de Havilland Inc.

Material Specification

TITLE:	**SEALING COMPOUND, POLYSULPHIDE RUBBER, ELECTRICAL CONNECTORS AND ELECTRIC SYSTEMS, CHEMICALLY CURED**
SPECIFICATION NUMBER:	**DHMS S 3.05**
ISSUE:	**A**
AMENDMENT:	**3**
DATE:	**June 8, 2000**
PAGE:	**1 of 7**

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REVISION RECORD

Issue	Page	Description and Reason for Change
Original Amd. 1	6	QPL is added to the specification.
Original Amd. 2	6	QPL is updated. Churchill Chemical Corp. is deleted from QPL. Grow Chemical Sealant Corp. is added to the QPL.
Original Amd. 3	6	Class A and Class B are specified in the QPL.
Original Amd. 4	6	The name PRC Canada has changed to Courtaulds Aerospace, with a new address. PR1201Q and PR1201QA (products of PRC Canada) are deleted from the QPL. Chemical CS 3100 is added to the product list of Courtaulds Aerospace. MSDS numbers are added to all products.
A		This is a complete revised issue. Detail changes have not been noted.
A Amd.1	6	QPL: The supplier's address has been changed.
Amd. 2	6	QPL: Reference to Type /2 has been added.
Amd.3	2 to 5	MIL specification number amended.

1 SCOPE

This specification covers the requirements for a two part, chemically cured organic polysulphide liquid polymer for insulating, sealing, reinforcement and corrosion protection of electric connectors, wiring and other electric apparatus.

1.1 Classification

The sealing compound shall be supplied in one of the following types and class.

1.1.1 Type

DHMS S3.05/1 - Low viscosity (100 - 400 poises, initial mixed viscosity)

DHMS S3.05/2 - High viscosity (401-1200 poises, initial mixed viscosity)

1.1.2 Class

"A" shall be a 24 hour cure at 77^{o}F

"B" shall be a 48 hour cure at 77^{o}F

"C" shall be a 72 hour cure at 77^{o}F

1.1.3 Category

"A" - Two component kit

"B" - Premixed, degassed, frozen kit

2 APPLICABLE DOCUMENTS

The following document shall form the specification of the sealant defined herein.

MIL-PRF-8516G - Sealing compound, synthetic rubber, electrical connectors and electric systems, chemically cured.

3 REQUIREMENTS

The sealing compounds noted shall meet all the requirements of MIL-PRF-8516G.

3.0.1 Storage Life - The storage life of the material shall be a minimum of 9 months from the date of manufacture.

4 QUALITY ASSURANCE

4.1 Qualification

4.1.1 A supplier is responsible for the performance of all qualification testing, as specified in **Table 1**. Three lots/batches of material is required for qualification.

4.1.2 A supplier desk qualification shall submit one copy of a report showing actual qualification test data and a sufficient quantity of product for de Havilland evaluation tests.

4.1.3 Upon review of supplier's data and de Havilland tests, the supplier will be advise either of product qualification or reasons for disqualification.

4.1.4 Products that are qualified will be listed in the Qualified Products list of this specification.

4.1.5 No changes in the method of manufacture and/or formulation shall be made without notification and prior written approval of Materials Technology Department of de Havilland Inc.

4.1.6 Re-qualification of the product may be requested by the Purchaser if there are any changes in the method of manufacture and/or formulation.

4.2 Qualification by Similarity

Where a product has been qualified to another similar specification, the supplier may submit the qualification data applicable to this specification for consideration. The similar specification may be a government, company, or other specification where the requirements are similar to this specification.

4.3 Acceptance Tests

4.3.1 Unless otherwise specified in the contract or purchase order, the supplier is responsible for all Batch Acceptance Tests, as specified in **Table 1**, of this specification.

4.3.2 The supplier, performing Batch Acceptance Tests, shall furnish with each lot of product shipped, one copy of the Batch Acceptance Test report, showing actual test data conformance to the acceptance tests specified in **Table 1**. The report will also include the suppliers batch identification.

4.3.3 De Havilland reserves the right to perform any or all of the tests set forth in this specification to ensure that the product continues to meet specification requirements. Any product not meeting the requirements of this specification will be returned to the supplier at the suppliers expense.

Table 1: Qualification and Batch Acceptance Tests

Test	Qualification as per MIL-PRF-8516G	Acceptance as per MIL-PRF-8516G
Material	x	x
Colour	x	
Consistency	x	x
Initial Viscosity	x	x
Application Life	x	x
Non-volatile Content	x	x

Table 1: Qualification and Batch Acceptance Tests

Test	Qualification as per MIL-PRF-8516G	Acceptance as per MIL-PRF-8516G
Set Time	x	x
Shrinkage	x	x
Hardness	x	x
Adhesion	x	x
Fluid Resistance	x	
Low Temperature Flexibility	x	
Corrosion	x	
Hydraulic Stability, Physical	x	
Accelerated Storage	x	
Long-Term Storage	x	
Arc Resistance	x	
Dielectric Strength	x	
Dielectric Constant	x	
Dissipation Factor	x	
Volume Resistivity	x	x
Surface Resistivity	x	x
Insulation Resistance, as received	x	
Insulation Resistance, after thermal shock	x	
Insulation Resistance, after hydrolytic stability	x	
High Potential Resistance	x	
Air Leakage	x	
Overload	x	

4.4 Definitions

4.4.1 Batch is defined as the end product of all the raw materials mixed and/or manufactured at the same time and place. The weight and volume may vary, depending upon the capacity of the manufacturers facilities.

4.4.2 Lot is defined as the total quantity of product in a shipment taken from the same batch.

5 PROCUREMENT DOCUMENTS

Procurement documents shall specify the following:

- Title, Number, Issue and Amendment Number of this specification.
- Manufacturer's Name and Product Identification (Trade Name or Code Number)
- Type or Size of Containers
- Total Quantity

6 PREPARATION FOR DELIVERY

6.1 Packaging and Packing

The coating shall be packaged and packed for shipping in accordance with MIL-PRF-8516G.

6.2 Marking

Each kit shall be legibly marked with the following information:

- DHMS S3.05 plus Type e.g. /1 or /2 and Class e.g, "A", "B", or "C", and Category "A" or "B".
- Manufacturer's Name and Product Identification
- Total Kit Content (Net)
- Date of Manufacture
- Certificate of Compliance Number

7 SHIPPING DOCUMENTATION

Shipping document shall show:

- de Havilland Purchase Order Numbers
- Specification Number
- Number of Containers
- Batch Number
- Total Quantity (Imperial or U.S. measure)
- Batch Acceptance Test Report.

8 HEALTH AND SAFETY DATA

When supplying samples for qualification per **Para.4.1.2**, the supplier shall submit a Material Safety Data Sheet as per the Ontario Occupational Health & Safety Act, Workplace Hazardous Material Information System (WHMIS) Regulations, which complies with the Canada Hazardous Products Act, Controlled Products Regulations.

Materials Technology, de Havilland Inc. must ensure that copies are provided to, and approved by, the Materials Safety Committee, Industrial Hygiene and Safety, de Havilland Inc. before testing the product.

These requirements are prerequisites to inclusion of any product on the Qualified Products List.

Any changes in the formulation of materials require the re-submission of the Material Safety Data Sheet.

QUALIFIED PRODUCTS LIST

MANUFACTURER'S NAME AND ADDRESS	MANUFACTURER'S PRODUCT IDENTIFICATION NO. Type /2, Class B, Category A	MATERIALS SAFETY DATA SHEET NO	PRODUCT QUALIFICATION SHEET NO'S	DATE OF PRODUCT APPROVAL
Flamemaster Corp. Chem Seal Division 11120 Sherman Way P.O. Box 1458 Sun Valley, CA 91353-1458 Ph. (818) 982-1650 Fax (818) 765-5603	Chemseal CS 3100 (medium) part A and part B	2480 2481	PQS #5	February 23, 1995