GM	WORLDWIDE ENGINEERING STANDARDS	Material Specification	GMW18266

Assembly Aid - Rubber (Diluted)

1 Scope

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose/Material Description. A pre-mixed solution of wetting agent, concentration 5% to 10% by volume to 85% to 90% potable or deionized water. The solution contains no poly-siloxanes (silicone) to avoid oxygen sensor fouling. All solutions are low residue (< 1% matter insoluble in water per ASTM D460) to minimize plugging of small orifices.

1.2 Symbols. Not applicable.

1.3 Applicability. For tubing or hose with a 32 mm or less inside diameter. Interference fit connections between rubber and plastic or metal fittings.

1.4 Remarks.

1.4.1 Assembly aids are solutions or dry films used to temporarily reduce assembly force (friction) between press and interference fit stationary mating elements (e.g., hose to fitting). The term “lubricant” is sometimes used to describe an assembly aid, however, the proper usage for lubricant is to describe fluids or greases as a maintained film between moving surfaces to reduce friction and wear. Tire assembly aids are not covered by this document.

1.4.2 To measure the assembly aid effectiveness in friction reduction on hose and tubing, see GMW14291.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

ASTM D460	ASTM D891	ASTM E70	SAE J1351

2.2 GM Standards/Specifications.

GMW3059	GMW14291

2.3 Additional References. None.

3 Requirements

3.1 Requirements on Delivery.

3.1.1 pH. 20 °C, 9 to 10 using ASTM E70.

3.1.2 Specific Gravity. 20 °C, 1.00 ± 0.02 using ASTM D891, Method A.

3.1.3 Matter Insoluble in Water. Using ASTM D460, < 1% weight.

3.1.4 The lube solution is ready to use without mixing, agitation or dilution.

3.1.5 Odor. The lube solution must have a 1 to 3 rating using the SAE J1351 procedure at 38 °C. Use 50 mL of solution for the test. The odor panel must have suitable user personnel.

3.1.6 Effect on Marking/Identification Labeling of Lubricated Parts. Totally immerse a new marked part surface in lubricant for 72 h at 23 °C ± 3 °C. Immediately after removing the test specimen, wipe across the marked area in a left to right motion with normal pressure using a clean lint-free cloth. Repeat this motion two

© Copyright 2020

Documents
Document Sharing Hub

Copyright General Motors
Provided by IHS Markit under license with General Motors

Full document details: GMW GMW18266 2020

more times. The markings must remain visible and readable with no evidence of dissolving (smear or distortion) from a distance of 30 cm with corrected vision.

3.1.7 Effect on Paint and Metal Surfaces. Using an eye dropper, apply 10 separate drops of lube solution to a current production body painted white test panel. Production painted parts may be tested at the discretion of the engineer whose parts are adjacent to the lube usage location(s). After 24 h at room temperature, wipe the test panel/part with a clean, lint-free cloth. The painted panel/part shall show no evidence of staining, loss of surface finish, softening, peeling or blistering. Metal production part fittings are tested by soaking only the production intent rubber cap, tube or hose in lube solution for 5 h. Assemble to a new, clean mating metal tube, connector, etc., plugging the open assembly ends. Place the assembly in an air circulating oven 24 h at 38 °C. Remove the assembled parts and allow to cool for 15 minutes. Separate the rubber from the metal. No corrosion must appear on the metal.

3.1.8 Compatibility with Rubber. Small parts, < 16 cm long, immerse the entire part in the lube solution. Solution volume will vary depending on the part size. Use just enough to cover the part. After 5 h at 23 °C, remove the part and wait 0.5 h. Part dimensions must be within print limits. For larger parts (> 150 mm long), immerse a 50 mm long section into the lube solution. Use the same small part exposure time and temperature. Fluid exposed part dimensions must be within print limits.

3.2 All materials supplied to this standard must comply with GMW3059, **Restricted and Reportable Substances**, including the requirement to obtain a GM-approved International Material Data System (IMDS) submission.

4 Manufacturing Process

4.1 Application. Spray, dip or soak application methods are appropriate. Production parts soak time must not exceed 8 h from start of initial exposure.

4.2 Storage Stability. The shipped solution shall not exhibit any settling or stratification after 6 months storage at a temperature not to exceed 35 °C. Containers must be free of particulate or foreign matter. Storage time starts on the date the user location received product from the manufacturer.

5 Rules and Regulations

5.1 Legal Regulations. All materials must satisfy applicable laws, rules, regulations and recommendations valid in the country of usage.

5.2 Language. In the event of conflict between the English and domestic language, the English language shall take precedence.

5.3 Inspection and Rejection. All shipments of material or parts under contract or purchase order manufactured to this specification shall be equivalent in every respect to the initial samples approved by Engineering. There shall be no changes in either formulation or manufacturing processes permitted without prior notification and approval by Engineering. Lack of notification by the supplier constitutes grounds for rejection of any shipment. While samples may be taken from incoming shipments and checked for conformance to this specification, the supplier shall accept the responsibility for incoming shipments meeting this specification without dependence upon purchaser's inspection.

The series of tests used to approve each batch of product along with acceptance limits will be agreed upon by the purchaser and seller. The laboratory providing the certificate of analysis must also participate in a proficiency testing program (round robin) that is approved by the Fuels, Fluids, and Lubricants Global Subsystem Leadership Team (GSSLT) or designate. The Fuels, Fluids, and Lubricants GSSLT or designate must receive copies of the proficiency testing reports directly from the test program administrator.

5.4 Initial Source Approval. No shipment shall be made by any supplier until representative initial production samples have been approved by the Fuels, Fluids, and Lubricants Global Subsystem Leadership Team or designees meeting the requirements of this specification.

5.5 Material Safety Data Sheets/Safety Data Sheets (MSDS/SDS). For new product submissions, or when a change in chemical composition of an existing product has occurred, a complete copy of the Material Safety Data Sheet/Safety Data Sheet must be submitted in compliance with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) requirements or other country-specific MSDS/SDS requirements.

© Copyright 2020 General Motors Company All Rights Reserved

Documents
Document Sharing Hub

Copyright General Motors
Provided by IHS Markit under license with General Motors

Full document details: GMW GMW18266 2020