**HPM GREASE CERTIFICATION PROGRAM**

**Application for Formulation Approval and**

**Product Brand Registration**

**Instructions:** Complete this form to request approval of a grease formulation and register one product brand name to the formulation (use Form HPM07 to register additional product brand names to the formulation). Return this completed form to Grease@CenterForQA.com.

Date

Licensee (company name)

NLGI Member? [ ]  Yes [ ]  No [Click here to view NLGI membership list](https://www.nlgi.org/about-us/members/)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Mailing Address (for documents) |  | Billing Address (for invoices) |
|  |  |  | [ ]  Check if same as mailing address |
| Address 1 |       |  |       |
| Address 2 |       |  |       |
| Address 3 |       |  |       |
| Country |       |  |       |
|  |  |  |  |
| Contact Name |       |  |       |
| E-mail |       |  |       |
| Phone |       |  |       |

Licensee’s sample identification (also needed on sample label and Form HPM05)

Select one

[ ]  My company is the Manufacturer. Fill in test data for selected specifications on Pages 3-5.

(Assumes responsibility for ongoing production and consistency of the formulation once approved. Production may occur in manufacturer-owned facilities or through contract manufacturers).

[ ]  My company is not the Manufacturer but is assuming responsibility for the formulation. Fill in data for selected specifications on Pages 3-5.

(Assumes responsibility for ongoing consistency of the formulation once approved).

[ ]  My company is a Rebrander. My supplier’s Sample Approval Code issued by CQA is:

 Do not fill in test data on Pages 3-5. Form HPM04 must be submitted.

(Purchases fully finished product from a licensed supplier manufactured from an approved formulation. Rebranders assume responsibility for maintaining product integrity. No alterations are permitted).

*\* The Sample Approval Code is registered to a specific formulation. Dye color is the only permissible modification. Remaining formulation composition must be identical to the originally approved formulation, recognizing that there may be substitutions of equivalent base oils and commodity chemicals or additives resulting in grease with equivalent performance.*

Licensee is requesting approval for the following performance specifications:

[ ]  Core HPM Specification only

 OR

[ ]  Core HPM Specification plus (select all that apply):

[ ]  Corrosion Resistance Tag [ ]  Water Resistance Tag

[ ]  High Load Tag [ ]  Low Temperature Tag

Licensee is requesting registration of the following (both will be listed on website):

Product Brand Name

Company Brand Name

Licensee is requesting approval to use the HPM certification marks in connection with the product brand name, specifications, and formulations indicated above. Licensee agrees to comply with the terms and conditions of the HPM Grease Certification Program defined in *Form HPM01 Trademark Licensing and Product Certification Procedures* and *Form HPM02 License Agreement for Trademark Use*.

|  |  |
| --- | --- |
| Name |       |
|  | (Name of Authorized Company Representative) |

|  |  |
| --- | --- |
| Signature |  |

|  |  |
| --- | --- |
|  | (Signature of Authorized Company Representative) |

Complete test data for selected HPM Specifications on next page.

**HPM Grease Specifications and Data Submission**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Property** | **Test Conditions** | **Test method** | **Units** | **Min** | **Max** | **\*Licensee's Test Result** |
| **Core HPM Spec** | Cone Penetration of Lubricating Grease | Worked 60 Strokes | ASTM D217 | dmm |  220  |  340  |       |
| Cone Penetration of Lubricating Grease  | Prolonged worked penetration (Δ100k) | ASTM D217 | dmm |  -30  | +30 |       |
| Elastomer compatibility of Lubricating Greases and Fluids [using SRE-NBR 28/P or SRE-NBR 28/PX elastomer per ISO 13226] | 168 hours @ 125 °C | ASTM D4289 | Δ Hardness (Shore A points) | -15 | +2 |       |
|  |
| Δ Volume percent | -5 | +30 |       |  |
|  |
| Oxidation Stability of Lubricating Greases by the Oxygen Pressure Vessel Method | Pressure drop after 100hrs @ 100 °C | ASTM D942 | kPa(psi) |   | 35(5.1) |        |  |
|  |
| Determining the Water Washout Characteristics of Lubricating Greases | 60 minutes @ 79 °C | ASTM D1264 | wt% |   | 10 |        |  |
|  |
| Low Temperature Torque of Ball Bearing Grease | -20 °C | ASTM D1478 |   |   |   |  |  |
|  Starting torque |   |   | mNm(g·cm) |   | 1000(10200) |       |  |
|  Running torque @ 60 minutes |   |   | mNm(g·cm) |   | 100(1020) |       |  |
| Oil Separation from Lubricating Grease During Storage | 24 hours @ 25 °C | ASTM D1742 | wt% |   | 5.0 |       |  |
| Oil Separation from Lubricating Grease (Conical Sieve Method) | 30 hours @ 100 °C | ASTM D6184  | wt% |   | 7.0 |       |  |
|  |
| Roll Stability of Lubricating Grease [using 1/2 scale penetration] | 2 hours @ Room Temperature | ASTM D1831 | dmm | -10% | +10% |       |  |
|  |
| Wear Preventive Characteristics of Lubricating Grease (Four-Ball Method) Wear Scar Diameter | 75 °C, 1200 rpm, 60 minutes | ASTM D2266  | mm |   | 0.60 |       |  |
| Measurement of Extreme-Pressure Properties of Lubricating Grease (Four-Ball Method), Weld point | 1770 rpm @ 27 °C | ASTM D2596 | kgf | 250 |   |       |  |
| Determining Corrosion Preventive Properties of Lubricating Greases | 48 hours @ 52 °C | ASTM D1743 | rating | Pass |   |       |  |
| Determination of Corrosion-Preventive Properties of Lubricating Greases Under Dynamic Wet Conditions (Emcor Test) | Distilled Water, 2 bearings | ASTM D6138 | rating |   | 0 , 1 |     ,     |  |
| Detection of Copper Corrosion from Lubricating Grease | 24 hours @ 100 °C | ASTM D4048 | rating |   | 1 B |           |  |
|  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **HPM + WR** | Determining the Water Washout Characteristics of Lubricating Greases | 60 minutes @ 79 °C | ASTM D1264 | wt% |   | 5.0 |        |
| Determining the Resistance of Lubricating Grease to Water Spray | 5 minutes @ 38 °C | ASTM D4049 | wt% |   | 40 |        |
| Roll Stability of Lubricating Grease in Presence of Water [using 1/2 scale penetration] | 2 hours @ Room Temperature | ASTM D8022 | dmm | -15% | +15% |        |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **HPM + CR** | Corrosion-Preventive Properties of Lubricating Greases in Presence of Dilute Synthetic Sea Water Environments |  10% Synthetic seawater (as in ASTM D665) | ASTM D5969 | rating | Pass |   |        |
| Determination of Corrosion-Preventive Properties of Lubricating Greases Under Dynamic Wet Conditions (Emcor Test) |  100% Synthetic seawater(as in ASTM D665) | ASTM D6138 | rating |   | 1 , 2 |     ,      |
| Determination of Corrosion-Preventive Properties of Lubricating Greases Under Dynamic Wet Conditions (Emcor Test) | 0.5 N solution (~ 3% NaCl solution) | ASTM D6138 | rating |   | 2 , 3 |     ,      |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **HPM + LT** | Low Temperature Torque of Ball Bearing Grease | -30 °C | ASTM D1478 |   |   |   |  |
|  Starting torque |   |   | mNm(g·cm) |   | 1000(10200) |       |
|  Running torque @ 60 minutes |   |   | mNm(g·cm) |   | 100(1020) |       |
| Grease Mobility | -20 °C | US Steel | g/min | 10 |   |       |
| Determination of flow pressure of lubricating greases according to Kesternich method | -30 °C | DIN 51805 | mbar |   | 1400 |       |
|  | **Property** | **Test Conditions** | **Test method** | **Units** | **Min** | **Max** | **\*Licensee's Test Result** |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **HPM + HL** | Wear Preventive Characteristics of Lubricating Grease (Four-Ball Method) Wear Scar Diameter | 75 °C, 1200 rpm, 60 minutes | ASTM D2266  | mm |   | 0.50 |        |
| Measurement of Extreme-Pressure Properties of Lubricating Grease (Four-Ball Method), Weld point | 1770 rpm @ 27 °C | ASTM D2596 | kgf | 400 |   |        |
| Determining Extreme Pressure Properties of Lubricating Greases Using a High-Frequency, Linear-Oscillation (SRV) Test Machine  |  (Procedure B at 80 °C) | ASTM D5706 | N | 800 |   |        |
| Fretting Wear Protection by Lubricating Greases | Average of 2 runs, 22 hours @ Room Temperature | ASTM D4170 | mg |   | 5.0 |      \*\* see note |
| Determining Fretting Wear Resistance of Lubricating Greases Under High Hertzian Contact Pressures Using a High-Frequency, Linear-Oscillation (SRV) Test Machine | 50 °C, 100N, 0.300mm, 4 hours | ASTM D7594 | mm |   | 0.500 |        |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|   |   |   |   |   |   |   |   |
| \* Notes regarding Licensee’s test results:a) Test data may be generated from internal or third-party laboratories.b) Testing must be carried out under the conditions specified above.c) Test results must be from the same batch of grease.d) Test results must be within the specification limit. Repeatability and reproducibility will be incorporated when qualification or audit samples are tested by the program administrator. |
| \*\* As of November 2020, submitting D4170 data is optional. After ASTM approves the D4170 revisions, submitting D4170 data will be required. |