

NOTES:

1. SCOPE
 - 1.1 THIS SPECIFICATION COVERS AN INERT COMPOUND USED TO INERT FILL VERY SHALLOW WATER (VSW) HUNTING TARGETS. THIS INERT FILLER IS DESIGNED TO REPLICATE BOTH PHYSICAL PARAMETERS (WEIGHT, VOLUME) AND ACOUSTIC PROPERTIES (IMPEDANCE, TARGET STRENGTH) OF ITS EXPLOSIVE COUNTERPART.
2. APPLICABLE DOCUMENTS
 - 2.1 ISSUES OF DOCUMENTS. THE FOLLOWING DOCUMENTS OF THE ISSUE IN EFFECT ON THE DATE OF INVITATION OF BIDS FORM A PART OF THIS SPECIFICATION TO THE EXTENT SPECIFIED.
STANDARDS:
INDUSTRIAL
ANSI Y14.5 DIMENSIONING AND TOLERANCING
ASTM D1980 TEST FOR ACID VALUE OF FATTY ACIDS AND POLYMERIZED FATTY ACIDS
ASTM D1962 TEST FOR SAPONIFICATION VALUE OF DRYING OILS, FATTY ACIDS AND POLYMERIZED FATTY ACIDS
ASTM D1957 TEST FOR HYDROXYL VALUE OF FATTY OILS AND ACIDS
ASTM D127 TEST FOR DROP MELTING POINT OF PETROLEUM WAX, INCLUDING PETROLATUM
ASTM D1959 TEST FOR IODINE VALUE OF DRYING OILS AND FATTY ACIDS
ASTM D1321 TEST FOR NEEDLE PENETRATION OF PETROLEUM WAXES
ASTM D2669 APPARENT VISCOSITY OF PETROLEUM WAXES COMPOUND WITH ADDITIVES (HOT MELTS)
ASTM E28 TEST FOR SOFTENING POINT BY RING-AND-BALL APPARATUS
ASTM D465 TEST FOR ACID NUMBER OF ROSIN
ASTM D464 TEST FOR SAPONIFICATION NUMBER OF ROSIN
ASTM D3951 COMMERCIAL PACKAGING
MILITARY
ASQC Z1.4 SAMPLING PROCEDURES AND TABLES FOR INSPECTION BY ATTRIBUTES
MIL-STD-123 MARKING FOR SHIPMENT AND STORAGE
(COPIES OF SPECIFICATIONS AND STANDARDS REQUIRED BY CONTRACTOR IN CONNECTION WITH SPECIFIC PROCUREMENT FUNCTIONS SHOULD BE OBTAINED FROM THE PROCURING ACTIVITY, OR AS DIRECTED BY THE CONTRACTING OFFICER.)
3. REQUIREMENTS
 - 3.1 THE INERT FILLER, HEREAFTER CALLED FILLER E, IS AN INERT FILLER USED TO REPLICATE THE DENSITIES OF THE EXPLOSIVES TNT OR HBX-3. FILLER E CONSISTS OF A MIXTURE OF GYPSUM, WOOD ROSIN AND CASTER WAX (STEARIC ACID), WITH DIFFERENT AMOUNTS OF EACH FOR THE TWO EXPLOSIVE TYPES. THE COMPOUND RATIOS FOR TNT AND HBX-3 ARE SHOWN IN TABLE 1.
 - 3.2 TNT HAS A THEORETICAL MAXIMUM DENSITY (TMD) OF 1.637 G/CC WHILE HBX IS 1.85 G/CC. THE COMPOUND RATIOS CITED ABOVE YIELD A DENSITY WHICH IS 98% OF THE TMD TO ALLOW FOR THE LOWER DENSITIES ACHIEVED THROUGH CASTING AND PRESSING PROCESSES.

- 3.3 COMPOUND REQUIREMENTS
 - 3.3.1 DEAD BURNED GYPSUM. THE DEAD BURNED GYPSUM SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
 - 3.3.1.1 TOTAL WATER CONTENT. THE TOTAL WATER CONTENT OF THE DEAD BURNED GYPSUM SHALL BE 1.0% MAXIMUM AS DETERMINED BY 4.3.1.1.
 - 3.3.1.2 GRANULATION (WET). NINETY SEVEN (97.0) PERCENT MINIMUM OF THE DEAD BURNED GYPSUM SHALL PASS THROUGH NO. 325 U.S. STANDARD SIEVE, AS DETERMINED BY 4.3.1.2.
 - 3.3.1.3 FOREIGN MATERIAL. THE DEAD BURNED GYPSUM SHALL BE FREE FROM EXTRANEOUS FOREIGN MATERIAL SUCH AS METALS, WOOD, MINERALS AND OTHER DEBRIS, AS DETERMINED BY 4.3.1.3.
 - 3.3.2 GLYCERYL ESTER OF 12-HYDROXY STEARIC ACID. THE GLYCERYL ESTER OF 12-HYDROXY STEARIC ACID SHALL CONFORM TO THE FOLLOWING REQUIREMENTS, AS DETERMINED BY 4.3.2.
 - 3.3.2.1 MAXIMUM ACID NUMBER. THE MAXIMUM ACID NUMBER SHALL NOT EXCEED 4.0, AS DETERMINED BY 4.3.2.1.
 - 3.3.2.2 MAXIMUM PERCENT ALKALINITY. THE MAXIMUM PERCENT ALKALINITY MEASUREMENT IS NOT APPLICABLE.
 - 3.3.2.3 SAPONIFICATION NUMBER. THE SAPONIFICATION NUMBER SHALL BE 175 - 185, AS DETERMINED BY 4.3.2.2.
 - 3.3.2.4 MINIMUM HYDROXYL VALUE. THE MINIMUM HYDROXYL VALUE SHALL BE 154, AS DETERMINED BY 4.3.2.3.
 - 3.3.2.5 MELTING POINT (DEGREES C). THE MELTING POINT (DEGREES C) SHALL BE 83 - 90, AS DETERMINED BY 4.3.2.4.
 - 3.3.2.6 MAXIMUM IODINE NUMBER. THE MAXIMUM IODINE NUMBER SHALL BE 4, AS DETERMINED BY 4.3.2.5.
 - 3.3.2.7 MINIMUM PENETRATION (0.1MM) @ 77°F. THE MINIMUM PENETRATION (0.1MM) @ 77°F SHALL BE 2, AS DETERMINED BY 4.3.2.6.
 - 3.3.2.8 CENTIPOISE VISCOSITY @ 200°F MAX. THE CENTIPOISE VISCOSITY @ 200°F MAX SHALL BE 24, AS DETERMINED BY 4.3.2.7.
 - 3.3.2.9 CENTIPOISE VISCOSITY @ 250°F MIN. THE CENTIPOISE VISCOSITY @ 250°F MIN SHALL BE 16, AS DETERMINED BY 4.3.2.8.
 - 3.3.2.10 PERCENT MAXIMUM EXUDATION (160°F). THE PERCENT MAXIMUM EXUDATION (160°F) SHALL BE 3.0, AS DETERMINED BY 4.3.2.9.
 - 3.3.3 WOOD ROSIN. THE WOOD ROSIN SHALL BE OBTAINED FROM THE OLEORESIN CONTAINED IN DEAD WOOD SUCH AS STUMPS AND KNOTS. THE WOOD ROSIN SHALL CONFORM TO THE FOLLOWING REQUIREMENTS, AS DETERMINED BY 4.3.3.

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	-	ORIGINAL ISSUE.	020718	N.G.J.(S)

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TABLE 1. FILLER E COMPOUND RATIOS

COMPOUND	TNT (%)	HBX-3 (%)
DEAD BURNED GYPSUM	61.60	72.90
GLYCERYL ESTER OF 12-HYDROXY STEARIC ACID (CASTER WAX)	33.40	22.10
WOOD ROSIN	5.00	5.00

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CRITICAL <u>NONE</u>		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ANGLES ± 0°30' FRACTIONS ± 1/32 DECIMALS ± .05, .XX, .02, .XXX, .010 BROKEN EDGES .015 MAX. FILLETS .015 R MAX. PART SHALL BE FREE OF BURRS SURFACE ROUGHNESS		PROJECT TARGETS	
MAJOR <u>NONE</u>		DO NOT SCALE THIS DRAWING		Drawn B. DELMAR (S) 02/06/27	
REVISION SHEET		THIRD ANGLE PROJECTION		Engr/Degn A. BROWN (S) 02/07/19	
REV STATUS OF SHEETS		7449539 7449513		Checked R. FAGG (S) 02/07/18	
10 9 8 7 6 5 4 3 2 1		7449534 7449516		Approved	
		NEXT ASSY USED ON		APPROVED FOR CSS DATE	
		APPLICATION		SIZE CAGE NO. DWG. NO. REV.	
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				APPROVED FOR NAVSEA DATE	
				DAVID L. BUCKER (S) 02/07/19	
				SIGNATURE AUTH SER. PMS490-L/119 09 MAR 2001	
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