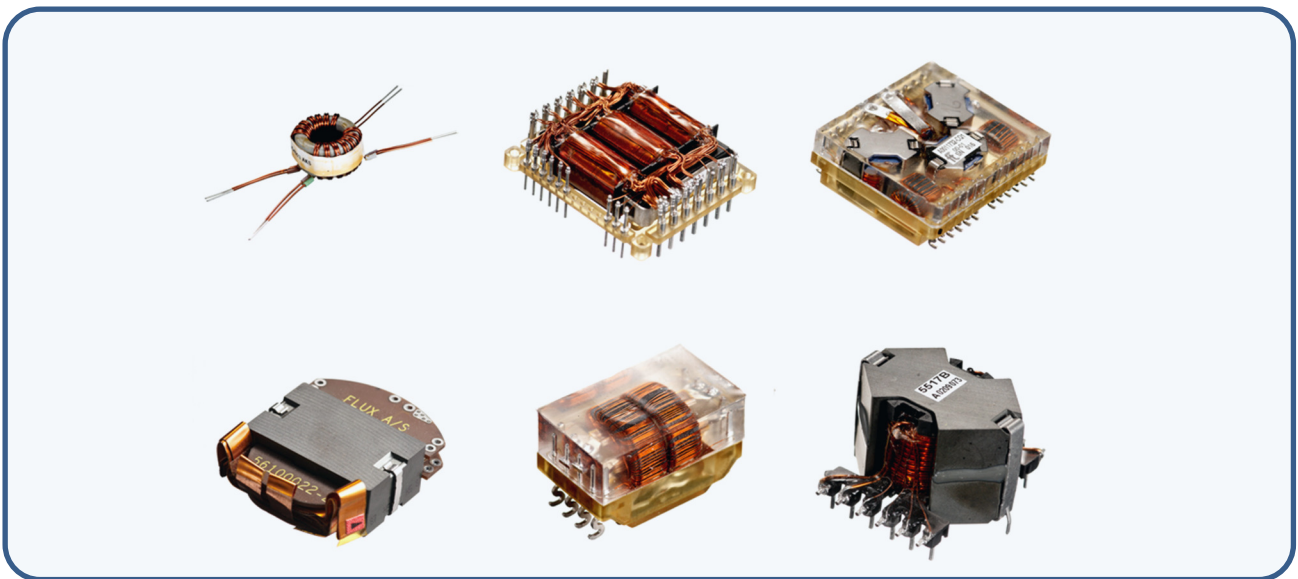



Declared Materials List: Flux ESCC domain

Document: 08699003
Date: 26th August 2022

Issue: 2
Page: 1 of 24

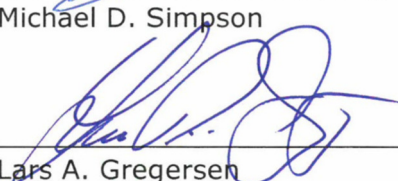


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DOCUMENT CHANGE LOG

Change No.	Date	Initiator	Pages Affected	Short Description of Change
2	26/08/22	MS		Section 5. Addition of new qualification references and materials

TABLE OF CONTENTS

1. INTRODUCTION	4
1.1 Scope	4
2. APPLICABLE DOCUMENTS	4
2.1 Reference Documents	4
2.2 Generic Documents	4
3. DEFINITIONS AND ABBREVIATIONS.....	5
3.1 Definitions.....	5
3.2 Abbreviations.....	5
4. MATERIALS	6
4.1 Groups for Materials List	6
4.2 DML Contents	6
4.3 Environmental Codes.....	7
4.4 Size codes.....	7
4.5 Outgassing	7
5. DECLARED MATERIALS LIST	8

1. INTRODUCTION

1.1 Scope

This document lists materials used by Flux A/S for the manufacture of magnetic components for space applications.

The qualification and use of these materials on space applications originate with Alcatel Space Denmark and have been used in excess of 100 space programs over a 25 year period.

In order to be incorporated within DMLs for higher level assemblies, this DML has been prepared in line with the requirements of ECSS-Q-ST-70C.

2. APPLICABLE DOCUMENTS

Unless stated otherwise, all documents will be used at their latest revision.

2.1 Reference Documents

Ref.	Document	Title
RD1	ECSS-Q-ST-60	Electrical Electronic and Electromechanical (EEE) Components
RD2	ECSS-Q-ST-70	Materials, mechanical parts and processes
RD3	ECSS-Q-ST-70-08	Manual soldering of high-reliability electrical connections
RD4	ECSS-Q-ST-70-71	Guidelines for space material selection
RD5	ECSS-P-001B	Glossary of terms
RD6	ESCC 3201	Generic Specification: Coils, RF and Power, Fixed (Inductors and Transformers)
RD7	ESCC3201/013	Detail Specification: Customised Magnetics
RD8	FT08700000	FLUX QMS

2.2 Generic Documents

Ref.	Document	Title
GD1	FT08699002	Process Identification Document
GD2	FT08699004	Declared Processes List

3. DEFINITIONS AND ABBREVIATIONS

3.1 Definitions

For the purpose of this document, the terms and definitions given in ECSS-P-001B apply.

3.2 Abbreviations

Abbreviation	Meaning
AKA	Alcatel Kirk Aerospace document number
ASD	Alcatel Space Denmark document number
CORR	Corrosion
CVCM	Collected Volatile Condensable Mass (See VCM)
DML	Declared Materials List
DPL	Declared Processes List
FLAM	Flammability
FT	Flux A/S document number
N/A	Not Applicable
OFFG	Offgassing
OUTG	Outgassing
PS	Procurement Specification number
RFA	Request for approval
RML	Recovered Mass Loss
SCC	Stress Corrosion Cracking
TBA	To Be Advised
TBD	To Be Defined
TML	Total Mass Loss
VCM	Volatile Condensable Mass

4. MATERIALS

For further assistance and clarification refer to Annex B of ECSS-Q-ST-70C.

4.1 Groups for Materials List

Group	Description
01	Aluminium and aluminium alloys
02	Copper and copper alloys
03	Nickel and nickel alloys
04	Titanium and titanium alloys
05	Steels
06	Stainless steels
07	Filler metals: welding, brazing soldering
08	Miscellaneous metallic materials
09	Optical materials
10	Adhesives, coatings, varnishes
11	Adhesive tapes
12	Paints and inks
13	Lubricants
14	Potting compounds, sealants, foams
15	Reinforced plastics (including PCBs)
16	Rubbers and elastomers
17	Thermoplastics (e.g. non-adhesive tapes and foils [MLI])
18	Thermoset plastics (including PCBs)
19	Material aspects of wires and cables
20	Miscellaneous non-metallic materials
21	Other

4.2 DML Contents

Column No	Purpose
1	Item number (applicable to equipment manufacturer level only)
2	Commercial identification or standardized designation
3	Chemical nature and product type
4	Procurement information
5	Processing parameters
6	Use and location
7 ⁽¹⁾	Environmental code
8	Size code
9.1	Validation references
9.2	Justification references
9.3 ⁽¹⁾	Prime approval
10 ⁽¹⁾	Customer approval status code and comments

Note 1—This information is not available to Flux A/S.

4.3 Environmental Codes

This information is not available to Flux A/S. Should a project specific DML be required, this information is To Be Advised (TBA) by the customer.

Radiation/UV/ATOX (R) ^a		Ambience (A)	Temperature (T) ^{b,c}
G: Geostationary	S: Outside shadow	V: Vacuum	1: 0 K to 100 K
L: Low orbit	L: Outside light	H: Hermetic	2: 101 K to 200 K
B: Radiation belt		M: Manned	3: 201 K to 300 K
I: Interplanetary		E: Elevated pressure	
P: Planetary			
^a For all materials, a letter is selected from the left-hand column. For materials on the surface of the spacecraft, the letter "L" or "S" is added.			
^b Thermal cycling to be indicated by two values, e.g. 3/5.			
^c "RT" (room temperature) can be accepted as a code between 283 K (10 °C) and 313 K (40 °C).			
NOTE: The materials that are at a boundary between environments are described by two sets of codes.			

4.4 Size codes

Size Code	Value
0	$0 < A \text{ or } V \text{ or } M \leq 1$
1	$1 < A \text{ or } V \text{ or } M \leq 10$
2	$10 < A \text{ or } V \text{ or } M \leq 100$
3	$100 < A \text{ or } V \text{ or } M \leq 1\ 000$
4	...
where	A is the area, in cm ² V is the volume, in cm ³ M is the mass, in g

4.5 Outgassing

On composite materials the exact outgassing figures may vary slightly as the ratio of material change with size.

5. DECLARED MATERIALS LIST

1 Item No.	2 Commercial ID	3 Chemical Nature	4 Procurement Details	5 Processing	6 Use and Location	7 Environmental Code	8 Size Code	9.1 Validation		9.2 Justification	9.3 Prime Approval	10 Customer Approval
01.001 Aluminium Block Fixture	None	AA6082-T6/T651	1) Christian Olrik 2) 04152008	Machined Item	1) TBA 2) TBA 3) Heatsinking and Clamping of ferrite core	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT08690244 FT08690257 FT08690380	OUTG: TML: 0.11% RML: 0.04% VCM: 0.00% INTA: FC9819	Used in Flux qualification		
01.002 Alodine - Aluminium Alloy	None	Al97% Mg3% AA5754	1) Henkel 04152009	Machined Item	1) TBA 2) TBA 3) Heatsinking and Clamping of ferrite core	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2			Heritage - used on previous applications		
01.003 Aluminium Block Fixture	None	Aw6082-T6/T651	1) Christian Olrik	Machined Item	1) TBA 2) TBA 3) Heatsinking and Clamping of ferrite core	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2			Heritage - used on previous applications		
01.004 Hard Anodized Aluminium		Hard Anodized Aluminum Mil-A-8625 Type III class 1								Heritage - used on previous applications		
02.001 Copper Foil Electrolytical	None	99,9 % Cu - 0,05% O; Chemical etching	1) Misc Suppliers 2) PS101-01	Electrolytical pretinning acc. to ASD/PROC/94072	1) TBA 2) TBA 3) Shield in transformer, heat sink.	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011		Heritage - used on previous applications		
02.002 Copper Foil Electrolytical	None	99,9 % Cu - 0,05% O; Chemical etching or laser cut	1) Misc Suppliers 2) According to drawing	-	1) TBA 2) TBA 3) Shield in transformer, heat sink.	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT08690140 FT08690184 FT08690257 FT08690380		ECSS-Q-70-71 C.2.1 Used in Flux qualification		
02.003 Beryllium Copper	None	C17200 Electrodeposit with 3µm Sn60Pb40 by manufacturer on 2µm Ni barrier	1) Mekoprint 2) PS101-13	Etching, bending and tinning by manufacturer Pretinning acc. to ASD/PROC/94072	1) TBA 2) TBA 3) Clamps for transformers.	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	ASD/REPO/99011 + ASD/REPO/03012		ECSS-Q-70-71 C.2.2		
02.004 Beryllium Copper	None	C17200 Electrodeposit with 5µm Sn60Pb40 by manufacturer on 2µm Ni barrier	1) Mekoprint 2) PS101-13	Etching, bending and tinning by manufacturer Pretinning acc. to ASD/PROC/94072	1) TBA 2) TBA 3) Clamps for transformers.	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	ASD/REPO/99011 + ASD/REPO/03012		ECSS-Q-70-71 C.2.2		

1	2	3	4	5	6	7	8	9.1		9.2	9.3	10
Item No.	Commercial ID	Chemical Nature	Procurement Details	Processing	Use and Location	Environmental Code	Size Code	Validation		Justification	Prime Approval	Customer Approval
02.005 BRASS MS58	None	BRASS MS58. Plated with 2,5 mm Ni and 5 mm Sn90Pb10 by manufacturer	1) PreciDip (CH) FR-TECH (DK) 2) PS101-04	Purchased mechanical items	1) TBA 2) TBA 3) Pins for integrated magnetics, UU Core Magnetics and AKA-RM coilformers	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 + ASD/REPO/03012 FT08690074 FT08690184 FT08690244 FT08690380		Used in Flux qualification		
02.006 Cu C12200 (UNS)	None	C12200 Copper Electrodeposit with 8µm Sn60Pb40 by manufacturer on 2µm Ni barrier	1) Mekoprint 2)	Etching and tinning by manufacturer	1) TBA 2) TBA 3) Pins for SMD carriers	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 ASD/REPO/03012 FT08690074 FT08690184 FT08690257 FT08690380		Used in Flux qualification		
02.007 Tin Bronze	None	CuSn6 CuSn3	1) Norwe 2) PS301-11		1) TBA 2) TBA 3) Pins for carriers	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	ASD/REPO/99011 FT08690184 FT08690257 FT08690380		Used in Flux qualification		
02.008 Tin Bronze	None	CuSn6/CuSn3 Tin plated	1) Epcos 2) PS202-07		1) TBA 2) TBA 3) Pins for EPCOS coilformers	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	Heritage - used on previous applications		Heritage - used on previous applications		
02.009 Copper Foil	None		1) Covi		1) TBA 2) TBA 3) Winding	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT08690184 FT08690380		Used in Flux qualification		
02.010 Cu_ETP	CU_ETP		1) 2)PS04164001-1	Sn60Pb40: 5-10□m	1) TBA 2) TBA 3) Pins	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT08690244 FT08690380 FT08690269		Used in Flux qualification		
02.011 Brass	German Silver/Nickel Silver	CuNi18Zn20	FT04154002-1	Sn60Pb40: 5-10□m	1) TBA 2) TBA 3) Pins	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT08690184		Used in Flux qualification		
02.012 Copper Foil	E-Cu58/Cu57 (F20-Soft) ETP	E-Cu58/Cu57 (F20-Soft)	1) Various 2)Various		1) TBA 2) TBA 3) Winding	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1			ECSS-Q-70-71 C.2.1 Used in Flux qualification		
05.007 Chromium Nickel Steel	None	Chromium Nickel Steel(C<1%, Si>1%, Mn>2%	1) Arvid Nilsson A/S2) 041520012	None	1) TBA2) TBA3) Screws and Washers	1) TBA2) TBA3) TBA	1) =>A12) =>V13) W1	FT08690257FT08690380		Used in Flux qualification		

1	2	3	4	5	6	7	8	9.1		9.2	9.3	10
Item No.	Commercial ID	Chemical Nature	Procurement Details	Processing	Use and Location	Environmental Code	Size Code	Validation		Justification	Prime Approval	Customer Approval
06.002 Clamps for RM 4 Low profile ferrite cores without ground terminal	None	STAINLESS SPRING STEEL	1) EPCOS 2) PS301-09	None	1) TBA 2) TBA 3) Clamps for RM ferrite cores	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	ASD/REPO/99011 FT08690074 FT08690184 FT08690380 SCC Code A		Used in Flux qualification		
06.003 Clamps for EFD ferrite cores	None	STAINLESS SPRING STEEL	1) FERROXCUBE 2) FT04152001	None	1) TBA 2) TBA 3) Clamps for EFD ferrite cores	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT08690074 SCC Code A		Heritage - used on previous applications		
06.004 Clamps with Ground Clamps for RM Ferrite Cores	None	STAINLESS SPRING STEEL, AISI 301	1) EPCOS + Surtech 2) PS301-09 + 04152002	Removal of pure tin, Electrodeposit of 5 µ Sn60Pb40 on Ni barrier according to 04152002	1) TBA 2) TBA 3) Clamps for RM ferrite cores	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT08690064, FT08690074 FT08690123 FT08690140 FT08690380 SCC Code A		Heritage - used on previous applications		
06.005 Clamps for Planar ferrite cores	None	STAINLESS SPRING STEEL, AISI 301	1) EPCOS 2) 041520010	None	1) TBA 2) TBA 3) Clamps for Planar ferrite cores	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT08690257 FT08690380		Used in Flux qualification		
06.006 Clamps for Planar ferrite cores	None	STAINLESS SPRING STEEL, AISI 301	1) Ferroxcube 2) 041520011	None	1) TBA 2) TBA 3) Clamps for RM ferrite cores	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT08690257 FT08690380		Used in Flux qualification		
06.008 Clamps for EFD ferrite cores	None	STAINLESS SPRING STEEL	1) EPCOS 2) PS301-10	None	1) TBA 2) TBA 3) Clamps for EFD ferrite cores	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 FT08690184 FT08690244 FT08690380 SCC Code A		Used in Flux qualification		
06.009 Clamps with ground terminals for RM ferrite cores	None	STAINLESS SPRING STEEL, AISI 301	1) EPCOS 2) PS301-09	Plated with 3 mm Ni and 5 mm Ni by manufacturer. Pretinned 9 mm Sn60Pb40 by manufacturer DIN:X12 Cr Ni 17 7, Wk. 1.4310 (C<.15%, Si<1.0%, Mn<2.0%, P<.045%, S<.03% Cr16.0-18.0%, Ni6.0-8.0%)	1) TBA 2) TBA 3) Clamps for RM ferrite cores	1) =>A1 2) =>V1 3) W0	1) =>A1 2) =>V1 3) W0	ASD/REPO/99011 FT08690074 SCC Code A		Heritage - used on previous applications		

1	2	3	4	5	6	7	8	9.1	9.2	9.3	10
Item No.	Commercial ID	Chemical Nature	Procurement Details	Processing	Use and Location	Environmental Code	Size Code	Validation	Justification	Prime Approval	Customer Approval
06.010 Stainless Steel Fixing items	None	STAINLESS SPRING STEEL, AISI 301	1) Various 2) Various	As Required	1) TBA 2) TBA 3) Fixation	1) =>A1 2) =>V1 3) W0	1) =>A1 2) =>V1 3) W0	FT08690257 FT08690269 FT08690380	Used in Flux qualification		
06.011 Stainless Steel Fixing items	None	STAINLESS SPRING STEEL, A286	1) Various 2) Various	As Required	1) TBA 2) TBA 3) Fixation	1) =>A1 2) =>V1 3) W0	1) =>A1 2) =>V1 3) W0	FT 08699051	Used in ESA qualification ESCC-Q-70-71 (A6)		
07.001 Solder Wire	Tin Solder: Sn63 Pb37	Sn63Pb37	1) Bleiwek Goslar 2) PS FT04131001-*	AKA/PROC/94072 and PSS-017-080	1) TBA 2) TBA 3) Soldering of components and wires	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/03012, FT08690074, FT08690088, FT08690123, FT08690141 FT08690184 FT08690244 FT08690257 FT08690269 FT08690380	ECSS-Q-70-71 C.7.2 Used in Flux qualification		
07.002 Solder Bar	Tin Solder: Sn60 Pb40	Sn60Pb40	1) Bleiwek Goslar 2) PS FT04131001-*	None	1) TBA 2) TBA 3) Pretinning	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/03012, FT08690074, FT08690088, FT08690123, FT08690141 FT08690184 FT08690244 FT08690257 FT08690269 FT08690380	ECSS-Q-70-71 C.7.1 Used in Flux qualification		
07.003 High Temperature Solder	Tin Solder: Sn96 Ag4	Sn96Ag4	1) Bleiwek Goslar 2) TBD	Thermal Transfer	1) TBA 2) TBA 3) Soldering of components and wires	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT08690184 FT08690257 FT08690380	ECSS-Q-70-71 Used in Flux qualification		
08.001 RM CORE	None	Ferro Magnetic Oxide	1) EPCOS 2) PS203-01	None	1) TBA 2) TBA 3) Transformers and coils	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	ASD/REPO/99011 FT08690074 FT08690123 FT08690184	Used in Flux qualification		
08.002 Toroid Core, MPP	MPP Core/Hi Flux	Molypermalloy Powder, Hiflux NiFe Powder Graded into 2% bands	1) Magnetics 2) FT 04174001	Cleaned with IPA	1) TBA 2) TBA 3) Transformers and coils	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ESE-RPT-4316-043-INTA-11 FT08690184 FT08690244 FT08690380	QUITG: TML: 0.031% RML: 0.013% VCM: 0.003%	Used in Flux qualification	
08.003 Toroid Core	None	Ferro Magnetic Oxide	1) EPCOS 2) PS203-10	Impregnated by supplier	1) TBA 2) TBA 3) Transformers and coils	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 FT08690074 FT08690140 FT08690184	Used in Flux qualification		

1	2	3	4	5	6	7	8	9.1		9.2	9.3	10
Item No.	Commercial ID	Chemical Nature	Procurement Details	Processing	Use and Location	Environmental Code	Size Code	Validation		Justification	Prime Approval	Customer Approval
08.004 Pot Core	None	Ferro Magnetic Oxide	1) EPCOS 2) PS203-08	None	1) TBA 2) TBA 3) Transformers and coils	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	ASD/REPO/99011		Heritage - used on previous applications		
08.005 Amobead	None	Amorphous Magn Core	1) Toshiba metal Devision 2) FT 04173032	Bonded to PCB with scotch-weld 2216	1) TBA 2) TBA 3) Ferrite for switching noise supression	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011,	OUTG: TML: 0.02% RML: 0.01% VCM: 0.00% INTA FC-0228	Heritage - used on previous applications		
08.006 Arnold Toroid Core	None	Molypermalloy Powder	1) Arnold 2) PS203-07	Impregnated by supplier	1) TBA 2) TBA 3) Cores for transformers and inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	Customer Spec		Heritage - used on previous applications		
08.007 Arnold Toroid Core	None	Tape Wound Core	1) Arnold 2) PS203-16	Impregnated by supplier	1) TBA 2) TBA 3) Cores for transformers and inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	Customer Spec		Heritage - used on previous applications		
08.008 Toroid Core	None	Ferro Magnetic Oxide	1) FERROXCUBE 2) PS203-12	Impregnated by supplier	1) TBA 2) TBA 3) Transformers and coils	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 FT08690184 FT08690380		Used in Flux qualification		
08.009 Double Aperture Core	None	Ferro Magnetic Oxide	1) EPCOS 2) PS203-14	None	1) TBA 2) TBA 3) Transformers and coils	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT08690184 FT08690380		Used in Flux qualification		
08.010 RM Core with Nylon bushing	None	Ferro Magnetic Oxide	1) EPCOS 2) PS203-15	None	1) TBA 2) TBA 3) Transformers and coils	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	Customer Spec	OUTG: TML: 0.00% RML: - VCM: 0.00% INTA FC-9511	Heritage - used on previous applications		
08.011 Toroid Core	None	Iron Powder	1) FERROXCUBE 2) PS203-12	Impregnated by supplier	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011		Heritage - used on previous applications		
08.012 Toroid Core Grey Painted	None	Ferrite Core Polyester or Nylon Coated	1) Magnetics 2) PS203-18	Cleaned with IPA	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ESE-RPT-4316-043-INTA-11 FT08690244 FT08690279	OUTG: TML: 0.016% RML: 0.014% VCM: 0.003%	Used in Flux A/S qualification		

1	2	3	4	5	6	7	8	9.1		9.2	9.3	10
Item No.	Commercial ID	Chemical Nature	Procurement Details	Processing	Use and Location	Environmental Code	Size Code	Validation		Justification	Prime Approval	Customer Approval
08.013 Toroid Core Parylene Coated	None	Ferrite Core Parylene Coated	1) Magnetics 2) 04173004-1	Cleaned with IPA	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ESE-RPT-4316-043- INTA-11 FT086902184 FT08690380	OUTG: TML: 0.011% RML: 0.010% VCM: 0.005%	Used in Flux qualification		
08.014 Toroid Core	None	Amorphous Magnetic Material	1) Toshiba(US), BFI Ibexsa(DK) 2) PS203-21	None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	Customer Spec		Heritage - used on previous applications		
08.015 Core	3F3	MnO (25%), ZnO(5%), Fe ₂ O ₃ (70%)	1) FERROXCUBE 2) 04152002-1	None	1) TBA 2) TBA 3) Transformers and Coils	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT08690074 FT08690140 FT08690184 FT08690257 FT08690380		Used in Flux qualification		
08.016 Nanocrystalline	None	Nanocrystalline Vitrperm 500F	1) VACUUMSCHMELTZE 2) 04172001	Impregnated by supplier	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT08690184		Used in Flux qualification		
08.017 Toroid Core	None	Toroid Core Strip Wound	1) Magnetics 2) 04173006	Impregnated by supplier	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT08690184		Used in Flux qualification		
08.018 RM Core	PC90 & PC95	Ferro Magnetic Oxide	1) TDK 2) 04173008, 04173009	None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT08690184 FT08690380		Used in Flux qualification		
08.019 Ferrite Planar Core	Trademarks: N97, N95 & N51	Manganese Zinc Ferrite MnO (25%), ZnO(5%), Fe ₂ O ₃ (70%)	1) EPCOS 2) 04173014	None	1) TBA 2) TBA 3) Planar transformer and inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1-W3	Pending		Heritage - used on previous applications		
08.020 Ferrite Planar Core	Trademarks: 3F3	MnO (25%), ZnO(5%), Fe ₂ O ₃ (70%)	1) Ferroxcube 2) 04173015	None	1) TBA 2) TBA 3) Planar transformer and inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1-W3	Pending		Heritage - used on previous applications		
08.021 Ferrite Core Ferroxcube 3C96	Ferroxcube 3C96	MnO (23%), ZnO(5%), Fe ₂ O ₃ (71%)	1) Ferroxcube 2) TBA	None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT08690184 FT08690380	OUTG: TML: 0.005% RML: 0.003% VCM: 0.000%	Used in Flux qualification		

1	2	3	4	5	6	7	8	9.1		9.2	9.3	10
Item No.	Commercial ID	Chemical Nature	Procurement Details	Processing	Use and Location	Environmental Code	Size Code	Validation		Justification	Prime Approval	Customer Approval
08.022 EFD Core	None	Ferro Magnetic Oxide	1) EPCOS 2) PS203-13	None	1) TBA 2) TBA 3) Transformers and coils	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	ASD/REPO/99011 FT08690074 FT08690184 FT08690380		Used in Flux qualification		
08.023 Toroid Core HIFLUX	None	Molypermalloy Powder, Hiflux NiFe Powder Graded into 2% bands	1) Magnetics 2) FT 04173028	Cleaned with IPA	1) TBA 2) TBA 3) Transformers and coils	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	ESE-RPT-4316-043-INTA-11 FT08690244 FT08690380	OUTG: TML: 0.083% RML: 0.033% VCM: 0.001%	Used in Flux qualification		
08.024 RM and Integrated Magnetics Core	None	Ferro Magnetic Oxide	1) tdk 2) FT 04173030	None	1) TBA 2) TBA 3) IM, UUCM, RM and PQ cores transformers and coils	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	ASD/REPO/99011, ASD/REPO/03012 FT08690244 FT08690380		Used in Flux qualification		
08.025 Ferrite Core Ferroxcube 3C92	Ferroxcube 3C92	MnO (20%), ZnO(9%), FE ₂ O ₃ (71%)		None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT08690184 FT08690380	OUTG: TML: 0.005% RML: 0.003% VCM: 0.000%	Used in Flux qualification		
08.026 Ferrite Core Ferroxcube 3C95	Ferroxcube 3C95	MnO (19%), ZnO(10%), FE ₂ O ₃ (71%)		None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT08690257 FT08690380	OUTG: TML: 0.005% RML: 0.003% VCM: 0.000%	Used in Flux qualification		
08.027 Ferrite Bead Ferroxcube 4A15	Ferroxcube 4A15	Ni ₂ O (12%), ZnO(22%), FE ₂ O ₃ (66%)		None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT08690184	OUTG: TML: 0.15% RML: 0.15% VCM: 0.00% DMAV: 12047	Used in Flux qualification		
08.028 EFD Core 3F3	Ferroxcube 3F3	Ferroxcube 3F3	1) Ferroxcube 2) PS 04173031	None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	Customer Spec		Heritage - used on previous applications		
08.029 Ferrite Core	Trademarks: N87	Manganese Zinc Ferrite MnO (25%), ZnO(5%), FE ₂ O ₃ (70%)	1) EPCOS 2)	None	1) TBA 2) TBA 3) Transformer and inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1-W3	FT08690184 FT08690257 FT08690380		Used in Flux qualification		

1	2	3	4	5	6	7	8	9.1		9.2	9.3	10
Item No.	Commercial ID	Chemical Nature	Procurement Details	Processing	Use and Location	Environmental Code	Size Code	Validation		Justification	Prime Approval	Customer Approval
08.030 Ferrite Core Ferroxcube 3C90	Ferroxcube 3C90	MnO (20%), ZnO(9%), FE ₂ O ₃ (71%)	1) EPCOS 2)	None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT08690184	OUTG: TML: 0.005% RML: 0.003% VCM: 0.000%	Used in Flux qualification		
08.031 Power Ferrite MN92	MN92	MnZn	1) EPCOS / Magnetics 2)	Machined Item	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT0869257 FT08690380	-	Used in Flux qualification		
08.032 Ferrite Core Ferroxcube 3F35	3F35	MnO ZnO FE ₂ O ₃	1) Ferroxcube 2) PS 203-22	None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2		-	Used in Flux qualification		
08.033 Ferrite Core Ferroxcube 3C94	3C94	MnO ZnO FE ₂ O ₃	1) Ferroxcube 2)	None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT 08690279	-	Used in Flux qualification		
08.034 Ferrite Core Ferroxcube 3C36	3C36			None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT 08690279	-	Used in Flux qualification		
08.035 Ferrite Core P46	P46			None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	Pending	-	Used in Flux qualification		
08.036 Ferrite Core DM Type 11 Parylene	Dexter Magnetics Type 11		1) Dexter Magnetics 2)	None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	Based on similar product	-	Flux verification testing		
08.037 Ferrite Core Ferroxcube 3D3	3D3	MnO ZnO FE ₂ O ₃	1) Ferroxcube 2)	None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	Based on similar product	-	Flux verification testing		
08.038 Ferrite Core Ferroxcube N49	N49	MnO ZnO FE ₂ O ₃	1) Ferroxcube 2)	None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	Based on similar product	-	Flux verification testing		
08.039 Ferrite Core Hitachi Metals	Metglas Alloy	Metglas Alloy	1) Hitachi Metals 2) 04172002 & 04172003	None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT08690380	-	Flux Qualification		

1	2	3	4	5	6	7	8	9.1		9.2	9.3	10
Item No.	Commercial ID	Chemical Nature	Procurement Details	Processing	Use and Location	Environmental Code	Size Code	Validation		Justification	Prime Approval	Customer Approval
08.040 Ferrite Core Micro Metals	Micro Metals	GX Alloy	1) Micro Metals 2)	None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	Based on similar product (08.039)	-	Flux verification testing		
08.041 Iron Powder Core Micro Metals	Micro Metals	Iron powder	1) Micro Metals 2)	None	1) TBA 2) TBA 3) Transformers and Inductors	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	Formally known as Arnold Cores	-	Heritage - used on previous applications		
10.001 Scotchweld EC2216	Scotchweld EC2216	2- part epoxy adhesive	1) 3M 2) PS502-10	AKS/PROC/92055 cure 2:30h at 65°C or 24h at RT	1) TBA 2) TBA 3) bonding	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 FT08690074 FT08690088 FT08690184 FT08690244 FT08690257 FT08690269 FT08690380	OUTG: TML: 0.46% RML: - VCM: 0.08% INTA: FC9517	Used in Flux qualification		
10.002 Solithane C113/300	Solithane C113/300	Polyurethane	1) Thiokol, Uniroyal 2) FT 04147020-1	AKA/PROC/90027, cure : 5h at 65°C	1) TBA 2) TBA 3) Impregnation of low voltage transformers and coils	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 FT08690074 FT08690140 FT08690184 FT08690380	OUTG: TML: 0.40% RML: 0.19% VCM: 0.04% INTA: HIP DML	Used in Flux qualification		
10.003 Eccobond 55/9	Eccobond 55/9	2 Comp EpoXy Adhesive	1) Grace N.V 2) PS 502-04	ADS/PROC/95027, cure: 24H at RT	1) TBA 2) TBA 3) Coating of marking and labelling	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	ASD/REPO/99011	OUTG: TML: 0.47% RML: VCM: 0.01% ESTEC	ESTEC		
10.004 Eccobond 285	Eccobond 285	2 Comp EpoXy Adhesive	1) Emerson & Cuming 2) FT 04147016	CRA/ASD/PROC/8027, cure 3h at 60°C	1) TBA 2) TBA 3) Bonding of cores and bonding of components to PCB	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	FT08690074	OUTG: TML: 0.33% RML: 0.21% VCM: 0.00% FC0501	Heritage - used on previous applications		
10.005 Silicone 2 part	Nusil CV1-144-0	Silicone	1) Nusil 2) PS504-01	None	1) TBA 2) TBA 3) Coating of PCB and components	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 ASD/REPO/03012	OUTG: TML: 0.26% RML: 0.24% VCM: 0.00% INTA: FC8907	Approved for Space use		
10.006 Loctite 648	Loctite 648	Urethane methacrylate	1) Loctite 2) 04141003	None	1) TBA 2) TBA 3) bonding	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ATV ASTM FT08690380		Heritage - used on previous applications		

1	2	3	4	5	6	7	8	9.1		9.2	9.3	10
Item No.	Commercial ID	Chemical Nature	Procurement Details	Processing	Use and Location	Environmental Code	Size Code	Validation		Justification	Prime Approval	Customer Approval
10.007 IQ-Bond 5600	IQ-Bond 5600	Silver, thixotropic Paste	1) EPO-TEK 2)	None	1) TBA 2) TBA 3) Electrically conductive adhesive	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ATV ASTM	OUTG: TML: 0.24% VCM: 0.01%	Used in ESA qualification		
10.008 EPO-TEK 353	IQ-Bond 5600	EPO-TEK 353	1) Roartis 2)	None	1) TBA 2) TBA 3) Adhesive	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1		OUTG: See product datasheet	Approved for Space use		
11.001 Polyester Label / Acrylic Adhesive	CIL-8100 M	Polyester Label / Acrylic Adhesive	1) CILS Ltd 2) PS203-23	Thermal Transfer	1) TBA 2) TBA 3) Self-adhesive tape for marking of components	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	ASD/REPO/00010 FT08690074 FT08690088 FT08690184 FT08690244 FT08690257 FT08690269 FT08690380	OUTG: TML: 0.60% RML: 0.32% VCM: 0.03%	Used in Flux qualification		
11.002 Brady Label	Brady Label B426	Polymide / Acrylic adhesive	1) Brady 2) 04141005	Thermal Transfer	1) TBA 2) TBA 3) Marking of components and PCBs	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	FT08690184	OUTG: TML: 1.15% RML: 0.05% VCM: 0.00%	Used in Flux qualification		
11.003 3M Tape 1205	3M Tape 1205	Polymide /Acrylic Adhesive	1) 3M 2) PS FT04141008-*	73µm thick	1) TBA 2) TBA 3) Insulation in transformers	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	ASD/REPO/99011 ASD/REPO/03012 FT08690074 FT08690088 FT08690123 FT08690140 FT08690184 FT08690244 FT08690269 FT08690380	OUTG: TML: 0.60% RML: 0.13% VCM: 0.03% INTA:FC-9415	Used in Flux qualification		
11.004 3M Tape 92	3M Tape 92	Polymide / Silicone Adhesive	1) 3M 2) PS602-03	73µm thick	1) TBA 2) TBA 3) Insulation in transformers	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	ASD/REPO/99011 FT08690257 FT08690380	OUTG: TML: 0.60% RML: 0.13% VCM: 0.03% INTA:FC-9415	Used in Flux qualification		
11.005 Lacing Tape	Temp Lace H231H	Teflon Braid /Syn Rubber	1) Gudebrod 2) 04141006-1	None	1) TBA 2) TBA 3) Additional Fixation of Toroids	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	FT08690184 FT08690380		Used in Flux qualification		
11.006 Lacing Tape	AA52081 C4	Temp Lace, Polyester w synthetic rubber finish	1) Breyden 2) TBD	None	1) TBA 2) TBA 3) Additional Fixation of Toroids	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	FT08690244 FT08690380	OUTG: TML: 0.561% RML: 0.426% VCM: 0.0426% INTA:FC-9415	Used in Flux qualification		

1	2	3	4	5	6	7	8	9.1		9.2	9.3	10
Item No.	Commercial ID	Chemical Nature	Procurement Details	Processing	Use and Location	Environmental Code	Size Code	Validation		Justification	Prime Approval	Customer Approval
11.007 SP 262 Polymide Tape	Polymide Tape with Adhesive	Polymide Tape with Adhesive	1) PPI Adhesive Products Limited 2) TBD	None	1) TBA 2) TBA 3) Tape and insulation	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	FT08690279	OUTG: TML: 0.987% RML: 0.179% VCM: 0.007% INTA:DMAV1506	Used in Flux qualification		
14.001 Primer	CF1-135	Silicone Primer	1)Nusil 2) FT0414705	None	1) TBA 2) TBA 3) Primer for CV2500	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	FT08690184 FT08690244	OUTG: TML: 8.84% CVCM: 0.02% See 9.2	Item listed on NASA materials database ref GSC25405 Used in Flux qualification		
14.002 Silicone 2 part	CV-2500	Silicone	1)Nusil 2) FT04147021	AKS/PROC/91048, cure 1H at 100°C	1) TBA 2) TBA 3) Impregnation of low voltage transformers and coils	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT08690074 FT08690088 FT08690140 FT08690184 FT08690244 FT08690257 FT08690269 FT08690380	OUTG: TML: 0.16% RML: 0.16% VCM: 0.01% INTA: FC-9222	ESA approved ECSS-Q-70-02 ECSS-Q-70-04 Used in Flux qualification		
15.001 Coilformer and coil carrier		Polyephtalate, Glass fibre reinforced	1) EPCOS 2) PS202-03	None	1) TBA 2) TBA 3) Coilformer and coil carrier for POT cores and RM power cores	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 FT08690074 FT08690123 FT08690184 FT08690380	OUTG: TML: 0.36% RML: 0.14% VCM: 0.08% ESTEC 325	Used in Flux Qualification		
15.002 Coupelle		FR4 or Permaglas	1) AMGP 2) 04155001-2	None	1) TBA 2) TBA 3) Toroid Carrier	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT08690074	OUTG: TML: 0.45% RML: VCM: 0.00% ESTEC 104	Heritage - used on previous applications		
15.003 Polycarbonate	Polycarbonate	Polycarbonate	1) EPCOS 2) PS303-03	None	1) TBA 2) TBA 3)Mounting Washer	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 FT08690074 FT08690123 FT08690184 FT08690380	OUTG: TML: 0.35% RML: 0.31% VCM: 0.03% ESTEC 320	Used in Flux Qualification		
15.004 Hostaphan/ Mylar	Hostaphan/Mylar	Polyester Film	1) Hoechst 2) PS302-02	None	1) TBA 2) TBA 3)IM Cores	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 ASD/03012	OUTG: TML: 0.26% RML: 0.07% VCM: 0.00% INTA:FC-9519/OC9520	Heritage - used on previous applications		

1	2	3	4	5	6	7	8	9.1		9.2	9.3	10
Item No.	Commercial ID	Chemical Nature	Procurement Details	Processing	Use and Location	Environmental Code	Size Code	Validation		Justification	Prime Approval	Customer Approval
15.005 Ultem 1010R-7101	Ultem 1010R-7101	Polyetherimid (PEI)	1) Ulstrup 2) 04151001	Injection moulding by supplier, heat treatment after moulding 1 ¾ h at 170°C	1) TBA 2) TBA 3) Ims, UU core magnetics and ASD RM coilformers	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 ASD/REPO/03012 FT08690074 FT08690244 FT08690269 FT08690380	<u>OUTG:</u> TML: 0.53% RML: 0.52% VCM: 0.02% NUSIL:1350	Used in Flux qualification		
15.006 Ultem 1000-100 natural	Ultem 1000-1000 Natural	Polyetherimid (PEI)	1) GE Plastic 2) 04151002	Injection moulding by supplier, heat treatment after moulding 1 ¾ h at 170°C Machining by Christian Olrik A/S	1) TBA 2) TBA 3) Machined sockets for Ims, UU core magnetics, ASD-RM coilformes and SMD toroid carrier	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 ASD/REPO/03012 FT08690088 FT08690184 FT08690244 FT08690380	<u>OUTG:</u> TML: 0.56% RML: 0.28% VCM: 0.01% NUSIL:1349	Used in Flux qualification		
15.007 Bakelite PM9630	Bakelite PM9630	Sumitomo Bakelite Sumikon® PM-9630 Glass-Filled Phenolic	1) Various 2)PS TBA	None	1) TBA 2) TBA 3) Coilformer	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	Heritage - used on previous applications	<u>OUTG:</u> TML: 1.68% RML: 1.19% VCM: 0.00% INTA DMAV-1107	Supplier replacement for previous coilformer material		
15.008 Liquid-crystal Polymers (LCP)	Liquid-crystal Polymers (LCP) UL 94V	Liquid-crystal Polymers (LCP) UL 94V	1) Ferroxcube 2) 04155010	None	1) TBA 2) TBA 3) Coilformer for Plannar	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT08690257 FT08690380	-	Used in Flux qualification		
15.009 Bakelite UP3420	Bakelite UP3420	Bakelite UP3420 Polyester Alloy product filled with glass fiber	1) EPCOS 2)PS TBA	None	1) TBA 2) TBA 3) Coilformer	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	Supplier replacement for previous coilformer material		Heritage - used on previous applications		
15.010 Tecapeek	Tecapeek	PEEK polymer Thermaset plastic	1) TBA 2)PS TBA	None	1) TBA 2) TBA 3) moulded shapes	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1		<u>OUTG:</u> TML: 0.2% CVCM: 0.01% NASA database	Heritage - used on previous applications		
15.011 LCP E4008MR	LCP E4008MR		1) TBA 2)PS TBA	None	1) TBA 2) TBA 3) moulded shapes	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1		-	Approved by Flux		
15.012 DAP4 (Black)	DIALLYL PHTHALATE BLACK UV HOUSING		1) TBA 2)PS TBA	None	1) TBA 2) TBA 3) moulded shapes	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1		<u>OUTG:</u> TML: 0.56% CVCM: 0.00% NASA database	Supplier replacement for previous coilformer material		

1	2	3	4	5	6	7	8	9.1		9.2	9.3	10
Item No.	Commercial ID	Chemical Nature	Procurement Details	Processing	Use and Location	Environmental Code	Size Code	Validation		Justification	Prime Approval	Customer Approval
16.001 Silicone 2 part	R-2615 silicone	Silicone	1) Nusil 2) PS504-04	None	1) TBA 2) TBA 3) Impregnation of low voltage transformers and coils	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	ASD/REPO/99011		Heritage - used on previous applications		
16.002 Silicone Rubber Tube	Elkosil	Silicone Rubber	1) Elkoflex Carl Brincker 2) PS601-02	Baking during manufacturing: 3h at 120°C	1) TBA 2) TBA 3) Insulation/identification of transformer wire	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	ASD/REPO/03012 FT08690074 FT08690123 FT08690140 FT08690244 FT08690380	<u>OUTG:</u> TML: 0.25% RML: 0.24% VCM: 0.05% INTA FC-9917	Used in Flux qualification		
16.003 Cho-Therm	Cho-Therm 1671	Silicone elastomer	1) Chomerics 2) TBD	cutting	1) TBA 2) TBA 3) Thermal Conductive sheet and electrical insulation	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ECSS-Q-ST-70-02 ESA PSS-01 702	<u>OUTG:</u> TML: 0.46% RML: - VCM: 0.08% INTA 335	ESA DML database		
16.005 Silicone Compound	Dow Corning 6-1104	Dimethyl siloxane, methyltrimethoxy-terminated Methyltrimethoxysilane	1) DOW Corning 2) PS504-14	ASD/REPO/98004	1) TBA 2) TBA 3) bonding	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	PSS-01-701-D-1	<u>OUTG:</u> TML: 0.13% RML: VCM: 0.04%	PSS-01-701-D-1		
16.006 Silicone Compound	MAPSIL QS1123 MAPSIL 213 MAPSIL 213 B MAPSIL 214		1)MAP 2)FT04147006 & FT04147007	None	1) TBA 2) TBA 3) Impregnation	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ESA Report TEC-QEM FT08690184 Inta/616	<u>OUTG:</u> TML:0.1%-0.4% RML:< 0.1% VCM: 0.1%-0.2%	ESA Qualified Used in Flux qualification		
16.007 Silicone Rubber Tube	Colour tubing	Silicone Rubber	1)Hilltop Products 2) TBA	None	1) TBA 2) TBA 3) Identification of transformer wire	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	Heritage - used on previous applications FT08690380	<u>TBA</u>	BS2848 Type 5 180TB -80°C to +250°C		
16.008 Shrink Tubing	Shrink tubing	Single wall polyfin	1)sumitube 2) TBA	None	1) TBA 2) TBA 3)insulationf transformer wire	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	Heritage - used on previous applications FT08690380	<u>TBA</u>			
17.001 Polycarbonate Washer	None	Polycarbonate	1) EPCOS 2) PS303-003	None	1) TBA 2) TBA 3) Washer used for mounting of POT/RM coils and transformers	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	ASD/REPO/99011 FT08690074 FT08690123	<u>OUTG:</u> TML: 0.35% RML: 0.31% VCM: 0.03% ESTEC 320	Heritage - used on previous applications		

1	2	3	4	5	6	7	8	9.1		9.2	9.3	10
Item No.	Commercial ID	Chemical Nature	Procurement Details	Processing	Use and Location	Environmental Code	Size Code	Validation		Justification	Prime Approval	Customer Approval
17.004 Cho-Seal	Cho-Seal 1285	Silicone elastomer	1) Chomerics 2) TBD	None	1) TBA 2) TBA 3) Thermal Conduction and electrical insulation			FT08690257 FT08690380	-	ESA approved Used in Flux qualification		
17.005 Therm-A-Gap	Therm-A-Gap	Silicone elastomer	1) TBD 2) TBD	None	1) TBA 2) TBA 3) Thermal Conduction and electrical insulation			FT08690257 FT08690380	-	ESA approved Used in Flux qualification		
18.001 Duroplast GV	Duroplast	Phenolic with glass fibre	1) Ferroxcube 2) PS202-01	None	1) TBA 2) TBA 3) Coilformer	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 ESA: 30-80/17 (ECS)	OUTG: TML: 0.36% RML: 0.20% VCM: 0.08%	ESA approved		
18.002 PCB	None	Polymide Glass fibre and plated copper with SnPb on terminals	1) Systronic, Printca 2) ECSS-Q-ST-70-11c	Baking and cleaning	1) TBA 2) TBA 3) Single or multilayer with coil turns for Planar Transformer	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0-W3	ECSS-Q-ST-70-11c FT08690257 FT08690380		ECSS-Q-ST-70-11c Used in Flux qualification		
18.003 GFR Thermosetting Plastic	GFR Thermosetting Plastic	Phenolic with glass fibre Black +180°C	1) Epcos 2) FT04155007	None	1) TBA 2) TBA 3) Coilformer	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT08690184 FT08690380		Used in Flux qualification		
18.004 GFR Thermosetting Plastic	GFR Thermosetting Plastic	Phenolic with glass fibre Green +155°C	1) Epcos 2) PS202-07	None	1) TBA 2) TBA 3) Coilformer	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT08690184 FT08690269 FT08690380 ESA: 30-80/17 (ECS)	OUTG: TML: 0.36% RML: 0.20% VCM: 0.08%	ESA approved Used in Flux qualification		
18.005 GFR Thermosetting Plastic	GFR Thermosetting Plastic	GFR Thermosetting Plastic	1) Epcos 2) FT 04155003-1	None	1) TBA 2) TBA 3) Coilformer	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT 08690140	-	Heritage - used on previous applications		
18.006 (PF) GFR	(PF) GFR	Phenol Formaldehyde	1) Ferroxcube 2) 04155002-1	None	1) TBA 2) TBA 3) Coilformer	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 ASD/REPO/03012 FT08690184 FT08690380		Used in Flux qualification		

1	2	3	4	5	6	7	8	9.1		9.2	9.3	10
Item No.	Commercial ID	Chemical Nature	Procurement Details	Processing	Use and Location	Environmental Code	Size Code	Validation		Justification	Prime Approval	Customer Approval
18.007 Blue Alkyd	Blue Alkyd Previously designated VINCOLITE AMC 2568	Blue Alkyd	1) EPCOS 2) PS202-04	None	1) TBA 2) TBA 3) Coilformer for RM Cores	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 FT08690140 FT08690184	OUTG: TML: 1.39% RML: 1.17% VCM: 0.00% INTA FC-9328	Used in Flux qualification		
18.008 Polyphenylene Sulfide with lead tinned pins	Ryton	Polyphenylene Sulfide with lead tinned pins	1) Norwe 2) PS TBA	None	1) TBA 2) TBA 3) Coilformer for RM Cores	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	Heritage - used on previous applications	-	Heritage - used on previous applications		
18.009 Thermosetting Plastic Phenolic PM	T385J	Polyphenylene Sulfide with lead tinned pins	1) Chang Chun 2) PS TBA	None	1) TBA 2) TBA 3) Coilformer for RM Cores	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1		-	Heritage - used on previous applications		
19.001 Theic-Mod Polyester with Polyamide-imide overcoating	Class 200(N), grade 2 acc to IEC 317-13	Copper Wire- Polyester with Polyamide-imide overcoating	2)	ADS/PROC/90028 AKS/PROC/94027	1) TBA 2) TBA 3) Transformer and Inductor winding	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT08690074 FT08690184 FT08690380		Used in Flux qualification		
19.002 Theic-Mod Polyesterimide Enamelled copper Wire	Class 180(N), grade 2 acc to IEC 317-8	Copper Wire - Polyesterimide Enamelled	1) Misc 2)	ADS/PROC/90028 AKS/PROC/94027	1) TBA 2) TBA 3) Transformer and Inductor winding	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT08690074 FT08690184 FT08690257 FT08690380	OUTG: TML: 0.03% RML: 0.01% VCM: 0.00% INTA FC-9302 INTA FC-93008	Used in Flux qualification		
19.003 Polyesterimide Enamelled copper Wire	Class 180(H), grade 2 acc to IEC 317-23	Copper Wire - Polyesterimide Enamelled	1) 04133001 2) PS403-04	ADS/PROC/90028 AKS/PROC/94027	1) TBA 2) TBA 3) Transformer and Inductor winding	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT08690244 FT08690257 FT08690269 FT08690380 INTA FC-9302 INTA FC-93008	OUTG: TML: 0.03% RML: 0.01% VCM: 0.00%	Used in Flux qualification		
19.004 Polyurethane Polyimide Enamelled Copper Wire	Class 180(H), grade 2 acc to IEC 317-51/55	Copper Wire - Polyurethane Polyimide Enamelled	1) Various 2) 04133001	ADS/PROC/90028 AKS/PROC/94027 ASD/PROC/97003	1) TBA 2) TBA 3) Transformer and Inductor winding	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	ASD/REPO/99011 FT08690074 FT08690123 FT08690140 FT08690184 FT08690244 FT08690380	OUTG: TML: 0.07% RML: 0.02% VCM: 0.00% INTA FC-9917	Used in Flux qualification		
19.005 Polyurethane Enamelled Copper Wire	Class 155(F), grade 2 acc to IEC 317-20	Copper Wire - Polyurethane Enamelled	1) Misc 2) PS403-08	ADS/PROC/90028 AKS/PROC/94027 ASD/PROC/97003	1) TBA 2) TBA 3) Transformer and Inductor winding	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	ASD/REPO/99011	OUTG: TML: 0.09% RML: 0.03% VCM: 0.00% INTA FC-9917	Heritage - used on previous applications		

1	2	3	4	5	6	7	8	9.1		9.2	9.3	10
Item No.	Commercial ID	Chemical Nature	Procurement Details	Processing	Use and Location	Environmental Code	Size Code	Validation		Justification	Prime Approval	Customer Approval
19.006 Polymide Insulated Copper Wire	AWG (Filica Wire)	Copper Wire - Polymide Insulated	1) AXON-F 2) SCC/3901/001-28-B3 SCC/3901/001-29-B3	AKS/PROC/94027 ASD/PROC/97003	1) TBA 2) TBA 3) Transformer and Inductor winding	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	Customer qualification A5 ES Phases P1/P2 FT08690184 FT08690380		EESA SCC Used on Flux qualification		
19.007 Au coated wire	Class 180(N) to IEC 60317/NEMA74	Copper Wire, Au coated with Polyurethane/Polymide	1) Misc 2) PS403-08		1) TBA 2) TBA 3) Transformer and Inductor winding	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	FT 08690279		Heritage - used on previous applications		
19.008 Au coated wire	HSPTN Natural	Copper ETP coat polyester AI/Polyamideide	1) MWS 2) NEMA MW36-C	None	1) TBA 2) TBA 3) Transformer and Inductor winding	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W2	ESE-RPT7456_027_RPT_16	OUTG: TML: 0.016% RML: 0,011% VCM: 0.03%	Heritage - used on previous applications NEMA		
19.009 Litz Wire	Polysol P155	Copper Wire	1) Elektisola 2) 04132007	None	1) TBA 2) TBA 3) Transformer and Inductor winding	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	FT 08699051		Used in ESA qualification		
19.010 Polymide Insulated Flat	HSPTN-180 Natural	Copper(ETP) coat Polyester AI/Polyamideide		None	1) TBA 2) TBA 3) Transformer and Inductor winding	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	ESE_RPT_7456_027_RPT_16	OUTG: TML: 0.016% RML: 0.011% VCM: 0.03%	NEMA		
19.011 ESCC Wires	ESCC 3901			None	1) TBA 2) TBA 3) Transformer and Inductor winding	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0			ESCC 3901		
20.001 Thread					1) TBA 2) TBA 3) Additional Fixation of Wires	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	Customer Specific FT08690380		Used in Flux qualification		
20.002 Epoxy Glass Laminate	Epoxy Glass Laminate GF, FR4	Epoxy Glass Laminate GF, FR4	1) Printca 2) MIL. P-13949/4	None	1) TBA 2) TBA 3) Plinths	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 FT08690184 FT08690380 ESTEC fax 23850725	OUTG: TML: 0.5% RML: - VCM: 0.03%	ESA approved Used in Flux qualification		
20.004 Glass micropearls	Glass micropearls 0.1mm	3020-BL 70/110	1) Verre Industri S.A. 2) PS501-05	AKS/PROC/92055	1) TBA 2) TBA 3) filler	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W0	ASD/REPO/99011 FT08690184 FT08690244		Used in Flux qualification		

1	2	3	4	5	6	7	8	9.1	9.2	9.3	10
Item No.	Commercial ID	Chemical Nature	Procurement Details	Processing	Use and Location	Environmental Code	Size Code	Validation	Justification	Prime Approval	Customer Approval
20.005 Aerosil 200	Aerosil 200		1) Degussa, Superfos Kemi 2) PS FT04147004-*	AKS/PROC/92055, mixed with Scotch-Weld 2216 when specified	1) TBA 2) TBA 3) Filler for adhesive	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	ASD/REPO/99011 FT08690074 FT08690088 FT08690184 FT08690244 FT08690257 FT08690269	OUTG: TML: 1.08% RML: 0.60% VCM: 0.01% INTA FC-9517 (EC2216 + Aerosil)	Used in Flux qualification	
20.006 CAB-O-SIL	CAB-O-SIL	Silicon Dioxide	1) Cabot 2) 04147003-1	AKS/PROC/91048	1) TBA 2) TBA 3) Filler to silicone	1) TBA 2) TBA 3) TBA	1) =>A0 2) =>V0 3) W0	FT08690074 FT08690088	OUTG: TML: 2.24% RML: 2.03% VCM: 0.1% INTA/370	Heritage - used on previous applications	
20.009 Fong Yong E536 epoxy	E536 epoxy		2) 1) Fong Yong 2)		1) TBA 2) TBA 3) Epoxy/Encapsulating compound.	1) TBA 2) TBA 3) TBA	1) =>A1 2) =>V1 3) W1	FT 08699051	OUTG: TML: 0,337% RML: 0,215% VCM: 0.019% ESE-RPT-7456-062-INTA-18	Used in ESA qualification	