PRF-46176 QUALIFICATION AFFIDAVIT

In submitting _____, _____, which meets the requirements of MIL-PRF-46176,
(product name) (product code no.)

(manufacturer's name and address)

- (1) Agrees to be bound by all of the provisions and terms set forth in this document.
- (2) Is the manufacturer of the product or a distributor authorized by the manufacturer to rebrand and distribute the product under his own brand and designation. A distributor shall furnish certification from the actual manufacturer that he is authorized to rebrand and distribute the product with his own brand designation (Rebrand Affidavit).
- (3) Has determined from actual tests (within the limits of test equipment commonly available, unless otherwise specified) that the product conforms to the applicable specification. (Test reports and data should be furnished with the application.)
- (4) Will supply items for test which are representative of the manufacturer's production.
- (5) Will supply for use by the Government, products which meet the requirements of the specification in every respect.
- (6) Will not apply for a retest of the product until satisfactory evidence is furnished that all of the defects which were disclosed by previous tests have been corrected. (Test reports may be required as evidence.)
- (7) Will not state or imply in advertising or otherwise that a product(s) which has received Department of Defense Qualification Approval is the only product of that type so qualified, or that the Department of Defense in any way recommends or endorses the product.
- (8) Will notify the responsible activity of any change in his product after qualification approval.
- (9) Will, when requested by the Preparing Activity, submit certification signed by a responsible official of management, attesting that the listed product(s) is still available from the listed plant, can be produced under the same conditions as originally qualified, i.e., same process, materials, construction, design, manufacturer's part number or designation, and meets the requirements of the current issue of the specification.

DATE _____

Subscribed and sworn to before me
this ____ day of _____, 19____

(Name of Organization)

(Notary Public)

(Signature of Corp. Officer)

Notary Public in and for the
County of _____

(Typed name of Corp. Officer)

State of _____

(Title of Corp. Officer)

My commission expires _____

MIL-PRF-46176 FORMULATION DISCLOSURE FOR QUALIFICATION

DATE:
MANUFACTURER:
PLANT LOCATION:
PRODUCT NAME:
PRODUCT FORMULA NO.:

We the manufacturer, certify that _____
(product name)
submitted for qualification under MIL-PRF-46176B contains the following:

COMPONENT	CHEMICAL NAME	WT%	SUPPLIER
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

In addition, we hereby certify that this product does not contain carcinogenic or potentially carcinogenic constituents as defined under Hazard Communication Standard (29CFR1910.1200); and the samples sent for qualification testing are the same formulation as stated above.

Subscribed and sworn to before me
this ____ day of _____, 19 ____

DATE _____

(Notary Public)

(Name of Organization)

(Signature, Corp. Officer)

Notary Public in and for the
County of _____

(Typed Name, Corp. Officer)

State of _____

(Title of Corp. Officer)

My commission expires _____

MIL-PRF-46176 QUALIFICATION LABORATORY REPORT

Date:
Product Name:
Product Formula No.:
Plant Location:
Submitted By:
Manufacturer:

Qualification for MIL-PRF-46176

Para. Test	Requirement	Results
3.3.1	Equilibrium reflux boiling point 4.3.3.1*	260°C min
3.3.2	Wet boiling point 4.3.3.2*	207°C min
3.3.3	Flash point 4.3.3.3*	204°C min
3.3.4	Viscosity @ -55°C @ 100°C ASTM D445	900 cSt max 1.3 cSt min
3.3.5	Stroking performance 4.3.3.5*	meeting requirements specified in 3.3.5.1 through 3.3.5.9
3.3.5.1	Cylinder and piston diameter change 4.3.3.5.1*	changes shall not exceed 0.13 mm
3.3.5.2	Cup base diameter change 4.3.3.5.2*	Changes shall not exceed 0.90 mm
3.3.5.3	Cup hardness change 4.3.3.5.3*	Decrease shall not exceed 15 points
3.3.5.4	Cup lip interference set 4.3.3.5.4*	Shall not exceed 65 percent (%)
3.3.5.5	System pressure change 4.3.3.5.5*	Shall not increase more than 241 kPa or decrease more than 345 kPa during any 12-hour period of stroking
3.3.5.6	System fluid loss during test 4.3.3.5.6*	The volume loss shall not exceed 36 mL at the end of any 24-hour period of the stroking test
3.3.5.7	System fluid loss – end during test 4.3.3.5.7*	The volume loss shall not exceed 36 mL during the 100 strokes
3.3.5.8	Fluid sediment 4.3.3.5.8*	Fluid shall not contain more than 2% sediment by volume after completion of the stroking test
3.3.5.9	Piston performance 4.3.3.5.9*	During the stroking, the master cylinder piston and wheel cylinder pistons shall show no improper functioning

* These are paragraphs in MIL-PRF-46176 where the Method is outlined.

Qualification for MIL-PRF-46176

Para. Test	Requirement	Results
3.4.1	Corrosiveness 4.3.4.1	The corrosiveness of the brake fluid shall be demonstrated meeting requirement specified in 3.4.1.1 through 3.4.1.7
3.4.1.1	Condition of cups 4.3.4.1.1*	the rubber cups shall show no sloughing, tackiness, blisters, or any other form of disintegration
3.4.1.2	Cup base diameter change 4.3.4.1.2*	the change shall be not less than 0.03 mm and not more than 1.40 mm
3.4.1.3	Cup hardness change 4.3.4.1.3*	the decrease in the hardness shall not exceed 15 points
3.4.1.4	Condition of metal strips 4.3.4.1.4*	The metal strips shall not be pitted nor etched after exposure to the brake fluid
3.4.1.5	Metal strip weight change 4.3.4.1.5*	The permissible change in weight of the strips shall be as specified in table I of the specification
3.4.1.6	Condition of brake fluid 4.3.4.1.5	The brake fluid shall exhibit no gelling at 25 +/- 5 C, and no crystallization deposit shall form, after completion of the corrosiveness test as specified in 4.3.4.1
3.4.1.7	Fluid sediment 4.3.4.1.7*	The brake fluid shall not contain more than 0.10% sediment by volume after completion of the corrosiveness test
3.4.2.1	Volume swell 4.3.4.2.1*	Volume swell shall meet the requirements of table II
3.4.2.2	Base diameter change 4.3.4.2.2*	Change shall meet the requirements of table II
3.4.2.3	Hardness change 4.3.4.2.3*	Change shall meet the requirements of table II
3.4.2.4	Condition of specimens 4.3.4.2.4*	Test specimen shall show no sloughing, tackiness, blisters, or any other form of disintegration
3.5.1.1	Fluid mixture transparency at -40 C 4.3.5.1.1	A 50/50 mixture of the brake fluid to be tested and previously qualified brake fluid, shall be transparent after being subject to a temperature of -40 +/- 2 C for 24 h
3.5.1.2	Fluid mixture transparency at 60 C 4.3.5.1.2*	Brake fluid mixture shall transparent after being subjected to a temperature of 60 +/- 2 C for 24 h
3.5.1.3	Fluid mixture sediment 4.3.5.1.3	Brake fluid mixture shall not contain more than 0.05% of sediment by volume after being subjected to a temperature of 60 +/- 2 for 24 h
3.5.1.4 4.3.5.1.4*	Fluid mixture transparency at 25 C	Brake fluid mixture shall regain its original degree of clarity after stabilizing at 25 +/- 5 C

* These are paragraphs in MIL-PRF-46176 where the Method is outlined.

Qualification for MIL-PRF-46176

Para. Test	Requirement	Results
3.6.1 4.3.6.1	High temperature stability	The equilibrium reflux boiling point of the brake fluid, after the brake fluid has been subjected to a temperature of 185 +/-2 C for a minimum of 2 h, shall not decrease by more than 5 C from the equilibrium reflux boiling point
3.6.2.1	Appearance at -55 C 4.3.6.2.1	The brake fluid shall show no stratification, separation, precipitation, or crystallization after being subjected to a temperature of -55 C for a minimum of 6 hours
3.6.2.2	Fluidity at -55 C 4.3.6.2.2	The brake fluid shall remain capable of flowing after being subjected to a temperature of -55 c for a minimum of 6 h
3.6.2.3	Appearance at 25 C 4.3.6.2.3	The brake fluid shall regain its original degree of clarity after stabilizing at 25 +/- 5
3.6.3.1	Water pick-up 4.3.6.3.1	the water pick up of the brake fluid, humidified shall not exceed 0.35 % by weight
3.6.3.2	Appearance at -40 C 4.3.6.3.2	The brake fluid, humidified, shall show no stratification, separation, precipitation, or crystallization after being subjected to a temperature of -40 C for 144 hours
3.6.3.3	Fluidity at -40 C 4.3.6.3.3	The brake fluid, humidified, shall remain capable of flowing after being subjected to a temperature of -40 C for 144 h
3.6.3.4	Appearance at 25 C 4.3.6.3.4	The brake fluid, humidified, shall regain its original degree of clarity after being stabilized at 25 C for 4 hours
3.6.3.5	Appearance at 60 C 4.3.6.3.5	The brake fluid, humidified, shall show no stratification, separation, precipitation, or crystallization after being subjected to a temperature of 60 C for 22 hours
3.6.3.6	Fluid sediment at 60 C 4.3.6.3.6	The brake fluid, humidified, shall not contain more than 0.05 % sediment by volume after being subjected to a temperature of 60 C for 22 hours

* These are paragraphs in MIL-PRF-46176 where the Method is outlined.

* These are paragraphs in MIL-PRF-46176 where the Method is outlined.

Para.	Test	Requirement	Results
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* These are paragraphs in MIL-PRF-46176 where the Method is outlined.

MIL-L-53131 QUALIFICATION CHECKLIST

For your convenience, the requirements delineated in Part IV for Original Approval have been outlined in the following checklist. A letter requesting qualification shall be sent by the supplier to this office initially. A letter response will be returned stating the qualification fee and any applicable exceptions to the following listed items. Then the following list shall be completed, signed by the manufacturer to insure that all requirements are completed, and submitted with all requested items to this office. ALL ITEMS listed below shall be shipped AT THE SAME TIME to the following address:

U.S. ARMY TANK-AUTOMOTIVE AND ARMAMENTS COMMAND
Petroleum and Water Business Area
ATTN: AMSTA-TR-D (210)
6501 E. 11 Mile Road
Warren, MI 48397-5000

1. () Evidence of Plant Blending Approval for new "Original" or "Reblend" qualifications.
2. () Evidence of Plant Filling Approval for new "Original" or "Reblend" qualifications.
3. () Qualification Samples, plainly identified with a securely attached, durable tag or label with the following:
MIL-L-53131 SAMPLE FOR QUALIFICATION INSPECTION
Name of Manufacturer:
Product Name:
Product Code:
Grade:
Date of Manufacture:
Contents of Container:

- 2 gallons of finished product (submitted in metal or non-breakable glass containers).
4. () Complete formulation listed on the Formulation Disclosure Document, signed by a corporate official and notarized. This is considered proprietary information and will be treated as such.
5. () Laboratory test report, in the same format as shown in this Guide, with data from the manufacturer's laboratory or a commercial laboratory, showing test results for all requirements of the specification.
6. () Completed affidavit.
7. () Current Material Safety Data Sheets (MSDS) in accordance with FED-STD-313B for the finished product and each ingredient.
8. () Certified check for the designated amount made payable to the Treasurer of the United States.
9. () Copy of hazardous warning label which will be printed on all containers. The label must conform to the most recent federal guidance for labeling of hazardous substances and must also contain any specific labeling required by the specification.

(Corporate Official) Signature_____

(Typed Name of Corporate Official)

MIL-L-53131 QUALIFICATION AFFIDAVIT

In submitting _____, _____, which meets the requirements of MIL-L-53131,
(product name) (product code no.)

(manufacturer's name and address)

- (1) Agrees to be bound by all of the provisions and terms set forth in this document.
- (2) Is the manufacturer of the product or a distributor authorized by the manufacturer to rebrand and distribute the product under his own brand and designation. A distributor shall furnish certification from the actual manufacturer that he is authorized to rebrand and distribute the product with his own brand designation (Rebrand Affidavit).
- (3) Has determined from actual tests (within the limits of test equipment commonly available, unless otherwise specified) that the product conforms to the applicable specification. (Test reports and data should be furnished with the application.)
- (4) Will supply items for test which are representative of the manufacturer's production.
- (5) Will supply for use by the Government, products which meet the requirements of the specification in every respect.
- (6) Will not apply for a retest of the product until satisfactory evidence is furnished that all of the defects which were disclosed by previous tests have been corrected. (Test reports may be required as evidence.)
- (7) Will not state or imply in advertising or otherwise that a product(s) which has received Department of Defense Qualification Approval is the only product of that type so qualified, or that the Department of Defense in any way recommends or endorses the product.
- (8) Will notify the responsible activity of any change in his product after qualification approval.
- (9) Will, when requested by the Preparing Activity, submit certification signed by a responsible official of management, attesting that the listed product(s) is still available from the listed plant, can be produced under the same conditions as originally qualified, i.e., same process, materials, construction, design, manufacturer's part number or designation, and meets the requirements of the current issue of the specification.

Subscribed and sworn to before me

this _____ day of _____, 19____.

(Name of organization)

(Notary Public)

(Signature of Corp. Officer)

Notary Public in and for the

(Typed name Corp. Officer)

County of _____

State of _____

(Title of Corp. Officer)

My commission expires _____

DATE:
 MANUFACTURER:
 PLANT LOCATION:
 PRODUCT DESIGNATION:
 GRADE:

We the manufacturer, certify that _____
 (product designation)
 submitted for qualification under MIL-L-53131 contains the following:

<u>COMPONENT</u>	<u>CHEMICAL NAME</u>	<u>WT%</u>	<u>SUPPLIER</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

In addition, we hereby certify that this product does not contain carcinogenic or potentially carcinogenic constituents as defined under Hazard Communication Standard (29CFR1910.1200); and the samples sent for qualification testing are the same formulation as stated above.

Date _____

Subscribed and sworn to before me

this ____ day of _____, 19 ____.

 (Name of Organization)

 (Notary Public)

 (Signature, Corporate Officer)

Notary Public in and for the

 (Typed Name Corporate Officer)

County of _____

State of _____

My commission expires _____

 (Title of Corporate Officer)

MIL-L-53131 QUALIFICATION
MANUFACTURER'S LABORATORY TEST DATA

DATE: _____ PRODUCT NAME: _____ PRODUCT CODE: _____ GRADE:
MANUFACTURER:
PLANT ADDRESS:

<u>Test</u>	<u>Results</u>	<u>Method</u>
Viscosity, cSt		ASTM D445
@ 40°C, max		
@ 100°C, min		
@ -40°C, max		
Evaporation loss, %, max		
149°C, 22 hours	_____	ASTM D972
Flash point, °C, min	_____	ASTM D92
Pour point, °C, min	_____	ASTM D97
Acid number, mg KOH/g, max	_____	ASTM D974 or ASTM D664
Corrosiveness & oxidation stability, 150°C, 72 hours		ASTM D4636
Corrosiveness, wt change, mg/cm ² , max		
silver		
steel		
aluminum		
copper		
Oxidation stability:		
viscosity change at 40 °C, %, max		
acid # change, mg KOH/g, max		
Solid particle contamination:		
Particle size, micron, max		FTM 3009 or Automatic particle counter
5 to 15		
16 to 25		
26 to 50		
51 to 100		
over 100		
Gravimetric, mg/100ml, max	_____	ASTM D4898
Lubricity, scar diameter, mm, max		ASTM D4172
400 N load		
150 N load		
Workmanship	_____	3.8*
Storage stability (12 months)	_____	FTM 3465 and 3.7*

* These are paragraphs in MIL-L-53131 where the method is outlined.

The product represented by this qualification blend meets or exceeds the requirements of MIL-L-53131.

Prepared By:
(Responsible Laboratory Official)

(Type Name and Title of Laboratory Official)

CHEMICAL AND PHYSICAL REQUIREMENTS FOR MIL-L-53131 PRODUCT

Test	Method	Requirement				
		Grade				
		4	6	9	14	40
Viscosity, cSt	ASTM D445					
@ 40°C, max				18.5	33.0	75.0 130.0 420.0
@ 100°C, min				3.5	5.4	9.0 13.5 38.0
@ -40°C, max				3500	7900	30000 -- --
Evaporation loss, %, max						
149°C, 22 hours	ASTM D972			5.0	3.0	3.0 2.0 1.0
Flash point, °C, min	ASTM D92			227	227	234 245 273
Pour point, °C, min	ASTM D97			-62	-57	-54 -40 -27
Acid number, mg KOH/g, max	ASTM D974			0.1	0.1	0.1 0.1 0.1
Corrosiveness & oxidation stability,						
150°C, 72 hours	ASTM D4636					
Corrosiveness, wt change, mg/cm ² , max						
silver			0.2	0.2	0.2	0.2 0.2 0.2
steel				0.2	0.2	0.2 0.2 0.2
aluminum				0.4	0.4	0.4 0.4 0.4
copper				0.6	0.6	0.6 0.6 0.6
Oxidation stability:						
viscosity change at 40 °C, %, max				30	10	5 5 5
acid # change, mg KOH/g, max				4.5	3.0	3.0 3.0 3.0
Solid particle contamination:						
Particle size, micron, max	FTM 3009 or Automatic particle counter					
5 to 15				150	150	150 150 150
16 to 25			45	45	45	45 45 45
26 to 50			23	23	23	23 23 23
51 to 100			10	10	10	10 10 10
over 100			0	0	0	0 0 0
Gravimetric, mg/100ml, max	ASTM D4898			0.3	0.3	0.3 0.3 0.3
Lubricity, scar diameter, mm, max	ASTM D4172					
400 N load				0.9	0.9	0.9 0.9 0.9
150 N load				0.35	0.35	0.35 0.35 0.35
Workmanship	3.8*			Pass	Pass	Pass Pass Pass
Storage stability (12 months)	3.7*			Pass	Pass	Pass Pass Pass

* These are paragraphs in MIL-L-53131 where the method is outlined.

MIL-PRF-10924F QUALIFICATION CHECKLIST

In addition to meeting the requirements delineated in Part IV for Original Approval, the following checklist shall be completed and signed by the manufacturer. It should accompany each sample of grease submitted for qualification testing.

1. () A letter requesting qualification of a candidate grease under MIL-PRF-10924F (authorizing letter). The letter should describe the sample in terms of the manufacturing code/formula number, batch number, and product brand name.

The following (a and b) are required enclosures to the authorizing letter.

a. () Two (2) sets of Formulation Disclosure Affidavits and certified test reports. The front of the document lists the applicable formulation data, and the back is a certified test report from the manufacturer or a commercial laboratory showing test results for all requirements of the specification. This document must be signed by a corporate officer and notarized.

b. () Material Safety Data Sheets in accordance with FED-STD-313B for the base oil, additives, and the finished product.

c. () Completed Qualification Affidavit.

2. () The qualification sample (two 6.5 pound cans/pails) shall be plainly marked and identified with securely attached, durable tags or labels marked with the following information:

Sample for Qualification Inspection

Lubricant (Military Specification Number)

Name of Manufacturer

Product Code Number/Formula Number

Product Name

Date of Manufacture

Submitted by (Name and Date) for qualification testing in accordance with the requirements of MIL-PRF-10924F under authorization of (Reference Authorizing Letter).

3. () It is the responsibility of the manufacturer to notify the responsible Qualifying Activity of any change in processing, production, manufacturing, and formulation of his product after qualification approval.

If there are any questions, please contact this office at (810) 574-4207.

SIGNATURE:

Manufacturer

MIL-PRF-10924F QUALIFICATION AFFIDAVIT

In submitting _____, _____, which meets the requirements of MIL-PRF-10924F,
(product name) (product formula no.)

(manufacturer's name and address)

- (1) Agrees to be bound by all of the provisions and terms set forth in this document.
- (2) Is the manufacturer of the product or a distributor authorized by the manufacturer to rebrand and distribute the product under his own brand and designation. A distributor shall furnish certification from the actual manufacturer that he is authorized to rebrand and distribute the product with his own brand designation (Rebrand Affidavit).
- (3) Has determined from actual tests (within the limits of test equipment commonly available, unless otherwise specified) that the product conforms to the applicable specification. (Test reports and data should be furnished with the application.)
- (4) Will supply items for test which are representative of the manufacturer's production.
- (5) Will supply for use by the Government, products which meet the requirements of the specification in every respect.
- (6) Will not apply for a retest of the product until satisfactory evidence is furnished that all of the defects which were disclosed by previous tests have been corrected. (Test reports may be required as evidence.)
- (7) Will not state or imply in advertising or otherwise that a product(s) which has received Department of Defense Qualification Approval is the only product of that type so qualified, or that the Department of Defense in any way recommends or endorses the product.
- (8) Will notify the responsible activity of any change in his product after qualification approval.
- (9) Will, when requested by the Preparing Activity, submit certification signed by a responsible official of management, attesting that the listed product(s) is still available from the listed plant, can be produced under the same conditions as originally qualified, i.e., same process, materials, construction, design, manufacturer's part number or designation, and meets the requirements of the current issue of the specification.

Date _____

Subscribed and sworn to before me

this _____ day of _____, 19____.

(Notary Public)

(Name of Organization)

(Signature of Corp. Officer)

Notary Public in and for the

County of _____

State of _____

My commission expires _____

(Typed name Corp. Officer)

(Title of Corp. Officer)

MIL-PRF-10924F QUALIFICATION TEST REPORT AND FORMULATION DISCLOSURE
FOR AUTOMOTIVE AND ARTILLERY GREASE,

U.S. ARMY TANK-AUTOMOTIVE AND ARMAMENTS COMMAND
Petroleum and Water Business Area
ATTN: AMSTA-TR-D (210)
6501 E. 11 Mile Road
Warren, Michigan 48397-5000

We have utilized the facilities of _____
(Testing Laboratory)

to make an evaluation of a lubricating grease consisting of the following additives and thickeners:

<u>Vol. %</u>	<u>Mass%</u>	<u>Name of Additive</u>	<u>Alternate Designation</u>	<u>Additive Supplier</u>
___	___			
___	___			
___	___			
___	___			
___	___			
___	___			

and the following base stock (s) manufactured by _____ and identified as:

A _____ B

C _____ D

<u>Component</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
Percent Volume	___	___	___	___
Crude Source	___	___	___	___
Refining Method	___	___	___	___
Viscosity @100°C, cSt	___	___	___	___
Viscosity @40°C, cSt	___	___	___	___
Viscosity Index	___	___	___	___
Gravity, °API	___	___	___	___
Pour Point, °C	___	___	___	___
Carbon Residue, %	___	___	___	___
Sulfated Ash, %	___	___	___	___
Sulfur Mass %	___	___	___	___
Color	___	___	___	___

Manufacturer _____

Plant Location _____

Production Date _____ Manufacturer's Designation
(product name)

This lubricant has been tested in strict accordance with applicable performance and laboratory tests, and has successfully met all the necessary requirements as indicated below. We have the facilities and full intent to make and supply such lubricant and to maintain the standard thereof identical to the lubricant found satisfactory. If the manufacturer wishes to use other locations, separate qualifications must be performed.

TEST RESULTS

<u>TEST</u>	<u>RESULTS</u>	<u>TEST METHOD*</u>
Worked Penetration	_____	D 217
Evaporated loss, wt %	_____	D 972
Oil separation, %	_____	D 1742
Dropping Point, °C	_____	D 2265
Extreme Pressure Properties, LWI, kgf	_____	D 2596
Wear Scar diameter, mm	_____	D 2266
Salt Water Corrosion Resistance	_____	D 1743 *
Oxidation Stability:		D 942
100 Hrs. KPa Loss		
400 Hrs. KPa Loss		
Copper Corrosion	_____	D 4048
Roll Stability	_____	D 1831
Water Stability	_____	D 217 *
Storage Stability	_____	*
Low Temperature Torque @ -65°F (-54°C)		*
Breakaway Torque		
Running Torque at 5 min.		
Life Performance, 4 runs,		
160°C @1000 rpm	_____	D 3527
Workmanship	_____	*
Elastomer Compatibility, (CR, NBR-L)	_____	D 4289

* Indicates MIL-PRF-10924F Specification as the source for specific test parameters.

In addition, we hereby certify that this product does not contain carcinogenic or potentially carcinogenic constituents as defined under Hazard Communication Standard (29CFR1910.1200).

DATE

Subscribed and sworn to before me

(Name of Organization)

this ___ day of ___ 19__.

(Signature of Corporate Officer)

(Notary Public)

(Typed Name and Title of Corporate Officer)

CHEMICAL AND PHYSICAL REQUIREMENTS FOR MIL-PRF-10924F GREASE

<u>TEST</u>	<u>METHOD</u>	<u>REQUIREMENT</u>
Workmanship	*	Pass
Dropping Point, °C min	D 2265	220
Worked Penetration, min/max	D 217	265-295
Copper Corrosion, max	D 4048	lb
Oxidation Stability, min/max, Pressure Drop, psi (kPa)	D 942	
100 hours		5(34.5)
400 hours		20(138)
Worked Stability, min/max	D 217*	-25 to +60
Water Stability after 100,000 Double Strokes, +10.0% Water		
Min/max deviation from worked penetration	D 217*	-25 to +60
Evaporation loss, wt %, max, 22 hrs @ 99°C D 972		3.0
Oil Separation, % wt, max	D 1742	5.0
Extreme-Pressure Properties, Load Wear Index, min	D 2596	30.0
Wear Preventive Properties Scar diameter, max (mm)	D 2266	0.60
Salt Water Corrosion Resistance	D1743*	Pass
Storage Stability	*	Pass
Roll Stability, min/max Deviation from Worked Penetration	D 1831	-25 to +60
Low Temperature Torque	*	
Breakaway Torque		7 N.m
Running Torque at 5 min.		5 N.m
Life Performance (four test runs), min	D 3527	100 hours
Elastomer Compatibility, (CR, NBR-L)	D 4289	Report

* Indicates MIL-PRF-10924F Specification as the source for specific test parameters.

NOTE: Test methods preceded by "D" are American Society of Testing and Materials (ASTM) Standard Test Methods.

MIL-PRF-46010 QUALIFICATION CHECKLIST

For your convenience, the requirements delineated in Part IV for Original Approval have been outlined in the following checklist. The list shall be completed, signed by the manufacturer to insure all requirements are completed and submitted to this office. ALL ITEMS listed below should be mailed or shipped, as applicable, AT THE SAME TIME.

1. () The following qualification samples shall be submitted:

A new sample of the finished product will be submitted in 2 one gallon containers, and plainly identified with a securely attached, durable tag or label with the following:

SAMPLE FOR QUALIFICATION INSPECTION

(Military Specification Number)

Name of Manufacturer:

Product Name:

Product Type: (Type III)

Product Code Number/Formula Number:

Date of Manufacture:

2. () The complete formulation filled in on the Formulation Disclosure Document, signed by a corporate officer and notarized. This is considered proprietary information and will be treated as such.
3. () Material Safety Data Sheets in accordance with FED-STD-313B for each ingredient and the finished product.
4. () A certified test report in the same format as shown in this section, from the manufacturer or a commercial laboratory showing test results for all requirements of the specification.
5. () A completed qualification affidavit.
6. () One certified check for the designated amount made payable to the Treasurer of the United States.
7. () Items 2-6 should be mailed at the same time qualification samples are shipped.

Send all items to the following address:

U.S. ARMY TANK-AUTOMOTIVE AND ARMAMENTS COMMAND

Petroleum and Water Business Area

ATTN: AMSTA-TR-D (MS-110)

6501 E. 11 Mile Road

Warren, MI 48397-5000

If there are any questions, please contact Jean Van Sullen from this office at POLhelp@tacom.army.mil or (810) 574-4222.

Signature _____
(Corporate Officer)

(Typed Name of Corporate Officer)

MIL-PRF-46010 QUALIFICATION AFFIDAVIT

In submitting _____, _____, which meets the requirements of MIL-PRF-46010,
(product name) (product formula no.)
Type _____,

(manufacturer's name and address)

- (1) Agrees to be bound by all of the provisions and terms set forth in this document.
- (2) Is the manufacturer of the product or a distributor authorized by the manufacturer to rebrand and distribute the product under his own brand and designation. A distributor shall furnish certification from the actual manufacturer that he is authorized to rebrand and distribute the product with his own brand designation (Rebrand Affidavit).
- (3) Has determined from actual tests (within the limits of test equipment commonly available, unless otherwise specified) that the product conforms to the applicable specification. (Test reports and data should be furnished with the application.)
- (4) Will supply items for test which are representative of the manufacturer's production.
- (5) Will supply for use by the Government, products which meet the requirements of the specification in every respect.
- (6) Will not apply for a retest of the product until satisfactory evidence is furnished that all of the defects which were disclosed by previous tests have been corrected. (Test reports may be required as evidence.)
- (7) Will not state or imply in advertising or otherwise that a product(s) which has received Department of Defense Qualification Approval is the only product of that type so qualified, or that the Department of Defense in any way recommends or endorses the product.
- (8) Will notify the responsible activity of any change in his product after qualification approval.
- (9) Will, when requested by the Preparing Activity, submit certification signed by a responsible official of management, attesting that the listed product(s) is still available from the listed plant, can be produced under the same conditions as originally qualified, i.e., same process, materials, construction, design, manufacturer's part number or designation, and meets the requirements of the current issue of the specification.
- (10) Certifies that no graphite or powdered metals are present in this product formulation.

DATE _____

Subscribed and sworn to before me
this ____ day of _____, 19____

(Name of Organization)

Notary Public) (Signature of Corp. Officer)

Notary Public in and for the

(Typed name of Corp. Officer)

County of _____
State of _____

(Title of Corp. Officer)

My commission expires _____

MIL-PRF-46010 FORMULATION DISCLOSURE FOR QUALIFICATION

DATE:
 PRODUCT NAME:
 PRODUCT TYPE:
 PRODUCT CODE NO./FORMULA NO.:
 MANUFACTURER:
 PLANT LOCATION:

We the manufacturer, certify that _____
 (product designation)
 submitted for qualification under MIL-PRF-46010 contains the following:

COMPONENT	CHEMICAL NAME	WT%	SUPPLIER
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

In addition, we hereby certify that this product does not contain carcinogenic or potentially carcinogenic constituents as defined under Hazard Communication Standard (29CFR1910.1200); and the samples sent for qualification testing are the same formulation as stated above.

Subscribed and sworn to before me this ___ day of _____, 19 ____ _____ (Notary Public)	DATE _____ _____ (Name of Organization) _____ (Signature, Corp. Officer) _____ (Typed Name, Corp. Officer) _____ (Title of Corp. Officer)
Notary Public in and for the County of _____ State of _____ My commission expires _____	

MIL-PRF-46010 LABORATORY REPORT

Date:
Material:
Product Name:
Product Type:
Product Code No./Formula No.:
Plant Location:
Manufacturer:
Submitted By:

QUALIFICATION OF MIL-PRF-46010

Para.	Test	Requirement	Results
3.4.1	Film Adhesion ASTM D2510	no exposed bare surface	
3.6.1	Fluid Resistance ASTM D2510	no flakes or peeling and pass 3.3	
3.6.2	Thermal Stability ASTM D2511	no flakes, cracks, or softening	
3.3.1	Endurance Life ASTM D2625		
	Type III	than 450 minutes	
3.3.2	Load Capacity ASTM D2625		
	Type III	average not less than 2500 lbf	
3.6.3	Aluminum Corrosion ASTM D2649		
	Type III	500 hrs	
3.6.4	Sulfurous Acid FED-STd-791-5331		
	Type III	4 cycles (104 hrs)	

Para.	Test	Requirement	Results
3.6.5	Salt Spray FED-STD-791-4001 Type III	100 hrs	
3.4.3	Total Solids 4.3.4.3*		
3.5.1	Storage Stability endurance Type III	1 year 450 minutes	
	spray test Type III	4 cycles	
	Type III	100 hrs	
3.4.4	Volatile Organic Content ASTM D3960 Type III	250 g/l	

* Test shall be performed in accordance with this paragraph in MIL-PRF-46010.

MIL-PRF-46147 QUALIFICATION CHECKLIST

For your convenience, the requirements delineated in Part IV for Original Approval have been outlined in the following checklist. The list shall be completed, signed by the manufacturer to insure all requirements are completed and submitted to this office. ALL ITEMS listed below should be mailed or shipped, as applicable, AT THE SAME TIME.

- 1. () The following qualification samples shall be submitted:

A new sample of the finished product will be submitted in 2 one gallon containers and 8 aerosol cans, and plainly identified with a securely attached, durable tag or label with the following:

SAMPLE FOR QUALIFICATION INSPECTION

(Military Specification Number)

Name of Manufacturer:

Product Code Number/Formula No.:

Product Name:

Product Type: (Type I or Type II)

Product Form: (Bulk or Aerosol)

Plant Location:

Date of Manufacture:

- 2. () The complete formulation filled in on the Formulation Disclosure Document, signed by a corporate officer and notarized. This is considered proprietary information and will be treated as such.
- 3. () Material Safety Data Sheets in accordance with FED-STD-313B for each ingredient and the finished product.
- 4. () A certified test report in the same format as shown in this section, from the manufacturer or a commercial laboratory showing test results for all requirements of the specification.
- 5. () A completed qualification affidavit.
- 6. () One certified check for the designated amount made payable to the Treasurer of the United States.
- 7. () Items 2-6 should be mailed at the same time qualification samples are shipped.

Send all items to the following address:

U.S. ARMY TANK-AUTOMOTIVE AND ARMAMENTS COMMAND

Mobility Technology Center

ATTN: AMSTA-TR-D (210)

6501 E. 11 Mile Road

Warren, MI 48397-5000

If there are any questions, please contact this office at (810) 574-4207.

Signature _____
(Corporate Official)

(Typed Name of Corporate Officer)

MIL-PRF-46147 QUALIFICATION AFFIDAVIT

In submitting _____, _____, which meets the requirements of MIL-PRF-46147,
(product name) (product formula no.)

Type _____, Form _____,

(manufacturer's name and address)

- (1) Agrees to be bound by all of the provisions and terms set forth in this document.
- (2) Is the manufacturer of the product or a distributor authorized by the manufacturer to rebrand and distribute the product under his own brand and designation. A distributor shall furnish certification from the actual manufacturer that he is authorized to rebrand and distribute the product with his own brand designation (Rebrand Affidavit).
- (3) Has determined from actual tests (within the limits of test equipment commonly available, unless otherwise specified) that the product conforms to the applicable specification. (Test reports and data should be furnished with the application.)
- (4) Will supply items for test which are representative of the manufacturer's production.
- (5) Will supply for use by the Government, products which meet the requirements of the specification in every respect.
- (6) Will not apply for a retest of the product until satisfactory evidence is furnished that all of the defects which were disclosed by previous tests have been corrected. (Test reports may be required as evidence.)
- (7) Will not state or imply in advertising or otherwise that a product(s) which has received Department of Defense Qualification Approval is the only product of that type so qualified, or that the Department of Defense in any way recommends or endorses the product.
- (8) Will notify the responsible activity of any change in his product after qualification approval.
- (9) Will, when requested by the Preparing Activity, submit certification signed by a responsible official of management, attesting that the listed product(s) is still available from the listed plant, can be produced under the same conditions as originally qualified, i.e., same process, materials, construction, design, manufacturer's part number or designation, and meets the requirements of the current issue of the specification.
- (10) Certifies that no graphite or powdered metals are present in this product formulation.

DATE _____

Subscribed and sworn to before me
this ____ day of _____, 19____

(Name of Organization)

(Signature of Corp. Officer)

(Notary Public)

Notary Public in and for the

(Typed name of Corp. Officer)

County of _____

State of _____

(Title of Corp. Officer)

My commission expires _____

MIL-PRF-46147 FORMULATION DISCLOSURE FOR QUALIFICATION

DATE:
 MANUFACTURER:
 PLANT LOCATION:
 PRODUCT NAME:
 PRODUCT TYPE:
 PRODUCT FORM:
 PRODUCT CODE NO./FORMULA NO.:

We the manufacturer, certify that _____
 (product name)
 submitted for qualification under MIL-PRF-46147 contains the following:

COMPONENT	CHEMICAL NAME	WT%	SUPPLIER
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

In addition, we hereby certify that this product does not contain carcinogenic or potentially carcinogenic constituents as defined under Hazard Communication Standard (29CFR1910.1200); and the samples sent for qualification testing are the same formulation as stated above.

Subscribed and sworn to before me
 this ___ day of _____, 19 ____

DATE _____

 (Notary Public)

 (Name of Organization)

 (Signature, Corp. Officer)

Notary Public in and for the
 County of _____

 (Typed Name, Corp. Officer)

State of _____

 (Title of Corp. Officer)

My commission expires _____

MIL-PRF-46147 LABORATORY REPORT

Date:
Material:
Product Name:
Product Type:
Product Form:
Product Code No./Formula No.:
Plant Location:
Manufacturer:
Submitted By:

QUALIFICATION OF MIL-PRF-46147

Para.	Test	Requirement	Results
3.4.1	Film Adhesion ASTM D2510	no exposed bare surface	
3.3.1	Endurance Life ASTM D2625 Type I	average not less than 120 minutes	
	Type II	average not less than 90 minutes	
3.3.2	Load Capacity ASTM D2625	average not less 2500 lbf	
3.6.3	Salt Spray FED-STD-791	100 hrs, no more than 3 rust spots	
3.6.2	Thermal Stability ASTM D2511	no flakes, cracks, or softening	
3.6.1	Fluid Resistance ASTM D2510	no flakes or peeling and pass 3.3	
3.4.3	Spray Pattern 4.3.4.3*	38 mm wide	
	Spray Duration 4.3.4.3*	290 seconds	

* Test shall be performed in accordance with this paragraph in MIL-PRF-46147.

QUALIFICATION OF MIL-PRF-46147

Para.	Test	Requirement	Results
3.4.5	Total Solids 4.3.4.5.1*	24% wt (non-press)	
	Total Solids 4.3.4.5.2*	30 gms (gas-press)	
3.5.1	Storage Stability para 3.3 - 3.10	all of the above except 3.11	
3.4.6	Volatile Organic Content ASTM D3960 Type II	250 g/l	

* Test shall be performed in accordance with this paragraph in MIL-PRF-46147.

MIL-PRF-32033 QUALIFICATION CHECKLIST

For your convenience, the requirements delineated in Part IV for Original Approval have been outlined in the following checklist. A letter requesting qualification shall be sent by the supplier to this office initially. A letter response will be returned stating the qualification fee and any applicable exceptions to the following listed items. Then the following list shall be completed, signed by the manufacturer to insure that all requirements are completed, and submitted with all requested items to this office. ALL ITEMS listed below shall be shipped AT THE SAME TIME to the following address:

U.S. ARMY TANK-AUTOMOTIVE AND ARMAMENTS COMMAND
Petroleum and Water Business Area
ATTN: AMSTA-TR-D (210)
6501 E. 11 Mile Road
Warren, MI 48397-5000

- 1. () Evidence of Manufacturing Facility Approval for new "Original" or "Reblend" qualifications.
- 2. () Qualification Samples:
 - a. 2 gallons of the finished product (submitted in metal or non-breakable glass containers).
 - b. 1/2 gallon of each basestock (submitted in metal or non-breakable glass containers).
 - c. 2 ounces of each additive.

All samples shall be plainly identified with a securely attached, durable tag or label with the following:

MIL-PRF-32033 SAMPLE FOR QUALIFICATION INSPECTION
Name of Manufacturer:
Product Name:
Product Code/Formula No.:
Date of Manufacture:
Contents of Container:

- 3. () Complete formulation listed on the Formulation Disclosure Document, signed by a corporate official and notarized. This is considered proprietary information and will be treated as such.
- 4. () Laboratory test report, in the format shown in this Guide, with data from the manufacturer's laboratory or a commercial laboratory, showing test results for all requirements of the specification.
- 5. () Completed affidavit.
- 6. () Current Material Safety Data Sheets (MSDS) in accordance with FED-STD-313B for the finished product and each ingredient.
- 7. () Certified check for the designated amount made payable to the Treasurer of the United States.
- 8. () Copy of hazardous warning label which will be printed on all containers. The label must conform to the most recent federal guidance for labeling of hazardous substances and must also contain any specific labeling required by the specification.

(Corporate Official) Signature_____

(Typed Name of Corporate Official)

MIL-PRF-32033 QUALIFICATION AFFIDAVIT

In submitting _____, _____, which meets the requirements of MIL-PRF-32033,
(product name) (product formula no.)

(manufacturer's name and address)

- (1) Agrees to be bound by all of the provisions and terms set forth in this document.
- (2) Is the manufacturer of the product or a distributor authorized by the manufacturer to rebrand and distribute the product under his own brand and designation. A distributor shall furnish certification from the actual manufacturer that he is authorized to rebrand and distribute the product with his own brand designation (Rebrand Affidavit).
- (3) Has determined from actual tests (within the limits of test equipment commonly available, unless otherwise specified) that the product conforms to the applicable specification. (Test reports and data should be furnished with the application.)
- (4) Will supply items for test which are representative of the manufacturer's production.
- (5) Will supply for use by the Government, products which meet the requirements of the specification in every respect.
- (6) Will not apply for a retest of the product until satisfactory evidence is furnished that all of the defects which were disclosed by previous tests have been corrected. (Test reports may be required as evidence.)
- (7) Will not state or imply in advertising or otherwise that a product(s) which has received Department of Defense Qualification Approval is the only product of that type so qualified, or that the Department of Defense in any way recommends or endorses the product.
- (8) Will notify the responsible activity of any change in his product after qualification approval.
- (9) Will, when requested by the Preparing Activity, submit certification signed by a responsible official of management, attesting that the listed product(s) is still available from the listed plant, can be produced under the same conditions as originally qualified, i.e., same process, materials, construction, design, manufacturer's part number or designation, and meets the requirements of the current issue of the specification.

Subscribed and sworn to before me

this ____ day of _____, 19____.

(Notary Public)

Notary Public in and for the

County of _____

State of _____

My commission expires _____

Date _____

(Name of Organization)

(Signature of Corp. Officer)

(Typed name Corp. Officer)

(Title of Corp. Officer)

DATE:
 MANUFACTURER:
 PLANT LOCATION:
 PRODUCT NAME:
 PRODUCT CODE NO./FORMULA NO.:

We the manufacturer, certify that _____
 (product designation)

submitted for qualification under MIL-PRF-32033 contains the following:

<u>COMPONENT</u>	<u>CHEMICAL NAME</u>	<u>WT%</u>	<u>SUPPLIER</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

In addition, we hereby certify that this product does not contain carcinogenic or potentially carcinogenic constituents as defined under Hazard Communication Standard (29CFR1910.1200); and the samples sent for qualification testing are the same formulation as stated above.

Subscribed and sworn to before me
 this ____ day of _____, 19 ____.

_____ (Notary Public)

_____ (Signature, Corporate Officer)

Date _____
 _____ (Name of Organization)

Notary Public in and for the
 County of _____
 State of _____

My commission expires _____
 _____ (Title of Corporate Officer)

MIL-PRF-32033 QUALIFICATION
MANUFACTURER'S LABORATORY TEST DATA

DATE:
PRODUCT NAME:
PRODUCT CODE/FORMULA NO.:
MANUFACTURER:
PLANT ADDRESS:

Test	Method	Requirement	Results
ASTM color, max		ASTM D1500	7.0
Pour point, °C, max		ASTM D97	-57
Viscosity, cSt		ASTM D445	
@ 40°C, min			11
@ -40°C, max			7000
@ -54°C, max			60,000
Flash point, °C, min		ASTM D92	135
Precipitation number, ml, max		ASTM D91	0.05
Evaporation loss, %, max		ASTM D972	25.0
100°C, 22 hours			
Corrosiveness & oxidation stability,			
121°C, 168 hours	FTM 5308		
Corrosiveness, wt change, mg/cm ² , max			
cadmium			0.2
steel			0.2
aluminum			0.2
magnesium			0.2
copper			0.2
Appearance:			
cadmium			no corrosion
steel			no corrosion
aluminum			no corrosion
magnesium			no corrosion
copper			no corrosion
Oxidation stability:			
viscosity change, %, max		+20, -5	
acid # change, mg KOH/g, max			+ 0.20
insolubles or gum		nil	
Copper Corrosion, max		ASTM D130	2b
Rust prevention, 192 hours		FTM 5329	
oil			pass
gas pressurized cans		4.6.1*	pass
Water displacement/water stability		FTM 3007	pass
Cloud intensity at low temperature,			
72 hours		FTM 202	pass
Galvanic corrosion		FTM 5322	pass
Film characteristics		4.6.3*	pass
Removability		4.6.4*	pass

* Test shall be performed in accordance with this paragraph in MIL-PRF-32033 specification.

Test	Method	Requirement	Results
Lubricity, scar diameter, mm, max 40 kg load	ASTM D4172		1.00
Leakage from gas pressurized cans	4.6.7*	pass	
Fill, of gas pressurized cans	4.6.8*		pass
Workmanship	3.16*		pass

* Test shall be performed in accordance with this paragraph in MIL-PRF-32033 specification.

The product represented by this qualification blend meets or exceeds the requirements of MIL-PRF-32033.

Prepared By: _____
(Responsible Laboratory Official)

(Typed Name and Title of Laboratory Official)

MIL-PRF-3150 QUALIFICATION CHECKLIST

For your convenience, the requirements delineated in Part IV for Original Approval have been outlined in the following checklist. A letter requesting qualification shall be sent by the supplier to this office initially. A letter response will be returned stating the qualification fee and any applicable exceptions to the following listed items. Then the following list shall be completed, signed by the manufacturer to insure that all requirements are completed, and submitted with all requested items to this office. ALL ITEMS listed below shall be shipped AT THE SAME TIME to the following address:

U.S. ARMY TANK-AUTOMOTIVE AND ARMAMENTS COMMAND
Petroleum and Water Business Area
ATTN: AMSTA-TR-D (210)
6501 E. 11 Mile Road
Warren, MI 48397-5000

- 1. () Evidence of Plant Blending Approval for new "Original" or "Reblend" qualifications.
- 2. () Qualification Samples, plainly identified with a securely attached, durable tag or label with the following:

MIL-PRF-3150 SAMPLE FOR QUALIFICATION INSPECTION

Name of Manufacturer:
Product Name:
Product Code/Formula No.:
Date of Manufacture:
Contents of Container:

- 2 gallons of the finished product (submitted in metal or non-breakable glass containers).
- 1/2 gallon of each basestock (submitted in metal or non-breakable glass containers).
- 2 ounces of each additive.

- 3. () Complete formulation listed on the Formulation Disclosure Document, signed by a corporate official and notarized. This is considered proprietary information and will be treated as such.
- 4. () Laboratory test report, in the format shown in this Guide, with data from the manufacturer's laboratory or a commercial laboratory, showing test results for all requirements of the specification.
- 5. () Completed affidavit.
- 6. () Current Material Safety Data Sheets (MSDS) in accordance with FED-STD-313B for the finished product and each ingredient.
- 7. () Certified check for the designated amount made payable to the Treasurer of the United States.
- 8. () Copy of hazardous warning label which will be printed on all containers. The label must conform to the most recent federal guidance for labeling of hazardous substances and must also contain any specific labeling required by the specification.

Signature_____

(Corporate Official)

(Typed Name of Corporate Official)

MIL-PRF-3150 QUALIFICATION AFFIDAVIT

In submitting _____, _____, which meets the requirements of MIL-PRF-3150,
(product name) (product formula no.)

(manufacturer's name and address)

- (1) Agrees to be bound by all of the provisions and terms set forth in this document.
- (2) Is the manufacturer of the product or a distributor authorized by the manufacturer to rebrand and distribute the product under his own brand and designation. A distributor shall furnish certification from the actual manufacturer that he is authorized to rebrand and distribute the product with his own brand designation (Rebrand Affidavit).
- (3) Has determined from actual tests (within the limits of test equipment commonly available, unless otherwise specified) that the product conforms to the applicable specification. (Test reports and data should be furnished with the application.)
- (4) Will supply items for test which are representative of the manufacturer's production.
- (5) Will supply for use by the Government, products which meet the requirements of the specification in every respect.
- (6) Will not apply for a retest of the product until satisfactory evidence is furnished that all of the defects which were disclosed by previous tests have been corrected. (Test reports may be required as evidence.)
- (7) Will not state or imply in advertising or otherwise that a product(s) which has received Department of Defense Qualification Approval is the only product of that type so qualified, or that the Department of Defense in any way recommends or endorses the product.
- (8) Will notify the responsible activity of any change in his product after qualification approval.
- (9) Will, when requested by the Preparing Activity, submit certification signed by a responsible official of management, attesting that the listed product(s) is still available from the listed plant, can be produced under the same conditions as originally qualified, i.e., same process, materials, construction, design, manufacturer's part number or designation, and meets the requirements of the current issue of the specification.

Subscribed and sworn to before me _____ Date _____
 this ____ day of _____, 19_____
 _____ (Name of Organization)
 _____ (Notary Public) _____ (Signature of Corp. Officer)
 Notary Public in and for the _____
 County of _____ (Typed name Corp. Officer)
 State of _____
 _____ (Title of Corp. Officer)
 My commission expires _____

DATE:
 MANUFACTURER:
 PLANT LOCATION:
 PRODUCT NAME:
 PRODUCT CODE/FORMULA NO.:

We the manufacturer, certify that _____
 (product designation)
 submitted for qualification under MIL-PRF-3150 contains the following:

<u>COMPONENT</u>	<u>CHEMICAL NAME</u>	<u>WT%</u>	<u>SUPPLIER</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

In addition, we hereby certify that this product does not contain carcinogenic or potentially carcinogenic constituents as defined under Hazard Communication Standard (29CFR1910.1200); and the samples sent for qualification testing are the same formulation as stated above.

Subscribed and sworn to before me
 this ____ day of _____, 19 ____.

_____ (Notary Public)

_____ (Signature, Corporate Officer)

Date _____

_____ (Name of Organization)

Notary Public in and for the
 County of _____
 State of _____

_____ (Typed Name Corporate Officer)

My commission expires _____ (Title of Corporate Officer)

MIL-PRF-3150 QUALIFICATION
MANUFACTURER'S LABORATORY TEST DATA

DATE:
MANUFACTURER:
PRODUCT NAME:
PRODUCT CODE/FORMULA NO.:
PLANT LOCATION:

Storage Stability, Initial and 3 Samples

Test	Method	Requirement	Initial	#1	#2	#3
Pour Point, °C	ASTM D97	-6 max				
Viscosity, @ 40°C, cSt	ASTM D445	95 to 125				
Evap. loss @ 100°C, %	ASTM D972	5 max				
Copper Corrosion @ 100°C	ASTM D130	2e max				
Humidity Cabinet 30 days	FTM 5329	pass				
Removal	4.6.2*	pass				
Salt-spray Resistance	4.6.1*	pass				
Accel. Stability: Viscosity Change, @ 40°C		4.6.3.1* ± 5%				
Low Temp. Stability Viscosity Change @ 40°C		4.6.3.2* ± 5%				

* Test shall be performed in accordance with this paragraph in MIL-PRF-32033 specification.

The product represented by this qualification blend meets or exceeds the requirements of MIL-PRF-3150.

Prepared By:

(Responsible Laboratory Official)

(Typed Name and Title of Laboratory Official)

APPENDIX 2
REBLEND AFFIDAVITS

AFFIDAVIT FOR REBLENDING (BLENDING COMPANY)

STATE OF
COUNTY OF

_____ of lawful age, being first duly
Corporate Official)

sworn, deposes and says:

That he is _____ of
(Corporate Title) (Blending Company)

a _____ Corporation, hereinafter called
(State of Incorp) (Blending

_____ and makes this affidavit on its behalf; that
Company)

as shown by the attached additive manufacturer and base stock manufacturer affidavits,
_____ will in the near future obtain from these
(Blending Company)

manufacturers additive and base stock to be used in the manufacture of lubricants
authorized by _____ of
(Corporate Official, Qualified Lubricant)

_____ under Specification _____, with
(Qualified Lubricant Manuf.)

Qualification Number _____, on _____. This lubricant will be
(Date)

formulated in accordance with the original qualified product and will be marketed under
brand name _____.

(Corporate Official, Blending Co.)

Subscribed and sworn to before me this
_____ day of _____ 19

(Notary Public in and for County)
of _____, State of
My commission expires:

AFFIDAVIT FOR REBLENDING (BASE STOCK MANUFACTURER)

STATE OF _____
COUNTY OF _____

_____, of lawful age, being first duly sworn
(Corporate Official)

deposes and says:

That he is _____ of the _____
(Corporate Title) (Base Stock Manufacturer)

a _____ Corporation, hereinafter called _____
(State of Incorp.)

_____ and makes this affidavit on its behalf; that
Base Stock Manuf.)

as shown by the affidavit of _____ of _____
(official of Blending Co.) (Blending

_____ hereinafter called _____
Company) (Blending Company)

will obtain from _____ lubricants manufactured
(Base Stock Manuf.)

by the latter and that these lubricants are the same type base stocks as were used by
_____ as originally qualified under Military
(Manuf. of Qualified Lubricant)

Specification _____, with Qualification Number

on _____.
(Date)

(Corporate Official)

Subscribed and sworn to before me this

_____ day of _____ 19

(Notary Public in and for County)

of _____, State of

My commission expires:

AFFIDAVIT FOR REBLENDING (ADDITIVE MANUFACTURER)

STATE OF
COUNTY OF

_____, of of lawful age, being first duly sworn
(Corporate Official)

deposes and says:

That he is _____ of the _____
(Corporate Title) (Additive Manufacturer)

a _____ Corporation, hereinafter called _____
(State of Incorp.) (Additive

_____ and makes this affidavit on its behalf; that
Manufacturer)

as shown by the affidavit of _____ of _____
(Official of Blending Co.) (Blending

_____ hereinafter called _____
Company) (Blending Company)

will in the near future obtain from _____
(Additive Manufacturer)

lubricant additive(s) used in the manufacture of the lubricant known as

_____ on which the _____
(Brand Name of Qualified Lubricant) (Manuf. of

_____ was qualified under Military
Qualified Lubricant)

Specification _____ with Qualification Number

on _____.
(Date)

(Corporate Official)

Subscribed and sworn to before me this
_____ day of _____ 19

(Notary Public in and for County)
of _____, State of
My commission expires:

STATE OF
COUNTY OF

_____ of lawful age, being first duly
Corporate Official)

sworn, deposes and says:

That he is _____ of
(Corporate Title) (Qualified Lubricant Manufacturer)

a _____ Corporation, hereinafter called
(State of Incorporation)

_____ and makes this affidavit on its behalf; that
(Qualified Lubricant Manufacturer)

as shown by the affidavit of _____ of
(Official of Blending Company)

_____ who has been authorized by
(Blending Company)

_____ of
(Corporate Official, Qualified Lubricant)

_____ to manufacture and market lubricant
(Qualified Lubricant Manufacturer)

identical in formulation to the lubricant originally qualified by

_____ under Specification _____,
(Qualified Lubricant Manufacturer) (Military Specification)

with Qualification Number _____, on _____.
(Date)

(Corporate Official, Blending Co.)

(Typed Name and Title of Corporate Official)

Subscribed and sworn to before me this
_____ day of _____ 19

(Notary Public in and for County)
of _____, State of
My commission expires:

APPENDIX 3
REBRAND AFFIDAVITS

AFFIDAVIT FOR REBRAND (SUPPLIER)

STATE OF
COUNTY OF

_____ of lawful age, being first duly
(Corporate Official)

sworn, deposes and says:

That he is the _____ of
(Corporate Title)

_____ a
(Supplying Company) (State of Incorp.)

corporation hereinafter called _____ and
(Supplying Company)

makes this affidavit on its behalf; that as shown by the attached affidavit of
_____ hereinafter called
(Marketing Company)

_____ will in the near future make available
(Marketing Company)

lubricant trade-marked and brand named
(Marketing Company Brand Name)

that all lubricants which _____ will supply to
(Supplying Company)

_____ for resale under its trade-mark and trade
(Marketing Company)

name _____ shall be
(Marketing Company Brand Name) (Supplying Company)

_____ for which
Brand Name) (Supplying Company)

was listed as qualifying under Military Specification

with Qualification Number _____ on _____.
(Date)

(Corporate Official)

Subscribed and sworn to before me this
_____ day of _____ 19

(Notary Public in and for County)
of _____, State of
My commission expires:

AFFIDAVIT FOR REBRAND (MARKETER)

STATE OF
COUNTY OF

_____ of lawful age, being
(Corporate Official)

first duly sworn, deposes and says:

That he is _____ of
(Corporate Official)

_____, a
(Marketing Company) (State of Incorp.)

corporation hereinafter called _____ that as such
(Marketing Company)

_____ he is in charge of the
(Corporate Title)

of _____ and makes this affidavit on its behalf; that
(Marketing Company)

_____ in the near future will make available a
(Marketing Company)

lubricant under trade-mark and brand name _____;
(Marketing Company Brand Name)

that it will purchase all lubricant which it will sell under said trade-mark and
brand name _____; that all of said lubricants so
(Marketing Company Brand Name)

purchased from _____ and sold by
(Supplying Company) (Marketing

_____ under trade-mark and brand name
Company) (Marketing

_____ shall be
Company Brand Name) (Supplying Company Brand Name)

lubricant for which _____ was listed as qualifying under
(Supplying Company)

Military Specification _____, with Qualification Number

on _____.
(Date)

Corporate Official)

Subscribed and sworn to before me this
_____ day of _____ 19

(Notary Public in and for County)
of _____, State of
My commission expires:

APPENDIX 4
MANUFACTURING FACILITIES APPROVAL

(Sample Letter Requesting Manufacturing Facilities Approval)

U.S. ARMY TANK-AUTOMOTIVE AND ARMAMENTS COMMAND
Petroleum and Water Business Area
ATTN: AMSTA-TR-D (210)
6501 E. 11 Mile Road
Warren, MI 48397-5000

Dear Sir:

We would like to request consideration for manufacturing facilities approval. To facilitate this approval, we have prepared a production batch of 1,000 gallons minimum of _____ and have assigned internal code number _____ to the following batch of lubricant:

<u>Brand Name</u>	<u>Formula No.</u>	<u>Additive Treatment</u>
--------------------------	---------------------------	----------------------------------

The above lubricant was originally qualified for _____ and assigned qualification number _____.

The address of the manufacturing facility is:

The manufacturing facility official located at this address is:

(Name of Individual)

(Title)

Sincerely,

(Manufacturing Facility Official)