



BULLETIN 100
UMP-MT

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METAL MATERIALS

CODE	MATERIALS	SUFFIX	SPECIFICATION	TENSILE KSI	YIELD KSI	HARDNESS	ELONGATION	TEMP. RANGE
D	2024-T42 ALUMINUM CLAD	ALU-001	AMS-QQ-A-250/5	57000 KSI	34000 KSI	57 HRB MIN	15%	-65°F to +250°F
DK	5052-H32 1/4 HARD ALUMINUM BARE	ALU-002	AMS-QQ-A-250/8, ASTM B209	34000 KSI	28000 KSI		12%	
DL	6061- T6 ALUMINUM BARE	ALU-003	AMS 4025	42000 KSI	35000 KSI	95 HRB	10%	
	2024-T42 ALUMINUM BARE	ALU-004	AMS-QQ-A-250/4	62000 KSI	38000 KSI		15%	
	2024-T851 ALUMINUM BARE	ALU-005	AMS-QQ-A-250/4	67000 KSI	58000 KSI		5%	
	2024-T4 ALUMINUM CLAD	ALU-006	AMS-QQ-A-250/5	58000 KSI	36000 KSI	57 HRB MIN	15%	
NO-CODE	1008/1020 LOW CARBON STEEL	CRS-001	ASTM A 1008, ASTM A109 QQ-S-698	48000	25000	65 HRB MAX	32%	-65°F to +400°F
	1065/1-85 SPRING STEEL	CRS-002	A-A-51142					
	1074/1095 SPRING STEEL	CRS-003	QQ-S-700, AMS 5120, ASTM A 682, ASTM A 684					
C	302/304 STAINLESS STEEL	STA-001	AMS 5516, AMS 5513, ASTM A 167	75000	36000	92 HRB	40%	-320°F to +1300°F
	304 1/4 HARD STAINLESS STEEL	STA-002	AMS 5910	125000	75000	25 HRC	12%	
	301 FULL HARD STAINLESS STEEL	STA-003	AMS 5519	185000	140000	41 HRC	9%	
	316 STAINLESS STEEL	STA-004	AMS 5524	75000	30000	95 HRB MAX	40%	-320°F to +1600°F
SS	321 STAINLESS STEEL	STA-005	AMS 5510	70000	25000	95 HRB MAX	40%	-320°F to +1500°F
	321 1/8 HARD STAINLESS STEEL	STA-006						
	347 STAINLESS STEEL	STA-007	AMS 5512	100000	30000	92 HRB MAX	40%	
CS	4130 CMS ALLOY	STA-008	MIL-S-18729, AMS 6350	125000	75000	26HRC MIN	8%	
SS	301 1/4 HARD STAINLESS STEEL	STA-009	AMS 5517	125000	75000	25 HRC	25%	
CV	201 STAINLESS STEEL	STA-010	ASTM-A-666	95000	30000	95	40%	
SV	430 STAINLESS STEEL	STA-011	AMS 5503	65000	35000	86	20%	
CV	A286 STAINLESS STEEL	STA-012	AMS 5525	105000		90 HRB MAX	25%	
P	17-7 PH STAINLESS STEEL	177-001	AMS 5528	150000		34-39 HRC	6%	-320°F to +1900°F
	#625 INCONEL	INC-001	AMS 5599	120000	60000		30%	To +2000°F

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UMPC-M
CUSHION MATERIALS

CODE	MATERIAL	SUFFIX	SPECIFICATION	TYPE	COLOR	TEMPERATURE	APPROVED	APPLICATION DATA
						RANGE	SOURCE	
N, G	Neoprene	NEO-001	AMS3209	General Purpose	Black	-40° to 212°F		General usage cushion with excellent weather and ozone resistance and medium resistance to petroleum based hydraulic oil.
		NEO-002	AMS3209, MIL-C-8603	General Purpose Military	Black with Blue Identifier			
B		NEO-003	AMS3209, PLUS BIOCIDES	General Purpose	Black	-40° to 212°F		General usage cushion with Biocide. Excellent weather and ozone resistance and medium resistance to petroleum based hydraulic oil.
SR		NEO-004	AMS-R-3065 GRADE SC515, A1, B1, C1, E3, F2 ASTM D2000 M2BC510 A14 B14 C12 E034 F19 Z1 = 55 Shore	Ozone resistant	Black			
G		NEO-005	SAE J200 M2BC510, A14, B14, C12, E034, F17, G21	General Purpose	Black	-40° to 212°F		General usage cushion with added tear resistance. Excellent weather and ozone resistance and medium resistance to petroleum based hydraulic oil.
ER		NEO-006	AMS3209, MIL-C-8603, ASTM D 149	Dielectric	Black with Blue Identifier			
G		NEO-007	AMS3209, SAEJ200 M3BC710, C12, E034	General Purpose	Black	-40° to 212°F		General usage cushion with excellent weather and ozone resistance and medium resistance to petroleum based hydraulic oil.
TP		NEO-008	ASTM D2000 2AA 708, Z1, Z2	General Purpose	Black			
G, E	Ethylene Propylene	ETH-001	SAE J200 M3BA710, C12	General Purpose Automotive	Black	-40° to 212°F		General usage cushion with excellent weather and ozone resistance and medium resistance to phosphate ester hydraulic oil.
E		ETH-002	MIL-C-8603 (EPR)	Hydraulic Fluid Resistant	Solid Purple	-65° to 275°F		For applications requiring resistance to phosphate ester hydraulic oils. Good weather and ozone resistance.
EPT		ETH-003	MIL-C-85052/2	Hydraulic Fluid / Skydrol Resistant	Solid Purple			
EL		ETH-004	SAE J200 M3BA710, C12	General Purpose Automotive	White	-40° to 212°F		General usage cushion with excellent weather and ozone resistance and medium resistance to phosphate ester hydraulic oil.
AG		ETH-005	SAE J200 M3BA510, C12	General Purpose Automotive	Black			
AGR		ETH-006	SAE J200 M3BA510, C12	General Purpose Automotive	Black	-40° to 212°F		Same as ETH-005 with additional requirements for electrical resistance of: 2 x 10 ⁹ ohms.
		ETH-007	SAE J200 M3BA610, C12	General Purpose Automotive	Black			
EC		ETH-008	SAE J200 M3BA710, C12	General Purpose Automotive	Black	-40° to 212°F		Same as ETH-001 with additional requirements for electrical resistance of: 5 MEGA ohms.
ME		ETH-009	ASTM D2000 M2BA510, A14, F17, Z	General Purpose Automotive	Black			
R		ETH-010	DMS 1849 TYPE 1 CLASS II	Hydraulic Fluid Resistant	Black	-65° to 250°F		For applications requiring resistance to phosphate ester hydraulic oils. Good weather and ozone resistance.
TE		ETH-011	ASTM D2000 2AA 708, Z1	General Purpose Automotive	Black	-40° to 212°F		Tensile Strength 800 psi min (ASTM D412) Elong @ Break 200-400 ASTM D412 Tensile Modulus @100% Elongation 400-600 psi (ASTM D412) Shore A Hardness 75 ± 5 (ASTM D2240) Specific Gravity 0.960 ± .030 gm/cm3 (ASTM D792) Z1 = Compression Set @Room Temp/Time: 22 hrs (ASTM D395B) @ 25% Max.
EE		ETH-012	ASTM D2000 M8BA707, A14, C12, F17, Z1, Z2	Electrically Resistant	Gray			
F	Nitrile Butadiene	NIT-001	AMS3215 (NBR)	Fuel Resistant	Solid Yellow	-40° to 212°F		For applications requiring resistance to aromatic fuels. Fair resistance to weather and ozone. Not recommended where subjected to light.
		NIT-002	MIL-C-8603 (NBR)	Fuel Resistant Military	Solid Yellow			
FR		NIT-003	MIL-C-85052/1	Fuel Resistant Military	Solid Yellow	-65° to 275°F		Poor resistance to sunlight, ozone, and weather. Will have extended life in fuel cells.
MR		NIT-004	AMS-R-3065, SB610, A, B, F2 ASTM D200 M5BG610, A14, B14, F19			-65° to 275°F		Low volume swell in low Aniline-point petroleum based oils or fuels.
NB		NIT-005	MIL-DTL-85052/1	Fuel Resistant Military	Solid Yellow			
FRT		NIT-006	MIL-C-85052/1	Fuel Resistant Military	Solid Yellow			Poor resistance to sunlight, ozone, and weather. Will have extended life in fuel cells. Batch Testing for Ozone and Compression sets.



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CUSHION MATERIALS

CODE	MATERIAL	SUFFIX	SPECIFICATION	TYPE	COLOR	TEMPERATURE	APPROVED	APPLICATION DATA
						RANGE	SOURCE	
H	Silicone	SIL-001	AMS 3303	General Purpose Heat Resistant 100 psi Minimum Tear	Red/Orange	-80° to 450°F		Excellent for moderate temperature extremes. Superior weather and ozone resistance.
HW		SIL-002	AMS3303, MIL-C-8603	General Purpose Heat Resistant Military, 100 psi Minimum Tear	Natural White			
		SIL-003	AMS3310	General Purpose Heat Resistant Military	Natural White			
		SIL-004	GE24449	Heat and Moderate Hydraulic Fluid Resistant, High Strength High Tear	Solid Gray	-80° to 500°F		
HB		SIL-005	PWA36450, AMS3352	Military High Strength and High Temperature, Fiberglass Reinforced	Brown	-65° to 600°F		Excellent fluid, fire and corrosion resistance
HT		SIL-006	MIL-C-85052/3, AMS 3316	Military High Strength and High Temperature, Fabric Reinforced	Light Blue	-65° to 500°F		Excellent resistance to most fluids, fuels, oils.
S		SIL-007	AMS3347, A-A-59588-3A50	High strength	Red/Orange	-103° to 401°F		Resistance to weathering and high-aniline-point petroleum based oils
HL		SIL-008	BMS 1-63, BMS 1-72		White	-65° to 450°F		
		SIL-009	A-A-59588, CL.2B, GD. 50-70	Reinforced glass fabric				
		SIL-010	BMS 1-46 GRADE 50					
		SIL-011	AMS 3349		Red/Orange			
		SIL-012	BPS-C-163 TYPE I	Not supported	Solid Gray			
HR		SIL-013	AMS-R-3065 TA612, B3, E1, F3 GMZ MSFC-1018	Fabric Reinforced Flamability Requirement	Pink			Fabric Reinforced Flamability Requirement
HS		SIL-014	AMS 3303	Glass Fabric Reinforced	Red/Orange	-85° to 401°F		Glass Fabric Reinforced
HA		SIL-015	ZZ-R-765, CL.2A, GD.80 A-A-59588-2A80	General Purpose Heat Resistant Military	Red/Orange	-80° to 425°F		Resistant to extreme high temperature.
J	Fluorosilicone	FLU-001	AMS-R-25988, TY II, CL 1, GRADE 60	Fuel Resistant (Elastomeric)	Solid Blue	-65° to 400°F		Good aromatic fuel resistance and oil resistance. Not recommended for hydraulic type oils.
JS		FLU-002	AMS-R-25988, TY II, CL 2, GRADE 50	Fuel Resistant (Elastomeric) High Strength	Solid Blue			Good aromatic fuel resistance and oil resistance. Not recommended for hydraulic type oils. High Strength
JR		FLU-003	AMS-R-25988, TY II, CL 1, GRADE 60	Fuel Resistant (Elastomeric) Glass Fabric Reinforced	Solid Blue			Good aromatic fuel resistance and oil resistance. Not recommended for hydraulic type oils.
T, K	Teflon	TEF-001	AMS 3652	Fuel Resistant Plastic Skived	White	-90° to 450°F		Excellent resistance to most fluids, fuels, oils, etc., within temperature limits specified. Also available anti-slip treated.
X		TEF-002	AMS3652, AMS 2491	Fuel Resistant Plastic Anti-Slip	Brown			
		TEF-003	AMS 3652	Fuel Resistant Plastic Machined Channel	White			
T, K		TEF-004	AMS 3660	Fuel Resistant Plastic Machined Inserts	White			
		TEF-005	AMS 3660, L-P-403	Fuel Resistant Plastic Molded Wedge	White			
T		TEF-006	AMS 3656	Fuel Resistant Plastic Extruded Tubing	White			
P		TEF-007	BPS-C-155, AMS 3677	PTFE Impregnated PBI Glass Blend Fabric	Brown	550°		
		TEF-008	BAC 3112-1P	PTFE Impregnated PBI Flextra				
P	Laminate Phenolic	PHE-001	MIL-I-24768/14	Cotton fabric base Phenolic resin	Brown			Good moisture resistance and mechanical strength. Good dielectric properties.
	Plastic	PLA-001	Plastisol MIL-P-20689 (PVC), A-A-59464	General Purpose Plastic	Black	-0° to 200°F		Anti-Abrasion for general purpose applications. Available in dip coat only.
	PVC	PVC-001	AMS3630	Flexible	Black			
()	CRES	CRE-001	Knitted Wire Mesh AMS 5697	High Temperature Resistant	Silvery Gray			Metallic, Type 300 series stainless steel for elevated temperature use. Somewhat abrasive.
FG	GLASS FIBER	GLS-001	Braided Glass Fiber	High Temperature Resistant With Aluminized Resin	Silvery Gray			High Temperature



BULLETIN 100
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MATERIAL PROCESSES

TYPE	SUFFIX	SPECIFICATION	DESCRIPTION
ANODIZE	ANO-001	MIL-A-8625	TYPE II, CLASS 1 (CLEAR)
	ANO-002		TYPE I, CLASS 1, 1 COAT PRIMER BMS 10-11 TYPE I
	ANO-003		TYPE I, CLASS 1, 2 COATS PRIMER PER TT-P-1757
	ANO-004		TYPE I, CLASS 1, FUEL TANK COAT PER MIL-C-27725
	ANO-005		TYPE I, CLASS 1 (CLEAR)
	ANO-006		TYPE I, CLASS 1 & 1 COAT PRIMER BMS 10-11 TY I (GREEN)
	ANO-007		TYPE II, CLASS 2, COLOR BLACK, FED-STD-595
	ANO-008		TYPE II, CLASS 2, COLOR BROWN #30219
	ANO-009		ONE COAT WHITE ENAMEL BMS 10-11 TYPE I #702
BALL BURNISH AND PASSIVATE	BAL-001	AMS 2700, ASTM A 967	METHOD 1, TYPE 2
	BAL-002		METHOD 1, TYPE 6
CADMIUM PLATE	CAD-001	AMS-QQ-P-416	TYPE I, CLASS 1 (BRIGHT)
	CAD-002		TYPE I, CLASS 3 (BRIGHT)
	CAD-003		TYPE I, CLASS 2 (BRIGHT)
	CAD-004		TYPE I, CLASS 1 (BRIGHT) & BAKE 3 HRS @375°
	CAD-005		TYPE I, CLASS 2 (BRIGHT) & BAKE 3 HRS @375°
	CAD-006		TYPE II, CL 2 (GOLD)
	CAD-007		TYPE I, CL 3 (GOLD)
	CAD-008		TYPE II, CL 3 (GOLD)
	CAD-009		TYPE II, CLASS 2 (GOLD) & BAKE 3 HRS @375°
	CAD-010		TYPE I, CLASS 3 (GOLD) & BAKE 3 HRS @375°
	CAD-011		AMS2400, AMS2759
CAUSTIC ETCH	CAU-001	NONE	CAUSTIC ETCH
CHEMICAL FILM	CHE-001	MIL-DTL-5541	TYPE I, CLASS 1A, (COLOR APPROX GOLD)
	CHE-002		TYPE I, CLASS 3 (COLOR GOLD)
	CHE-003		TYPE I, CLASS 1A, & 1 COAT PRIMER MMS 405, COLOR #34151 (GREEN)
	CHE-004		TYPE I, CLASS 1A, & 2 COATS PRIMER PER MIL-P-23377
	CHE-005		TYPE I, CLASS 1A & PRIME BMS 10-11 TY I PER BAC5736
	CHE-006		TYPE I, CLASS 1A & ORGANIC COATING, BMS 10-20, TP II
HEAT TREAT	HEA-001	AMS 2550, AMS 2759	HEAT TREAT TO RC 30-38, DRY HONE TO CLEAN
	HEA-002		HEAT TREAT TO RC 32-36, DRY HONE TO CLEAN
	HEA-100	(AMS-H-6088), AMS 2770, AMS 2771, AMS 2772	HEAT TREAT TO CONDITION T-81, RE 69 MIN
	HEA-101		HEAT TREAT TO CONDITION T-42 RE 91 MIN
	HEA-102		HEAT TREAT TO CONDITION T-6, RE 85 MIN
	HEA-103		HEAT TREAT TO CONDITION T-6, RE 96 MIN
	HEA-104		HEAT TREAT TO CONDITION T-72 TEMPER, (62,000 PSI MIN)
	HEA-200	AMS 2759, AMS-H-6875	HEAT TREAT & NORMALIZE (SCALE FREE) RC 12-26
	HEA-201		HEAT TREAT & PRECIPITATION HARDEN RC 24 MIN
	HEA-202		HEAT TREAT & STRESS RELIEVE TO TH1100 COND., RC 32-40
	HEA-203		HEAT TREAT & STRESS RELIEVE TO TH1100 COND., RC 31 -39
	HEA-204		HEAT TREAT & STRESS RELIEVE TO TH1100 COND., RC 34-39
	HEA-205		HEAT TREAT TO RC 10-27 SCALE FREE (LITE SAND BLAST)
	HEA-206		HEAT TREAT TO RC 32-38 SCALE FREE (LITE SAND BLAST)
	HEA-207		HEAT TREAT TO RC 32-40, DRY HONE TO CLEAN
	HEA-208		HEAT TREAT TO SPRING TEMPER, RC 44-50
HEA-209	HEAT TREAT TO R15N (60/83)		
HEA-300	PWA 11-32	HEAT TREAT & PRECIPITATION HARDEN PER PWA 11-32, RC 24 MIN	
PASSIVATE	PA-001	AMS 2700, ASTM A 967	METHOD 1, TY. 6, CL. 1
	PA-002		PASSIVATE & BAKE @ 350/400°F FOR 3 HOURS
	PA-003	AMS 2700	METHOD 1, TY. 2, CL. 1
	PA-004	AMS-QQ-P-35/AMS 2700	METHOD 1, TY. 7, CL. 1, NITRIC ACID 20-25%(120-140°)
	PA-005	AMS-QQ-P-35/AMS 2700	METHOD 1, TYPE 6, CLASS 4
PAVCOAT SUPERSEAL	PAV-001	NONE	PAVCOAT SUPERSEAL
PLASTISOL COAT	PLA-001	MIL-P-20689, A-A-59464	TYPE I, CLASS 2, PLASTISOL COAT .03/.06 THICK PER B/P, BLACK
NEOPRENE COAT	PLA-002		NEOPRENE LATEX DIP COAT ALL SURFACES .005/.015 THICK
SODIUM TREAT	SOD-001	AMS 2491	SODIUM TREAT
ZINC PLATE	ZIN-001	ASTM B633	FE/ZN 13, TY II, .0005 GOLD (HEXAVALENT)
	ZIN-002		FE/ZN 13, TY III, .0005 BRIGHT (HEXAVALENT)
	ZIN-003		FE/ZN 13, TY II, .0005 BLACK (HEXAVALENT)
	ZIN-004		FE/ZN 8, TY II, .0003 GOLD (HEXAVALENT)
	ZIN-005		FE/ZN 8, TY III, .0003 BRIGHT (HEXAVALENT)
	ZIN-006	BAC5637, AMS 2417	ZINC-NICKEL TYPE II
	ZIN-007	TT-C-490, TT-P-1757	ZINC PHOSPHATE & 1 COAT ZINC CHROMATE PRIMER
	ZIN-100	ASTM B633, GM 4345	FE/ZN 13 TY II .0005 GOLD, REF. GM 4345-12D144/48
	ZIN-101		FE/ZN 13 TY II .0005 RED, REF. GM 4345-12D144/48
	ZIN-200		FE/ZN 13 TY III, .0005 BRIGHT, REF. GM 4345-9K96/0
	ZIN-201		FE/ZN 8, TY II, .0003 GOLD, REF. GM 4345-M6D96/48
	ZIN-300	GMW 3044, CEMS G-20, IFP-8, 12424710	8K240/120X, 8 Mu MIN THICKNESS & SEALER BRIGHT TRIVALENT
	ZIN-301	GMW 4700	8 um MIN THICKNESS & SEALER BRIGHT TRIVALENT ZINC-NICKEL, TYPE A (480 HR SS)
	ZIN-302		8 um MIN THICKNESS & SEALER BRIGHT TRIVALENT ZINC-NICKEL, TYPE B (1000 HR SS)
	ZIN-400	WSS-M21P17-B1	8 um MIN THICKNESS & SEALER BRIGHT TRIVALENT ES2751
	ZIN-401	CORROLUX 550	8 um MIN THICKNESS & SEALER BRIGHT TRIVALENT (480 HR SS)
	ZIN-402		12 um MIN Total S439 WSS-M21P37-A1, GMW3359 TYPE A SILVER (1000 HR SS)
	ZIN-403	MAGNII 565	12 um MIN Total S439 WSS-M21P37-A1, GMW3359 TYPE B SILVER (480 HR SS)
	ZIN-500		FE/ZN 13, TY II, .0005 GOLD & SUPERSEAL (HEXAVALENT)
	ZIN-501	ASTM B633	FE/ZN 5, TY V, .0002 BRIGHT & SUPERSEAL TRIVALENT 49-00005-503
ZIN-502		FE/ZN 8, TY VI, .0003 GRAY & SUPERSEAL TRIVALENT	

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