SURFACE VEHICLE INFORMATION REPORT

J2024™ NOV2022

Issued 1993-06
Reaffirmed 2013-05
Revised 2022-11

Superseding J2024 MAY2013

Contaminants for Testing Air Brake Components and Auxiliary Pneumatic Devices - Truck and Bus

RATIONALE

The purpose of this revision is to modify the language/description of the oil used in Section 3. The contaminated oil mixture is currently described in Section 3 as consisting of “11 parts SAE 15W40CD type oil or most current API certified oil (i.e., CJ) to one part SOFTC-2A contaminant.” Since API oil service requirements are constantly being reviewed and updated, it is inevitable that older grades, such as the SAE 15W40CD grade originally listed, will eventually become obsolete and/or unavailable. The revision to this document is to change the oil description in Section 3 as noted above to “SAE 15W40 (current API Diesel C Service Category for four-stroke diesel engines, such as API CK4—current as of 2018)” so that most current and applicable oil grades that become standardized for service will be used in the contaminant mixture, keeping the test relevant for future vehicles. Note that the phrase “such as API CK4—current as of 2018” is added to clarify the current API service category. In conjunction with this change, the revision will also include a change to the oil reference in Section 4 from “SAE 15W40CD-type oil” to “SAE 15W40 (current API Diesel C Service Category for four-stroke diesel engines).”

1. SCOPE

This SAE Information Report establishes a minimum level of uniform recipes for contaminants which may be used when durability testing pneumatic components to obtain additional information on how a device may perform under more true-to-life operating conditions. This type of contamination testing, however, is not meant to replace the type of performance testing described in SAE J1409 and SAE J1410. Durability testing in the presence of contamination will yield results more reflective of actual in-service field conditions and provide an additional evaluation of pneumatic devices.

While the contaminant supply rate and other test criteria of the device being tested must be set by the device manufacturer or user, the items covered in this document will be:

1.1 Formula for contaminated oil to be used as a lubricant when testing air compressors.

1.2 Formula for a contaminant to be used when testing pneumatic system components other than air compressors.

1.3 Other contaminants.

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
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SAE WEB ADDRESS: **http://www.sae.org**

For more information on this standard, visit
https://www.sae.org/standards/content/J2024_202211/

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J1409 Air Brake Valves Test Procedure

SAE J1410 Air Brake Valve - Performance Requirements

SAE HS 806 Oil Filter Test Procedure

2.1.2 U.S. Government Publications

Copies of these documents are available online at https://quicksearch.dla.mil.

NPFC F-F-351c Filters and Filter Elements, Fluid Pressure: Lubricating Oil, Bypass and Full Flow

3. FORMULA FOR CONTAMINATED OIL TO BE USED AS A LUBRICANT WHEN TESTING VEHICLE AIR COMPRESSOR

Contaminated oil mixture consists of 11 parts SAE 15W40 (current API Diesel C Service Category for four-stroke diesel engines, such as API CK4—current as of 2018), to one part SOFTC-2A contaminant. Contaminant SOFTC-2A is available from Powder Technology Inc., P.O. Box 1464, Burnsville, MN 55337.

SOFTC-2A is specified per SAE HS 806. The SAE HS 806 specification references the federal specification F-F-351c formulation procedure.

Ingredients of SOFTC-2A as specified are as follows in Table 1:

Table 1 - SOFTC-2A ingredients

Ingredients	Weight
Carbon black	16% by weight
Ferric oxide	2% by weight
PV resin	4% by weight
Straight mineral oil	78% by weight
	100%

The formulation in Table 1 reflects the use in modern trucks of multiviscosity oil with its additive packages. Also included are rust, abrasive ingredients, and road contaminants which find their way into the engine crankcase by fuel combustion or by air drawn into the engine. The combination can accelerate air compressor wear and can cause carbon build up.