NOT MEASUREMENT SENSITIVE

P-D-680B
INTERIM AMENDMENT 2 (AS)
16 May 1995
SUPERSEDING
INTERIM AMENDMENT 1 (AS)
20 December 1994

FEDERAL SPECIFICATION

DRY CLEANING AND DEGREASING SOLVENT

This interim amendment was developed by the Naval Air Systems Command for the Department of the Navy, Department of Defense based upon currently available technical information.

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1.1: Delete and substitute:

"1.1 Scope. Dry cleaning and degreasing solvent consists of five types of petroleum distillates for dry cleaning fabrics and for degreasing painted or unpainted metal parts during equipment maintenance or repair. Some of the low residue types (Type IA or IIA) contain terpene solvents."

1.2: Delete and substitute:

"1.2 Classification. Dry cleaning and degreasing solvent shall be of the following types:

Type I	Regular (Flash point ≥ 38°C) (Military Symbol SD-1)
Type IA	Low residue (Flash point ≥ 38°C)
Type II	High flash point (Flash point ≥ 60°C) (Military Symbol SD-2)
Type IIA	Low residue (Flash point ≥ 60°C)
Type III	Very high flash point (Flash point ≥ 93°C) with low odor (Military Symbol SD-3)"

1.2.1: Delete and substitute:

"1.2.1 NATO classification.

Type I	- S-752
Type IA	- None
Type II	- S-753
Type IIA	- None
Type III	- None

AMSC N/A
DISTRIBUTION STATEMENT A: Approved for Public release; distruution is unlimited.

FSC 6850

Table I. Dry Cleaning and Degreasing Solvent Properties.

CHARACTERISTICS	TYPE I	TYPE IA	TYPE II	TYPE IIA	TYPE III
Flash point, °C, min	38.0(100°F)	38.0(100°F)	60.0(140°F)	60.0(140°F)	93.3(200°F)
Distillation, °C:					
Initial boiling pt., min	149	* 120	177	* 150	220
50% recovered	Report	-	Report	-	Report
Dry point, °C, max	208	* 210	211	* 230	295
Aniline point, °C	57 to 74	-	57 to 74	-	73 TO 89
Kauri-Butanol value	29 to 45	* 37 minimum	29 to 45	* 37 minimum	27 TO 45
Allowable constituents, (percent by volume: 1/					
(a) Solvent with olefinic or cyclo-olefinic unsaturation, max	5	0.8	5	0.8	0.8
(b) Aromatic compounds with eight or more carbon atoms, except ethyl benzene, max	8	0.8	8	0.8	0.8
(c) Total of ethylbenzene, toluene and branched chain ketones, max	20	1	20	1	1
(d) Total of (a)+(b)+(c), max	20	1	20	1	1
Total chlorine content (ppm), max	100	100	100	100	100
Total phenol content (ppm), max	0.5	0.5	0.5	0.5	0.5
Apparent specific gravity	0.754 to 0.820	* 0.75 to 0.95	0.754 to 0.820	*0.75 to 0.95	0.754 to 0.820
Non-volatile residue, (mg/100ml), max 2/	10	2.5	10	2.5	10
Color, min	25	30	25	30	30
Odor 3/	Characteristic & non-residual	Low & non residual	Characteristic & non-residual	Low & non residual	Low & non residual
Corrosion copper, max 4/	2A	2A	2A	2A	2A
Acidity	Neutral	Neutral	Neutral	Neutral	Neutral
Doctor test	Negative	Negative	Negative	Negative	Negative
Vapor pressure, Torr @ 20°C, max	-	7	-	5	0.40
Evaporation rate, min 6/	-	0.20	-	0.030	-
Viscosity, cSt @ 25°C, max	-	-	-	-	5.0
Acrylic, polycarbonate compatibility 5/	-	" Report	-	* Report	-
Dielectric strength, kV, max	-	20.0	-	-	-

Footnotes to Table I:

1/ These maximum limits are as defined in Rule 102, South Coast Air Quality Management district regulations.
2/ For Types IA and IIA, non-volatile residues shall be determined using ASTM Method F331 as modified in Table II.
3/ Samples of P-D-680 having satisfactory odor characteristics shall be used as reference standards.
4/ Test for three hours at 100°C.
* 5/ Use acrylic specimen A, loaded to 3000 psi and tested for 8 hours, and polycarbonate specimen (machined from MIL-P-83310 plastic) of the same dimensions, loaded to 2000 psi and tested for 2 hours
* 6/ Butylacetate = 1.0

Footnote to Table II:

1/ Except that: a) maximum water bath temperature shall be 85°C and vacuum may be reduced to less than 5 mm Hg; b) acetone shall be used as rinse solvent to transfer residue; c) sample shall be dried to constant weight in an oven maintained at 105°C; and d) results shall be reported as mg/100 ml.2/ Except that the calculation shall be the "dry time" of the reference solvent divided by the "dry time" of the test material.3/ Using acrylic Specimen A.

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6.1: Delete and substitute:

"6.1 Intended use. These solvents are hydrocarbon solvents, some of which are used in the dry cleaning and coatings industry and most of which are used in the military as degreasers and cleaners for painted or unpainted metal parts."

Insert new paragraph after 6.1.1:

"6.1.1.1 Type IA. Type IA is a relatively fast evaporating low residue solvent compatible with acrylic and polycarbonate plastic, and having a high dielectric strength. Ventilation is required to prevent the accumulation of flammable solvent vapors."

Insert new paragraph after 6.1.2:

"6.1.2.1 Type IIA. Type IIA is a slower evaporating (than Type IA), low residue solvent. Ventilation is required to prevent the accumulation of combustible vapors."

6.3: Add to Table III:

Type	Size/Unit of Issue	Military Symbol/ NATO Code	NSN	Dash Number
IA	1 Gallon (Gl)	None		13
IA	5 Gallon (Cn)	None		14
IA	55 Gallon (Dr)	None		15
IIA	1 Gallon (Gl)	None		16
IIA	5 Gallon (Cn)	None		17
IIA	55 Gallon (Dr)	None		18

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