



AEROSPACE MATERIAL SPECIFICATION

AMS3420™

REV. G

Issued 1942-03
Revised 2001-01
Reaffirmed 2010-05
Stabilized 2016-02

Superseding AMS3420F

Dehydrating Agent
Silica Gel

RATIONALE

AMS3420G stabilizes this document because it may no longer represent the state of the art and there are other documents that contain similar but not necessarily equivalent requirements.

STABILIZED NOTICE

This document has been declared "Stabilized" by the SAE AMS B Finishes Processes and Fluids Committee and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2016 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER:
Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
<http://www.sae.org>

SAE WEB ADDRESS:

Full document details: SAE AMS3420G

SAE values your input. To provide feedback
on this Technical Report, please visit
<http://www.sae.org/technical/standards/AMS3420G>

Documents

Document Sharing Hub

1. SCOPE:

1.1 Form:

This specification covers silica gel dehydrating agent in the form of a granular powder in either plain or indicator grades.

1.2 Application:

This product has been used typically for corrosion prevention of metals during storage in closed spaces, but usage is not limited to such applications.

1.3 Classification:

Covered by this specification are classified as follows:

Grade D - Large particle size with indicator

Grade E - Medium particle size without indicator

Grade F - Medium particle size with indicator type

2. APPLICABLE DOCUMENTS:

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been canceled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AS167 Chart, Humidity Indicator, Color Comparison

2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM B 214 Sieve Analysis of Granular Metal Powder

3. TECHNICAL REQUIREMENTS:

3.1 Material:

Material shall be non-deliquescent and shall absorb water by physical means and not by chemical combination except for the cobalt chloride in indicator grades.

3.2 Properties:

The product shall conform to the following requirements; tests shall be performed on the product supplied and in accordance with specified test methods:

3.2.1 Composition:

3.2.1.1 Grades D and F shall be silica gel containing not less than 99.6% SiO_2 impregnated with not more than 1.5 pounds (0.68 kg) of anhydrous cobalt chloride (CoCl_2) per 100 pounds (45 kg) of finished material on a dry weight basis determined by test method acceptable to purchaser.

3.2.1.2 Grade E shall be silica gel containing not less than 99.4% SiO_2 on a dry weight basis.

3.2.2 Color: Indicating grades shall have characteristic colors when in equilibrium with the atmosphere and shall closely match the colors shown on AS167 for relative humidities of 0, 20, 40 and 60% at $25^\circ\text{C} \pm 2$ ($77^\circ\text{F} \pm 4$).

3.2.3 Water Content: Shall not exceed 5.75% by weight for Grades D and F, determined in accordance with 4.4.1; no limit is established for Grade E.

3.2.4 Water Vapor Adsorption Capacity: Shall be not lower than shown in Table 1 when in equilibrium with the relative humidities given, determined as in 4.4.2.

TABLE 1 - Water Vapor Adsorption Capacity

Relative Humidity %	Water Vapor Adsorption % by Weight Grades D and F	Water Vapor Adsorption % by Weight Grade E
10	4.3	5.7
20	8.6	10.5
40	18.2	21.5
60	27.7	28.0
80	32.9	31.2

3.2.5 Particle Size: Shall be as shown in Table 2 for the respective grades, determined in accordance with 4.4.3.

TABLE 2 - Particle Size Distribution

Screen	Size Distribution Percent Grade D	Size Distribution Percent Grades E and F
Retained on No. 6 (3.35 mm), maximum	2.0	
Through No. 6 (3.35 mm), Retained on No. 12 (1.70 mm), minimum	55.0	
Through No. 12 (1.70 mm), Retained on No. 18 (1.00 mm), minimum	19.0	
Through No. 18 (1.00 mm), maximum	3.5	
Through No. 20 (850 µm), maximum	0.5	
Retained on 0.530 inch (13.5 mm) opening		0.0
Through 0.530 inch (13.5 mm) opening, retained on No. 80 (180 µm), minimum		96.0
Through No. 80 (180 µm), maximum		4.0

3.2.6 Particle Strength: Shall be as shown in Table 3 for the respective grades, determined in accordance with 4.4.4.