

AEROSPACE
MATERIAL
SPECIFICATION

AMS 1546

Issued 1-1-85
Revised

COMPOUND, CARBON REMOVING, ORTHODICHLOROBENZENE
for Engine Parts

1. SCOPE:

1.1 Form: This specification covers a compound based on orthodichlorobenzene in the form of a liquid.

1.2 Application: Primarily for use, after being heated, in engine overhaul cleaning systems for the removal of carbon. This cleaning compound is not suitable for parts fabricated from titanium or assemblies which incorporate titanium parts.

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications and Aerospace Recommended Practices shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2350 - Standards and Test Methods
AMS 2825 - Material Safety Data Sheets

2.1.2 Aerospace Recommended Practices:

ARP 1755 - Effect of Cleaning Agents on Aircraft Engine Materials,
Stock Loss Test Method

REAFFIRMED

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2.2 ASTM Publications: Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

- ASTM D92 - Flash and Fire Points by Cleveland Open Cup
- ASTM D93 - Flash Point by Pensky-Martens Closed Tester
- ASTM D96 - Water and Sediment in Crude Oils
- ASTM D453 - Tar Acids in Creosote-Coal Tar Solutions
- ASTM D460 - Sampling and Chemical Analysis of Soaps and Soap Products
- ASTM D847 - Acidity of Benzene, Toluene, Xylenes, Solvent Naphthas, and Similar Industrial Aromatic Hydrocarbons
- ASTM D891 - Specific Gravity of Industrial Aromatic Hydrocarbons and Related Materials
- ASTM D1078 - Distillation Range of Volatile Organic Liquids
- ASTM D1240 - Rosin Acids in Fatty Acids
- ASTM D1959 - Iodine Value in Drying Oils and Fatty Acids
- ASTM D1962 - Saponification Value of Drying Oils, Fatty Acids, and Polymerized Fatty Acids
- ASTM D1982 - Titer of Fatty Acids
- ASTM E291 - Chemical Analysis of Caustic Soda and Caustic Potash (Sodium Hydroxide and Potassium Hydroxide)
- ASTM F503 - Preparing Aircraft Cleaning Compounds, Liquid Type, for Storage Stability Testing

2.3 U.S. Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.3.1 Military Standards:

MIL-STD-794 - Parts and Equipment, Procedures for Packaging and Packing of

3. TECHNICAL REQUIREMENTS:

3.1 Material: Shall be composed of a mixture of a suitable solvent, potassium oleate, and inhibitors and coupling agents as required.

3.2 Composition:

Material	By Volume	By Weight
Orthodichlorobenzene, min		53%
Cresylic Acid (100% Acid Basis), min		23%
Potassium Oleate (Anhydrous Basis)		10 - 12%
Water, max	5%	
Inhibitors and Other Materials, max	5%	

3.3 Properties: The individual components and the product shall conform to the following requirements as specified; tests shall be performed on the components and product supplied and in accordance with specified test methods, insofar as practicable:

3.3.1 Orthodichlorobenzene: Shall be uniform in quality, free from contaminants, and shall conform to the following:

3.3.1.1	Distillation Range, 5 - 95% Point	175° - 184°C (347° - 363°F)	ASTM D1078
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3.3.1.2	Specific Gravity, 25/25°C (77°/77°F), min	1.29	ASTM D891
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3.3.1.3	Free Acid as HCl, max	0.01% by wt	ASTM D847
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3.3.1.4	Flash Point, Closed Tester, min	68°C (155°F)	ASTM D93
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3.3.2 Cresylic Acid: Shall be an isomeric mixture of cresols, free of suspended matter, not containing mercaptans and other odor producing substances in quantities which produce obnoxious odors under service conditions, and shall conform to the following:

3.3.2.1 Color: Shall be colorless to a brown-yellow or pink.

3.3.2.2	<u>Distillation Range</u> :	ASTM D1078
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Initial Point, min	180°C (350°F)
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50% Point	200° - 220°C (392° - 428°F)
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90% Point, max	230°C (446°F)
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3.3.2.3	<u>Assay</u> :	ASTM D453
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Tar Acids by Weight, min	95%
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3.3.3 Oleic Acid: Shall be a commercial grade of distilled red oil conforming to the following:

3.3.3.1	Acid Number, min	182	ASTM D460
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3.3.3.2	Saponification Number	197 - 203	ASTM D1962
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3.3.3.3	Iodine Number	80 - 93	ASTM D1959
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3.3.3.4	Titer	6° - 10°C (43° - 50°F)	ASTM D1982
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3.3.3.5	Rosin Content	None	ASTM D1240
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3.3.4 Potassium Hydroxide: Shall be a commercial grade conforming to the following:

3.3.4.1	Potassium Hydroxide, min	83%	ASTM E291
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