

**ALSEP
COMPOSITE
NON-METALLIC
MATERIALS LIST**

NO.	REV. NO.
ATM-1045	A
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Rev. A: 25 July 1972	
DATE 10 Aug. 1971	

This list is a compilation of the non-metallic materials which have been specified for use in the central station and experiments for ALSEP Array E.

Data sources for this listing include assembly drawings, drawing lists, and materials lists used for the fabrication of ALSEP Array E equipment.

Where the material is listed as an Approved Material in ATM-242, Rev. E(1) the file number is referenced. The materials which do not reference the file number have been the subject of a non-standard item approval request and the application and material properties have been analyzed to establish a basis for approval in a specific application.

This report is furnished in compliance with BSR-3024, ALSEP-RA-08, 'RELIABILITY PROGRAM PLAN FOR FLIGHT ARRAY E', Para. 6.9.

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Rev A - Page 6 - Added Mystic 7100 Tape (LSPE) (C/S)
Page 9 - Added NY-GEL 812 (LSPE)



**Aerospace
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**ALSEP ARRAY E
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USER CODE**

- CS CENTRAL STATION COMPONENTS
(PCU-PDU-DP-) BENDIX

- CS(R) CENTRAL STATION COMMAND RECEIVER
MOTOROLA G. E. D.

- CS(T) CENTRAL STATION DATA TRANSMITTER
TELEDYNE TELEMETRY DIVISION

- GU CENTRAL STATION COMPONENTS AND ONE
OR MORE EXPERIMENTS - BENDIX

- LEAM LEAM EXPERIMENT - BENDIX

- LEAM(Z) LEAM EXPERIMENT ELECTRONICS -
TIME-ZERO CORP.

- LMS SPECTROMETER ELECTRONICS - BENDIX

- LMS(EOD) SPECTROMETER ION PUMP AND ELEC MULT
POWER SUPPLIES - BENDIX ELECTRO-OPTICS DIVISION

- LMS(T) SPECTROMETER SENSOR - UNIVERSITY OF TEXAS
DALLAS (UTD)

- LSG(L) GRAVIMETER MECHANICAL AND THERMAL
COMPONENTS - A. D. LITTLE

- LSG(LR) GRAVIMETER SENSOR - LACOSTE & ROMBERG

- LSP SEISMIC PROFILE EXPER. - BENDIX

- LSP SEISMIC PROFILE EXPER. - BULOVA ELECTRONICS

- LSP(G) SEISMIC PROFILE EXPER. GEOPHONES - GEOTECH

COMPOSITE NON-METALLIC MATERIALS LIST ALSEP ARRAY E

Description	Vendor/Spec	Designation	User	ATM 242	Comments
<u>Adhesives</u>					
Epoxy, Matched Expansion	Bacon Ind.	LCA-9/BA5	LSG(L)	---	
Epoxy, Silver Filled	Emer & Cum	56C/9	GU, CS (R)	120	
Urethane	Narmco	7343/7139	GU	110	
Acrylic	G. C. Elex	30-2	LSG(LR)	---	
Elastomer, Gasket	Permatex	---	LSG(LR)	---	
Epoxy	Tra-Con	Trabond BB-2129	LSG(LR)	---	
Epoxy	Shell	Epon 901/B-1	LSP CS	116	LMS
Epoxy	Armstrong	X-81	CS, CS(T)	119	LMS
Epoxy	C. H. Biggs	R380, R393	LSG(L)	---	Armature-Globe
Epoxy	Armstrong	A-271/Act. V	LEAM	---	Attach Mike to Quartz
Epoxy	Emer & Cum	Eccobond 45/15	LSP, CS (R)	123	
Epoxy, Filled	Wakefield	Deltabond 152	CS, LMS	113	LMS (UTD)
Epoxy, Filled	Bloomingtondale	Corfil 615	GU	103	
Silicone	Dow Corning	Silastic 140	CS, LSP	122	LMS LSG(L)
Silicone	Gen Elec Spd	RTV-615	LMS	---	
Epoxy, Clear	Emer & Cum	Eccobond 24	LMS(EOD)	---	
Ceramic	Sauereisen	#7	LMS(T)	---	
Epoxy	Varian	Torr-Seal	LMS(T)	---	
Silicone	Chomeric	Chobond 1029	CS	125	
ADH, Rubber-Base	3M	EC-1357	GU	118	
Epoxy	Shell	Epon VIII	LSP	112	
Epoxy	Narmco	3135/7111	LSP CS	109	
Silicone	Dow-Corning	DC-281	CS(R)	---	
Epoxy, Black	Emer & Cum	Eccobond 51	LEAM (Z)	---	
Epoxy Thixotropic	Emer & Cum	Eccobond 285	LEAM (Z)	---	
Film, Unsup'd, Epoxy-Phen	Bloomingtondale	FM-1000	LSG(L)	102	
Epoxy	Shell	Epon 923	LSG(L)	107	
Epoxy, Hi Temp	Shell	Epon 934	LSP(G)	108	
Film, Dacron Support, Epoxy-Phen	Narmco	Metlbond 329	CS	105	

Description	Vendor/Spec	Designation	User	ATM 242	Comments
<u>Elastomers</u>					
Gasket, Shielding, Filled	Chomerics	Cho-Seal 1215	CS(T)	213	
Gasket, Sheet, Fluorocarb	Dupont	Vitona	LSG(L)	211	LSP(B)
Gasket, Shielding, Formed	Chomerics	10-05-1362-1405	CS	---	
Gasket, Shielding, Formed	Chomerics	10-05-1363-1405	CS LSP	---	
Compound, Fluorocart					
"O" Ring	Parker	77-545	LSP(G)	211	Viton A
Compound, Silicone,					
"O" Ring	Parker	S-455	LSP(G)	---	
Compound, Butyl, "O" Ring	Parker	B318-7	LSG(L)	---	
Compound, Buna N, "O" Ring	Parker	N219-7	LSG(L)	---	

Description	Vendor/Spec	Designation	User	ATM 242	Comments
<u>Electrical Insulation</u>					
Tubing, Shrink, TFE	Penna Fluoro	Penntube-IL-SMT-XX	GU LSP(G)	321	CS(R)
Tape, Polyester/Silicone	Mystik	7300, 7305	GU CS(R)	309	
Tape, TFE/Silicone	Mystik	7510	LSP	1103	
Tubing TFE	Hi Temp	TUZ-XX	GU LSG(L)	301	Thin Wall
Tubing TFE	Hi Temp	TUY-XX	GU CS(T)	301	Med Wall MIL-I-22219
Varnish, Epoxy, Baking	P. D. George	12-0-12	LSG(L)	---	Armature-Globe
Varnish	Sterling	T653-LBH	LSG(L)	---	Armature-IMC
Tape, Polyester	Permacel	252	LSG(L)	---	Windings-Globe
Coating, Powder	Hysol	Hysol DK4	LSG(L)	---	Windings - IMC
Tape, Kapton-Silicone, 2-S	Mystik	7366	LSP, LMS	318	
PVFF, Shrink	Rayclad	Thermofit Kynar	GU	325	LSP
PVFF, Shrink	Alpha	Fit-350-XX	CS	325	
Tape, Telfon-Glass, Silicone	Conn Hd RBR	Temp R-Tape T	LSP	310	
Tape, Teflon-Silicone	3M	61	CS	319	
Tape, Teflon-Silicone	3M	62	LSP	320	
Tape, Kapton-Silicone	Mystik	7361	LEAM	318(S)	
Tape, Polyester, Permeable	3M	X1157	LEAM(Z)	---	
Tape, Polyester, Silicone, Red	Mystik	7331	LSP	309(S)	
Tape, Glass-Fiber, T-Set R	3M	27	LEAM(Z)	---	
Tape, Kapton-Silicone	Mystik	7362	LSP(G)	318(S)	
Tubing, Shrink, TFE	Alpha	Fit 500-10-8	LSG(L)	321(S)	(Mfr-Rayclad)
Tubing, Shrink, Polyolefin	Elec. Chem		LEAM(Z)	---	
Tape, Polyester/Silicone (two sided)	Mystic	7100	C/S & LSPE		

Description	Vendor/Spec	Designation	User	ATM 242	Comments
<u>Finishes, Coatings and Marking Materials</u>					
Polyester, Optical, White	3M	Nextel 401-A10	GU LSG(L)	401	LSP(G)
Polyester, Optical, Black	3M	Nextel 401-C10	GU	401	
Silicone, Thermal Control	IITRI	S-13-G	CS, LEAM(B)	414	LMS
Urethane, Clear	Thiokol	Southane 113/C- 113-300	LMS	412	
Ink	Independent	73-X	GU	403	LEAM(Z)
Urethane, Amber	Prod. Res.	PR-1538	GU	908	
Epoxy, 2-part	Wornow	Cat-L-Ink 50-XXX	GU LSG(L)	415	LEAM(Z) LSP(G)
Fluorocarbon	Dupont	954-1XX	LSP	420	"Teflon-S"
Urethane, Clear	Magna Chem	X-500/7C23	CS(R)	413	
Epoxy	Wornow	Series M	CS(R), CS(T)	---	
Coating, Low Friction, MOS2	Life-Lube		LSP(B)	---	
Epoxy	Pan Am Res	PC101	LSP(G)	---	
Coating, Thermal NAS102	IITRI	Z-93	LMS	416	
Primer, Silicone	GE SPD	SS-4120	LMS	---	

Description	Vendor/Spec	Designation	User	ATM 242	Comments
<u>Foams and Sponge</u>					
Urethane, Resin	Emer & Cum	FPH	CS LSP	511	LEAM(Z)
Urethane, Resilient	Upjohn	CPR-9800	LSP LMS	512	
Silicone, Resilient	Conn Hd Rbr	Cohrlastic R-10470	LSP LMS	508	CS(R) LSG(L)
Urethane, Resilient	Bernel	662000	LEAM(B)	---	
Urethane, Resin	Emer & Cum	FP/12-2	LSG LSP	510	
Urethane, Resin	Emer & Cum	FP/12-6	CS	510	
Urethane, Reticulated	Scott	Scottfoam60PP1	LSP	507	
Urethane, Rigid, Precast	Emer & Cum	Eccofoam SH/10#	LSP	514	

Description	Vendor/Spec.	Designation	User	ATM 242	Comments
<u>Lubricants and Grease</u>					
Oil, Engine	Mobil	RM 184A	LSG(LR)	---	MIL-L-7808
Grease, Fluorocarb	Dupont	Krytox 240AD	LSG(L)	612	LSP(B)
Oil, Fluorocarb	Dupont	Krytox 143AC	LSG(L)	---	
Film, Solid	Electrofilm	4396	LSG(L)	---	
Film, Solid, Bonded	Dow Corning	Molykote 321	LSP	610	
Grease, Heat Cond	Dow Corning	DC 340	LMS(T)	602	LSG(L)
			CS(T)		
Grease, Silicone	Dow Corning	DC 200	CS	---	
Oil Synthetic	H. Moebius & Fils	OL-219	LSP(B)	---	"Synta-Visco-Lube"
Powder, MOS 2	Dow Corning	Molykote Z	LSG(L)	601	
Grease, Polyolester	Wm. F. Nye	Ny-Gel 812	LSP (B)	---	

Description	Vendor/Spec	Designation	User	ATM 242	Comments
<u>Plastic Film</u>					
Polyester, Aluminized	NRC	NRC-2	CS	1012	LSG(L)
Polymide, Aluminized, 1S	G. T. S.	---	CS	1106	
Polyimide	Dupont	Kapton	GU LMS(T)	1106	LSG(L)
Polyester	Dupont	Mylar	LEAM(Z)	1012	
			LSP		
Film Aluminization	Vac Met	VMB-18	LMS, CS	---	Pure Aluminum
Fluorocarbon	Dupont	Teflon Fep	LSG(L)	1002	MIL-I-22242
Fluorocarbon TFE	Dielectrix	Fluorofilm DF1700	LSG(L)	1001(S)	
Polyester, Alum. 1S	Dupont	Mylar	LSM	1012	
Polyester Alum 2S	Dupont	Mylar	LSG(L)	1012	

Description	Vendor/Spec	Designation	User	ATM 242	Comments
<u>Plastic Laminate</u>					
Epoxy Glass	MIL-P-55617	Base GF	GU, LEAM(Z) 809		For M-L P. C. Boards
Glass-Cloth, Epoxy,					
B-Stage	MIL-G-55636	Base GF	GU, LEAM(Z) 810		For M-L P. C. Boards
Phenolic, Nylon Reinf	MIL-P-15047	Type NPG	CS	---	For P. C. Board Guides
Phenolic, Paper Base	MIL-P-3115	GR PBE	LSG(LR),	---	NEMA XXX, ADL-Fric.
			LSG(L)		Clutch
Epoxy, Glass, Sheet	MIL-P-18177	Type GEB	GU, CS(T)	807	NEMA G11 LEAM (Z)
					LSP(G)
Epoxy Glass Sheet	MIL-P-18177	Type GEE	CS(R)LSP	812	NEMA G10 LSG(L)
Epoxy Glass, CU-Clad	MIL-P-13949	Type GB	GU	813	NEMA G11
Epoxy Glass, CU-Clad	MIL-P-13949	Type GE	LMS	811	NEMA G10
Epoxy Glass, CU-Clad	MIL-P-13949	Type GF	LMS(T),	815	LMS
			CS(T)		
Epoxy Glass, Rod & Tube	L-P-509	Type IV GR G-11	GU	---	
Teflon Glass	3M	LX-6098	CS(R)	---	
Phenloc, Paper-Base, Rod	MIL-P-79	PBE	CS(R)	---	Coil Foam
Epoxy-Glass Sheet	Formica	FR-45	LSP(G)	814	
Epoxy-Glass, Rod & Tube	L-P-509	Type IV GR G10	LSP(G)	---	
Teflon-Glass	Rogers	Duroid 5813	LSG(L)	---	MSFC Acc

Description	Vendor/Spec	Designation	User	ATM 242	Comments
<u>Plastic Molding</u>					
Polyimide	Dupont	Vespel SP-1	LSG(LR)	1015	LSG(L)
Polimide, 30% Glass	Dupont	Vespel	LSG(LR)	1015	
Teflon TFE	Cadco	CT-505	LSG(LR)	1001	LEAM (Z) LSP LSG(L)
Polyamide (Nylon)	Dupont	Zytel 101	CS, LSP	706	Grommet, Rod
Diallyl Phthalate	Mesa	FS-5	LSG(L)	702	Brush Holder-Globe
Polycarbonate	Gen Elec	Lexan 101	LEAM, LSP	1017	(UTD) Markalon
			LMS		(Siemens) LSP(B)
Fluorocarbon	3M	Kel-F-81	LMS(T)	1003	

Description	Vendor/Spec	Designation	User	ATM 242	Comments
<u>Potting Compounds, Sealants, Encapsulants</u>					
Epoxy, Filled	Emer & Cum	Stycast 2850 FT	GU	915	
Epoxy, Filled	Emer & Cum	Stycast 2850 KT	CS LMS	924	
Urethane Black	Churchill	3C-900A	CS	---	For Connector 2331210
Silicone, 1-Part	Dow-Corning	RTV-3145	LSG(L)	922(S)	
Silicone	Prod Res	PR-1933-1/2	LSG(L)	926	
Epoxy, 2-Part	Emer & Cum	Stycast 3050	LSG(L)	---	Attachment-Librascope
Silicone, 1-Part	Dow-Corning	92-024	LMS, CS	922	LSP
Thread-Locking	Loctite	Screwlock 54-21	ADL(LR)	---	
Thread-Locking	Loctite	GR A, B, E, C, H	GU LSP(G)	918	CS(R) CS(T)
Urethane, Amber	Prod Res	PR-1538	GU, LEAM(Z)	908	For Connector 2331210
Silicone	Gen Elec SPD	RTV-560	CS, LMS	902	LSP(G)
Silicone	Gen Elec SPD	RTV-60	CS(R)	903	
Epoxy	3M	Scotchcast 221	CS(R)	---	
Epoxy	Shell	Epon 828	CS(T)	912	LSP(G)
Silicone	Gen Elec SPD	RTV 891	LEAM(Z)	921(S)	
Epoxy, Conductive	Frits	150	LEAM(Z)CS	---	
Silicone, 1-Part	Dow Corning	RTV-731	LSP(G)	921	
Silicone	GE SPD	RTV-11	LMS	---	
Primer, Silicone	Dow Corning	1200	LSG(L)	---	
Thread-Locking	Loctite	22-24	LSG(L)	---	
Silicone	GE	RTV-630	LSP(G)	---	

Description	Vendor/Spec	Designation	User	ATM 242	Comments
<u>Wire & Cable, Insulated, and Coaxial</u>					
Hookup 250V	MIL-W-16878	Type ET-XX	GU	307	LSP(GED)
Hookup 600V	MIL-W-16878	Type E-XX	GU LSG(L)	302	LMS(T) CS(T)
Cable, Flat Conductor	MSFC-Spec-220	C3720C30252H0023	BxA	331	
Cable, Flat Conductor		C39203 C30252H0023	LMS	331	
Cable, Flat Conductor		C47250C30252H0023	LSG	331	
Cable, Flat Conductor		C04035C30252H0023	CS	331	
Cable, Flat Conductor		C0710C30252H0023	CS	331	
Cable, Coax	MIL-C-17/93	RG-178B/U	LSP, CS(T)	328	
Cable, Coax	MIL-C-17/	RG188A/U	LSP, LSG	329	
Cable, Coax	MIL-C-17/	RG-196A/U	LSP, LSG	330	
Cable, Coax					
Wire, Magnet	MIL-W-583	Type M	CS	323	
Cable, 4 Conductor	Carolina Cable	90-34627-01		---	Geotech Part No.
Cable, Coax, Semi-Rigid	Precision Tube	BC50085	CS(T)	---	
Cable, Coax	Microdot	260-3824	LEAM(Z)	---	Teflon TFE & FEP
Wire Magnet	MIL-W-583	Type T2	LEAM(Z)	---	

Description	Vendor/Spec	Designation	User	ATM242	Comments
Miscellaneous					
Tape, Lacing Nomex	Gudebrod	721-S, 848-S	GU	1111	
Tape, Lacing, Nomex	Gudebrod	722-H, 848-H	GU	1111	
Thread, Polyester	Premier	V-69	LMS, LSP	1018	Thermal Bag
Tape, Thermal Control	G. T. S.	G-102700	CS	1110	
Tape, Thermal Control	G. T. S.	G-103500	LEAM	1110	
Fabric, Silk Habutae	Strassberger	S/905	LEAM, LSP	1113	LMS
Mica Sheet .006	Perfection	---	LSG(LR)	---	Inorganic
Cord, Polyester, Braided	Western Fil	Tuffbraid 180DOR	CS, LEAM	---	
Tape, Polyester, Braided	Western Fil	Tuffbraid 35DOF13	LMS	---	
Tape, Lacing, Teflon Glass	Western Fil	90LOF13A	LMS, CS	1107	CS(R)
Tape, Lacing, Teflon Glass	Western Fil	80LOF17A	LSP(G)	1107	
Tape, Lacing, Teflon Glass	Western Fil	50LOF13A	LSP(G)	1106	
Cord, Nylon Monofil			LEAM	1019	
Fastener, Hook	Velcro	765 TY II	LSP, LSG(L)	1101	MIL-F-21840
Fastener, Pile	Velcro	SA0145	LSP, LSG(L)	1101	MIL-F-21840
Tread, Friction, Less ADH	3M	Scotch Tred	LSP, LEAM	---	Prior ALSEP
Tape, Unsupported	3M	465	LSP	324	
Tape, Al Foil, Silicone	Mystik	7402	CS(R)	1103	
Tape, CU Foil,	3M	X1181	LEAM(Z)	---	
Label, Alum, Photosens	3M	Scotchcal8005	LSP(G)	---	Prior ALSEP
Tape, Lacing, Teflon Fiber	Gudebrod	231-H	CS(R)	---	
Cloth, Nylon, 1.2 oz	Howe & Gainbridge	Spec 3749	LSG(L)	1019	
Thread, Nylon	Hub Thread	K23	LSG(L)	1019	
Fabric, Silk Veil	Jordan Marsh	5527	LSG(L)	1113(S)	
Cloth, Dacron .006	Jordan Marsh	Carolon	LSG(L)	1018	
Cloth, Dacron .007	Jordan Marsh	Party Time	LSG(L)	1018	
Thread, Dacron	Hemingway & Bart	V A6 Dabond	LSG(L)	1018	