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Solvent Resistance Test Report

Qualification for: TSO-C167

TRITON Harness

P/N: 497-H



Approval:

Tested by: _____ Date: OCT-27-2016

(LSC Engineering)

Approved by: _____ Date: OCT-27-2016

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PROPRIETARY & CONFINDENTIAL

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1.0 Warnings:

Do not use before reading all warning labels on products.

- **Acetone** is a Class 3 flammable liquid that can cause damage when inhaled, ingested, exposed to the skin and eye, and can aggravate pre-existing medical conditions when exposed to over long periods.

- **Lacquer thinner** is a Class 3 flammable liquid that may be fatal or cause blindness if swallowed. Vapors are harmful and may cause dizziness, visual disturbances, vomiting, irritation of respiratory tract, unconsciousness and death. This material is an eye irritant and may be absorbed through the skin causing irritation and numbness of fingers and arms.

- **Methyl Ethyl Ketone** is a Class 3 flammable liquid that can irritate the skin causing rash or burning feeling on contact. Contact with the eye my cause permeant damage. Exposure can cause dizziness, headache, unconsciousness, nausea, coughing and wheezing.

2.0 Definitions:

- Hardware:

  Any part of the restraint system, other than webbing.

- Laboratory Ambient Conditions:

  18 to 24°C (65 to 75°F) and 45 t0 55% humidity.

- Adjustment Hardware:

  Any hardware designed for adjusting the size of a restraint system to fit the user, including such hardware that may be integral with a buckle, attachment hardware, or retractor.

3.0 Handling Hazard Materials:

3.1 When handling acetone, methyl ethyl ketone, and lacquer thinner follow the mandatory PPE:

- Wear long-sleeved shirts and full-length trousers.
- Use properly maintained and properly fitted NIOSH approved respirator for organic solvent vapors. Dust mask does NOT provide protection.
- Nitrile gloves
- Eye protection such as safety glasses, spectacles, goggles or face shield.
- Use only with adequate ventilation to prevent build-up of vapors
- Do not use these products near any source of heat or open flame.

4.0 Solvents and Test Equipment:

Solvents:

- Acetone
- Lacquer Thinner
- Methyl Ethyl Ketone







Equipment:

- 3mm Wire Mesh
- Environmental Chamber




5.0 Test Objective:

Nonmetallic hardware parts of TRITON harness (497-H), when subjected to the test procedure in section 6.0, must not deteriorate to cause the assembly to operate improperly.

6.0 Test Procedure:

6.1 Allow non-metallic hardware components (#721-03, #723-03, #H001) to be stabilized under laboratory ambient conditions for 6 to 12 hours.

6.2 Expose the samples to solvent vapors for at least 6h at 21 to 27°C (70 to 80°F).

6.3 Use separate assemblies for exposure to each of the following solvents.

- Lacquer Thinner
- Methyl Ethyl Ketone
- Acetone

6.4 Place Assemblies 25mm ± 12mm (1.0in ± 0.5in) above container solvent level. Solvent depth to be at least 12mm (0.5in).

6.5 Suspend items on 3mm (0.125in) wire mesh such that vapor has access to all components. Cover container with flat, vented plate.

6.6 Remove items after 6h, visually inspect, and begin functional testing.

6.7 Inspect items for any signs of deterioration or deformity. Fully latch and unlatch the shuttle lock buckle mechanism and safety buckle assembly at least 10 times.

6.8 Record results as PASS or FAIL.

6.9 Repeat each test 3 times for each hardware component.

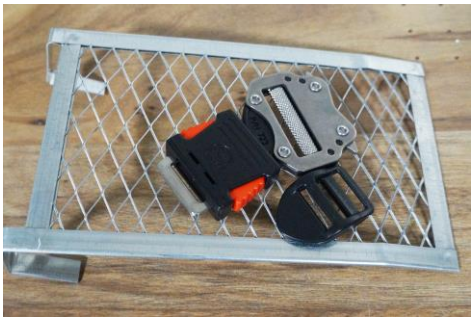
7.0 Results:

Part Number	Description	Material	Acetone	Methyl Ethyl Ketone	Lacquer Thinner
721-03	Shuttle Lock Buckle Housing	FR Zytel	PASS	PASS	PASS
723-03	Safety Buckle Center Insert	Delrin	PASS	PASS	PASS
H001	SUPERLOC 1” BLK	Acetal	PASS	PASS	PASS

BEFORE: ACETONE



AFTER: NO DAMAGE



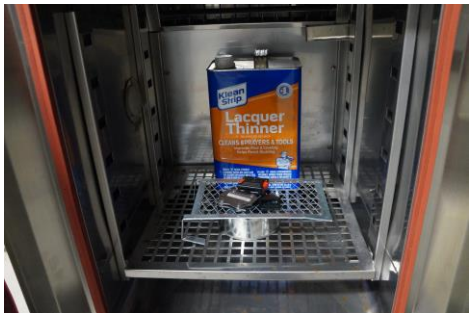
BEFORE: METHYL ETHYL KETONE



AFTER: NO DAMAGE



BEFORE: LACQUER THINNER



AFTER: NO DAMAGE



8.0 Storage of Hazard Materials:



Do not store or dispose of hazardous materials before reading labels on product.

- Store in a vented flammable liquid storage cabinet.
- Keep container tightly closed when not in use.
- Storage cabinet must be located away from sources of heat such as welders, burners, ovens and sunlight.
- Do not store near open flames or at elevated temperatures.
- Must have appropriate fire extinguishers available near any storage area.
- Methyl Ethyl Ketone shall be stored in a cool, well ventilated area with electrically bond and ground containers. Ground clips must contact bare metal.
- Dispose of empty container according to all regulations.
- Do not reuse container.

9.0 References:

- SAE AS8043 B, *Restraint Systems for Civil Aircraft*, Paragraph 8.2.2.

- FAA TSO-C167, Paragraph 6.2.2 (Nonmetallic hardware) Solvent Resistance: Replace paragraph with Nonmetallic hardware parts of a human harness, when subjected to the conditions in Paragraph 9.2.2, must not deteriorate to cause the assembly to operate improperly.