



**Aerospace
Systems Division**

LMS EXPERIMENT
NON METALLIC MATERIALS LIST

Contract No. NAS 9-5829

NO.	REV. NO.
ATM-968	
PAGE <u>1</u>	OF <u>11</u>
DATE	<u>7/22/71</u>

Presented herein is the Non Metallic Materials List for the LMS. Exhibit A defines Non Metallic Materials for BxA and Exhibit B defines Non Metallic Materials for UTD portions of the LMS design.

The data herein represents the status of the LMS experiment design at the time of the Array E CDR.

Prepared by:

*R. W. Kerhat and
F. Howell*

F. Howell
LMS Reliability P. E.

Approved by:

J. E. H. S. J. Ellison

S. J. Ellison Manager
ALSEP Reliability



**Aerospace
Systems Division**

LMS EXPERIMENT
NON METALLIC MATERIALS LIST

Contract No. NAS 9-5829

NO.	REV. NO.
ATM-968	
PAGE <u>2</u>	OF <u>11</u>
DATE 7/22/71	

EXHIBIT A
NON-METALLIC MATERIALS
FOR BxA BUILT EQUIPMENT



**Aerospace
Systems Division**

LMS EXPERIMENT
NON METALLIC MATERIALS LIST

Contract No. NAS 9-5829

NO.	REV. NO.
ATM-968	
PAGE 3	OF 11
DATE 7/22/71	

ITEM	MATERIAL	VENDOR	ATM 242-	USE*
<u>ADHESIVES</u>				
1	7343/7139	NARMCO	110	1, 12, 32
2	Silastic 140	Dow-Corn- ing	122	4, 11, 23, 35
3	Delta Bond 152	Wakefield	113	9, 14, 37, 38, 61, 62, 63
4	X-81	Armstrong	119	65
5	RTV-615 LAC-30-4324	GE	A**	33
6	EPON 901/B1	Shell ADH	116	9
7	Ecco Bond 24	Emerson & Cummings	A	10, 15, 21
<u>COATINGS</u>				
8	S-13-G Paint	ILL Inst Tech	414	1, 11, 54, 55
9	Z 93 Paint	ILL Inst Tech	416	2
10	Solitaane 113/c 113-300	THIOKOL	412	7, 8, 9, 18, 19
11	NEXTEL 401-AID	3M-RPD	401	17
12	PRIMER SS-4120 LAC-30-4325	GE		33
13	VMB-18 UNDER- COAT	Vacuum Met- A alizing		55
<u>MARKING MATERIALS</u>				
14	73-X INK	INDEPEN- DENT	403	1, 6, 24, 25, 26, 27, 30, 39, 52, 54, 55, 57, 59, 60, 61, 62, 63,

* See page 6 for "Used in Assembly" reference.

** "A" designates the materials are an approved non-standard, non-metallic material for which no ATM-242 equivalent exists. The approval is restricted to use as called out on the BxA drawings and has been approved by BxA Parts and Materials for use on ALSEP Array E only.



**Aerospace
Systems Division**

LMS EXPERIMENT
NON METALLIC MATERIALS LIST

Contract No. NAS 9-5829

NO.	REV. NO.
ATM-968	
PAGE 4	OF 11
DATE 7/22/71	

ITEM	MATERIAL	VENDOR	ATM	USE *
15	CAT-L-INK 50-XXX	Wornow	242- 415	2, 11
<u>LAMINATED COPPER-CLAD EPOXY GLASS</u>				
16	TL-GFA1	MIL-P- 55617	809	6, 28, 34, 58, 59
17	FL-GF062C 2/2AIIA	MIL-P- 13949	A	52, 57
18	FL-GE031C 2/2AIIA	MIL-P- 13949	811	20, 22, 41, 42, 43, 44, 50, 56
19	FL-GE031C 2/0AIIA	MIL-P- 13949	811	40, 46, 47, 48, 49, 51
<u>LAMINATED EPOXY GLASS</u>				
20	GR. GEB	MIL-P- 18177	807	3, 13, 29, 30, 36, 65
<u>THERMO PLASTICS</u>				
21	Plastic, Mold- ing Polycarbon- ate	GE	707	5
<u>FOAMS</u>				
22	CPR-9800	UPJOHN	512	1, 12, 14, 32
23	COHRALASTIC	CONN	508	4, 23, 35
<u>POTTING AND SEALING COMPOUNDS</u>				
24	Stycast 2850 KT	EMERSON & CUMMINGS	924	9
25	LOCKTITE,	LOCKTITE	918	9
26	RTV560	GE	902	11
27	DC 92-024	DOW-C	922	11, 14
28	RTV 11			16



**Aerospace
Systems Division**

LMS EXPERIMENT
NON METALLIC MATERIALS LIST

Contract No. NAS 9-5829

NO.	REV. NO.
ATM-968	
PAGE <u>5</u> OF <u>11</u>	
DATE 7/22/71	

ITEM	MATERIAL	VENDOR	ATM	USE*
	<u>TAPE, INSULATING</u>		242-	
29	7366	MYSTIK	318	7, 18, 19
	<u>TAPE, BURN-CORD</u>			
30	CAT No. 35D0F13	DACRON	1018	31
	<u>TAPE, LACING</u>			
31		Deleted		
32	90L0F13A (M1)	TEFGLAS	1107	18
	<u>LAMINATED PHENOLIC -GLASS</u>			
33	CTL 9ILD	VOLAN	803	54, 55
	<u>TUBING</u>			
34	Heat Shrink SMT -20		321	9
35	TUZ -XX		301	9, 19
36	Heat Shrink STM-9		A	9
	<u>MISCELLANEOUS</u>			
37	Bubble Level Liquid	GEIER & BLUHM	A	53
38	GLASS FABRIC SPEC 40/40/ 15-20	U. S. Poly- meric CHEMICALS INC	A	54, 55
39	SILK, HABITUAE -S905		1113	64
40	Thread (.015dia)	DACRON	1018	64



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Systems Division**

LMS EXPERIMENT
NON METALLIC MATERIALS LIST

Contract No. NAS 9-5829

NO.	REV. NO.
ATM-968	
PAGE 6	OF 11
DATE 7/22/71	

*Used in Assembly:

- | | | |
|--------------------------|--------------|--------------|
| (1) 2347651 | (23) 236056 | (45) 2347613 |
| (2) 2347512 | (24) 235054 | (46) 2347626 |
| (3) 2347696 | (25) 236053 | (47) 2347628 |
| (4) 2347470 | (26) 236052 | (48) 2347623 |
| (5) 2347681 | (27) 236051 | (49) 2347621 |
| (6) 2347558 also 2347543 | (28) 2347543 | (50) 2347611 |
| (7) 2347555 | (29) 2347461 | (51) 2347494 |
| (8) 2347550 | (30) 2347462 | (52) 2347533 |
| (9) 2347480 | (31) 2347463 | (53) 2347513 |
| (10) 2347442 | (32) 2347469 | (54) 2347511 |
| (11) 2347400 | (33) 2347606 | (55) 2347675 |
| (12) 2347407 | (34) 2347554 | (56) 2347439 |
| (13) 2347682 | (35) 2347409 | (57) 2347454 |
| (14) 2347410 | (36) 2347642 | (58) 2347617 |
| (15) 2347639 | (37) 2347523 | (59) 2347578 |
| (16) 2347582 | (38) 2347524 | (60) 2347607 |
| (17) 2363050 | (39) 2347616 | (61) 2347602 |
| (18) 2347530 | (40) 2347496 | (62) 2347670 |
| (19) 2347540 | (41) 2347501 | (63) 2347671 |
| (20) 2347426 | (42) 2347503 | (64) 2347414 |
| (21) 2347429 | (43) 2347506 | (65) 2347412 |
| (22) 2347432 | (44) 2347508 | |



**Aerospace
Systems Division**

LMS EXPERIMENT
NON METALLIC MATERIALS LIST

Contract No. NAS 9-5829

NO.	REV. NO.
ATM-968	
PAGE <u>7</u> OF <u>11</u>	
DATE <u>7/22/71</u>	

EXHIBIT B
NON-METALLIC MATERIALS
FOR UTD BUILT EQUIPMENT



**Aerospace
Systems Division**

LMS EXPERIMENT
NON METALLIC MATERIALS LIST

Contract No. NAS 9-5829

NO.	REV. NO.
ATM-968	
PAGE 8	OF 11
DATE 7/22/71	

ITEM	MATERIAL	VENDOR	ATM 242-	STATUS*
<u>ADHESIVES</u>				
1	Delta Bond	Wakefield Engineering	113	
2	Sauereisen #7	Sauereisen Cements	None	A
3	Torr Seal	Varian	None	A
<u>COATINGS</u>				
4	Solithane H3/C -113-300	Thiokol	412	
<u>MARKING MATERIALS</u>				
5	73-X Black	Independ- ent Ink Co.	403	
6	73-X White	Independ- ent Ink Co.	403	
<u>HEAT SINK COMPOUND</u>				
7	DC340	Dow Corning	602	
<u>FILM AND SHEET STOCK</u>				
8	4200 (Kapton)	Thermalloy	1106	
<u>LAMINATED COPPER-CLAD EPOXY GLASS</u>				
9	MIL-P- 13949D, Type GF (Color White)	Mica Cor- poration or Westing- house	802	
<u>CONNECTOR INSULATOR</u>				
10	Diallyl Ph- thalate	AMP	703	

*Note: See page 11 for status letter code.



**Aerospace
Systems Division**

LMS EXPERIMENT
NON METALLIC MATERIALS LIST

Contract No. NAS 9-5829

NO. ATM-968	REV. NO.
PAGE . 9 OF 11	
DATE 7/22/71	

ITEM MATERIAL VENDOR ATM STATUS*

242-

TRANSIPADS

11 Diallyl Phthalate Milton Ross 703
or Thermal-
loy

POTTING SHELLS

12 Diallyl Phthalate EPD or 703
equivalent

TRANSFORMER HEADER AND BOBBIN

13 Makrolon (Poly- Siemens None A
carbonate)

MOLDED STOCK

14 KEL-F-81 3M Com- 1003
pany

POTTING COMPOUNDS AND SEALANTS

15 Stycast 1090/11 Emerson 901
Cumings

16 3140 RTV Dow Corning None A

17 1200 Primer Dow Corning 914

18 Locktite CV Locktite 918
Corporation

19 Sylgard 183 Dow Corning 911

20 Epon 828/Ver- Shell-Chemi- 912
cal

INSULATION

21 Fibermat I 3M Company None A

22 Fibermat IV 3M Company None A

23 Mystic 7300 Mystic Tape 309



**Aerospace
Systems Division**

LMS EXPERIMENT
NON METALLIC MATERIALS LIST

Contract No. NAS 9-5829

NO.	REV. NO.
ATM-968	
PAGE <u>10</u> OF <u>11</u>	
DATE 7/22/71	

ITEM	MATERIAL	VENDOR	ATM 242-	STATUS *
	<u>LACING</u>			
24	722-S	Gudebrod	1112	
	<u>TUBING</u>			
25	TFT-200 or equivalent	Alpha or equivalent	301	
26	Thermofit Knar	Rayclad Tubes	1008	
	<u>WIRE INSULATION</u>			
27	MIL-W-583, Type M4 (Polyurethane)	Equivalent or Phelps Dodge	323	
28	MIL-W-583, Type T4 (Polyurethane)	Wilbur B. Driver		A
29	MIL-W-583, Type B4 (Nylese)	Phelps Dodge	317	
30	MIL-W-16878, Type E (Teflon)	ITT or equivalent	302	
31	Teflon "CR"	W. L. Gore	None	A
32	RG187/U Per MIC-C-17D (Teflon)	ITT or equivalent	None	A
	<u>CERAMIC</u>			
33	AL-300 (97% Al ₂ O ₃)	Wesgo		A
	<u>RUBBER</u>			
34	R10470	CHR	508	
35	VITON	Dupont	211	



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Systems Division**

LMS EXPERIMENT
NON METALLIC MATERIALS LIST

Contract No. NAS 9-5829

NO.	REV. NO.
ATM-968	
PAGE <u>11</u>	OF <u>11</u>
DATE 7/22/71	

ITEM	MATERIAL	VENDOR	ATM 242-	STATUS*
	<u>VACUUM LEAK SEAL</u>			
36	VAC-SEAL Vacuum Lock Sealer	G. E.	None	A

*Note: "A" designates the materials are an approved non-standard material for which no ATM-242 equivalent exists. The approval is based on BxA review of subcontractor submitted documentation which is on file at BxA.