CONTRACT C REQUIREMENTS-REVISION-B

PRON: M1XEX5ED01 AMC: AMSC:

TDPL: 12991140:19200 TDPL DATE: 12/10/2024

NSN: 1376-01-489-1519 NOMENCLATURE : COAI(PROP PAP7993 F/CHRG,PROP,155MM,M231

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
12999545	--	--	XX
1948-4172	--	--	XX
1948-4174	--	--	XX
ACV00561	--	--	XX
ACV00831	--	--	XX

Safety

SD	ADD	DELETE
238		X
320		X

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

Product Engineer:

Potassium sulfate MIL-DTL-193C is in the revision process and will replace MIL-DTL-193B.

MIL-STD-100G has been canceled. Future requirements for engineering drawings should refer to the following American Society of Mechanical Engineers (ASME) standards and Appendices.

MIL-STD-105 has been canceled. Future acquisitions may refer to MIL-STD-1916.
ÿ
Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-B

PRON: M1XEX5ED02 AMC: AMSC:

TDPL: 13010119:19200 TDPL DATE: 12/10/2024

NSN: 1376-01-526-6467 NOMENCLATURE : COAI-PRPLT M31A2,CHG,PROP,155MM, M232A1

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
12999545	--	--	XX
1948-4172	--	--	XX
1948-4174	--	--	XX
ACV00561	--	--	XX
ACV00831	--	--	XX

Safety

SD	ADD	DELETE
10161	X	
238		X
320		X

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

Product Engineer:

Potassium sulfate MIL-DTL-193C is in the revision process and will replace MIL-DTL-193B.

MIL-D-218B has been canceled without replacement. Reference this specification for testing.

Carbon black (A-A-59317)
A-A-59317 replaced canceled MIL-C-306C. A-A-59317 calls out ASTM test methods RFAAP does not have the capability to test in accordance with all the methods listed. RFAAP follows the methods given in MIL-C-306C with exceptions to bulk density and acetone extraction test methods.

MIL-STD-100G has been canceled. Future requirements for engineering drawings should refer to the following American Society of Mechanical Engineers (ASME)
standards and Appendices.

MIL-STD-105 has been canceled. Future acquisitions may refer to MIL-STD-1916.
ÿ
Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-B

PRON: M1XEX5ED03 AMC: AMSC:

TDPL: 12993885:19200 TDPL DATE: 12/10/2024

NSN: 1376-01-489-1755 NOMENCLATURE : COAI(PRPLLANT M30A1 F/USE IN CHRG,PRPLLN

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
12999545	--	--	XX
1948-4172	--	--	XX
1948-4174	--	--	XX
ACV00561	--	--	XX
ACV00831	--	--	XX

Safety

SD	ADD	DELETE
318	X	
773	X	
238		X

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):
320 X

Product Engineer:

MIL-DTL-156:
Lab exception 1: RFAAP uses atomic absorption spectroscopy for calcium, magnesium, and sodium determinations, MIL-DTL-156D utilizes ICP-OES.
Lab exception 2: RFAAP utilizes the method specified in MIL-P-156B for chlorates and perchlorates determination.
Lab exception 3: RFAAP utilizes ferrous ammonium sulfate for nitrogen determination, instead of ferrous sulfate as written in MIL-DTL-156D.

MIL-STD-100G has been canceled. Future requirements for engineering drawings should refer to the following American Society of Mechanical Engineers (ASME) standards and Appendices.

MIL-STD-105 has been canceled. Future acquisitions may refer to MIL-STD-1916.
ÿ
Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED04 AMC: AMSC:

TDPL: MIL-DTL-60318-T2:19200 TDPL DATE: 12/10/2024

NSN: 1376-00-009-0041 NOMENCLATURE : PROPELLANT, M1

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
12999545	--	--	XX
1948-4172	--	--	XX
1948-4174	--	--	XX
ACV00561	--	--	XX
ACV00831	--	--	XX

Add the following Packing and Marking drawings to this TDP:

9381476 - Packing and Marking for Container, Steel for Bulk Propellants
9381477- Packing and Marking for Container, Fiber and Bulk Propellants
9345265 - Container, Steel
12972488- Container, Fiber

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES ___NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

Change DWG. 9345265, REV. F, 1 of 2,
Zone D7, Note 2, G
From : MIL-P-23377, MIL-P-85582, MIL-P-53022, or MIL-P-53030
To : MIL-PRF-23377, MIL-PRF-85582, MIL-DTL-53022 or MIL-DTL-53030

Change DWG. 12972488, REV A
Zone D4, Delete Note 1

Safety

SD	ADD	DELETE
31	X	
408	X	
439	X	
482	X	
773	X	
238		X
320		X

Product Engineer:

MIL-D-204 has been canceled. Future acquisition of this material should refer to Commercial Item Description A-A-59256.
Lab exception 1: Solidification Point - MIL-D-204A calls out apparatus with cork stoppers. RFAAP uses rubber stoppers. RFAAP observes the temperature rise and records the maximum temperature obtained as the end point.
Lab exception 2: Acidity - MIL-D-204A indicates benzene is used to dissolve the sample. RFAAP uses toluene.
Lab exception 3: Moisture and Volatile Matter - MIL-D-204A indicates a watch glass is used for holding the sample during drying in a desiccator containing calcium chloride evacuated to 380 ± 20mm Hg . RFAAP uses an aluminum dish dried in a vacuum oven.

MIL-D-218B has been canceled without replacement. Reference this specification for testing.

Potassium sulfate MIL-DTL-193C is in the revision process and will replace MIL-DTL-193B.

Lead carbonate MIL-DTL-18618 replaced MIL-L-18618.

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
MIL-DTL-244	--	--	XX
A-A-59256	--	--	XX
MIL-D-218	--	--	XX
MIL-DTL-193	--	--	XX
MIL-DTL-18618	--	--	XX
MIL-DTL-98	--	--	XX

ÿ

ENGINEERING EXCEPTION TEXT (CONTINUED):

Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-B

PRON: M1XEX5ED05 AMC: AMSC:

TDPL: MIL-DTL-60318-T1:19200 TDPL DATE: 12/10/2024

NSN: 1376-00-009-0042 NOMENCLATURE : PROPELLANT, M1

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
12999545	--	--	XX
1948-4172	--	--	XX
1948-4174	--	--	XX
ACV00561	--	--	XX
ACV00831	--	--	XX

Add the following drawings Packing and Marking drawings to this TDP:

9381476 - Packing and Marking for Container, Steel for Bulk Propellants
9381477- Packing and Marking for Container, Fiber and Bulk Propellants
9345265 - Container, Steel
12972488- Container, Fiber

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):
Change DWG. 9345265, REV. E, 1 of 2,
Zone D7, Note 2, G
From : MIL-P-23377, MIL-P-85582, MIL-P-53022 or MIL-P-53030
To : MIL-PRF-23377, MIL-PRF-85582, MIL-DTL-53022 or MIL-DTL-53030

Change DWG. 12972488, REV A
Zone D4: Delete Note 1

Safety

SD	ADD	DELETE
31	X	
408	X	
439	X	
482	X	
773	X	

Product Engineer:

MIL-D-204 has been canceled. Future acquisition of this material should refer to Commercial Item Description A-A-59256.
Lab exception 1: Solidification Point - MIL-D-204A calls out apparatus with cork stoppers. RFAAP uses rubber stoppers. RFAAP observes the temperature rise and records the maximum temperature obtained as the end point.
Lab exception 2: Acidity - MIL-D-204A indicates benzene is used to dissolve the sample. RFAAP uses toluene.
Lab exception 3: Moisture and Volatile Matter - MIL-D-204A indicates a watch glass is used for holding the sample during drying in a desiccator containing calcium chloride evacuated to 380 ± 20mm Hg . RFAAP uses an aluminum dish dried in a vacuum oven.

MIL-D-218B has been canceled without replacement. Reference this specification for testing.

Potassium sulfate MIL-DTL-193C is in the revision process and will replace MIL-DTL-193B.

Lead carbonate MIL-DTL-18618 replaced MIL-L-18618.

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
MIL-DTL-244	--	--	XX
A-A-59256	--	--	XX
MIL-D-218	--	--	XX
MIL-DTL-193	--	--	XX
MIL-DTL-18618	--	--	XX
MIL-DTL-98	--	--	XX

ÿ
Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

ENGINEERING EXCEPTION TEXT (CONTINUED):

On TDPL change date for MIL-DTL-60318 to 03/03/2023.

CONTRACT C REQUIREMENTS-REVISION-C

PRON: M1XEX5ED06 AMC: AMSC:

TDPL: MIL-P-63404:19200 TDPL DATE: 12/10/2024

NSN: 1376-01-053-9370 NOMENCLATURE : PROPELLANT M6,FOR USE IN CHG,PROP,155MM,

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
12999545	--	--	XX
1948-4172	--	--	XX
1948-4174	--	--	XX
ACV00561	--	--	XX
ACV00831	--	--	XX
9381477	--	--	XX
9381476	--	--	XX

Safety

SD	ADD	DELETE
31	X	

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

408	X	
438	X	
482	X	
773	X	
238		X
320		X
491		X

Product Engineer:
TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
MIL-DTL-98	--	--	XX
MIL-D-218	--	--	XX
MIL-C-216	--	--	XX
MIL-DTL-244	--	--	XX
MIL-DTL-204	--	--	XX

M6 propellant: MIL-P-63404 is currently in revision process and will be replaced by MIL-DTL-63404A.

MIL-A-48078, MIL-STD-105, MIL-STD-109, MIL-STD-1235, and MIL-STD-414 to be replaced by MIL-STD-1916 (DOD Preferred Methods for Acceptance of Product) in revision MIL-DTL-63404A.

MIL-C-63405 is currently in the revision process.

MIL-D-204 has been canceled. Future acquisition of this material should refer to Commercial Item Description A-A-59256.
Lab exception 1: Solidification Point - MIL-D-204A calls out apparatus with cork stoppers. RFAAP uses rubber stoppers. RFAAP observes the temperature rise and records the maximum temperature obtained as the end point.
Lab exception 2: Acidity - MIL-D-204A indicates benzene is used to dissolve the sample. RFAAP uses toluene.
Lab exception 3: Moisture and Volatile Matter - MIL-D-204A indicates a watch glass is used for holding the sample during drying in a desiccator containing calcium chloride evacuated to 380 ± 20mm Hg . RFAAP uses an aluminum dish dried in a vacuum oven.

MIL-D-218B has been canceled without replacement. Reference this specification for testing.
ÿ
Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED08 AMC: AMSC:

TDPL: MIL-P-48099:19200 TDPL DATE: 12/10/2024

NSN: 1376-01-055-8598 NOMENCLATURE : PROPELLANT, M10

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
12999545	--	--	XX
1948-4172	--	--	XX
1948-4174	--	--	XX
ACV00561	--	--	XX
ACV00831	--	--	XX

Add the following drawings Packing and Marking drawings to this TDP:

9381476 - Packing and Marking for Container, Steel for Bulk Propellants
9381477- Packing and Marking for Container, Fiber and Bulk Propellants
9345265 - Container, Steel
12972488- Container, Fiber

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

Replace all references of MIL-C-70469 with A-A-59402
Replace all references of ASTM A525 with ASTM A123
Change DWG. 9345265, REV. E, 1 of 2,
Zone D7,
Note 2, G(a) From:"…COLOR BUFF PER UNIVERSAL CO. 6-96-515A."
To:"…. COLOR BUFF PER UNIVERSAL CO. 6-96-515A, STERILKOTE 46 108T56RS OR EQUIVALENT."

Note 2, G From :" … SUBSTITUTED FOR MIL-P-23377, MIL-P-85582, MIL-P-53022 or MIL-P-53030."
To : "….SUBSTITUTED FOR MIL-PRF-23377, MIL-PRF-85582, MIL-DTL-53022 or MIL-DTL-53030."

Change DWG. 12972488, REV A
Zone D4: Delete Note 1

Safety

SD	ADD	REMOVE
31	X	
408	X	
773	X	
238		X
320		X

Product Engineer:

Add MIL-STD-1916, DOD Preferred Methods for Acceptance of Product

Add MIL-DTL-244, nitrocellulose

Add MIL-DTL-193, potassium sulfate
Potassium sulfate MIL-DTL-193C is in the revision process and will replace MIL-DTL-193B.

Add MIL-DTL-98, diphenylamine
ÿ
Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED09 AMC: AMSC:

TDPL: 13015504:19200 TDPL DATE: 12/10/2024

NSN: 1376-01-546-3736 NOMENCLATURE : COAI - PROPELLANT M64 SINGLE-PERFORATED

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Safety

SD	ADD	REMOVE
10161	X	
238		X
320		X

Product Engineer:

AKARDITE II or METHYL DIPHENYLUREA (DOD-M-64040A)
Lab exception 1: Moisture - DOD-M-64040A specifies that the moisture determination be in accordance with MIL-STD-286 Method 101.5 (Karl Fischer moisture). RFAAP follows this protocol but allows the Karl Fischer system to be either one component or two components. It also allows the use of pyridine-free

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

reagents, and the titer value of the Karl Fischer reagent may be as high as 5 mg/mL.
Lab exception 2: Ash - RFAAP wets the sample with ethanol before igniting over a Bunsen burner.
Lab exception 3: Chloride Content - RFAAP allows the use of an alternate gravimetric method for the determination of chloride content in addition to the ion selective electrode method.

Potassium sulfate MIL-DTL-193C is in the revision process and will replace MIL-DTL-193B.

MIL-STD-100G has been canceled. Future requirements for engineering drawings should refer to the following American Society of Mechanical Engineers (ASME)
standards and Appendices.
ÿ
Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

Packaging:
Change DWG. 12972488, REV A
Zone D4: Delete Note 1

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
12999545	--	--	XX
ACV00561	--	--	XX
ACV00831	--	--	XX

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED10 AMC: AMSC:
TDPL: 13015503:19200 TDPL DATE: 12/10/2024
NSN: 1376-01-546-3733 NOMENCLATURE : COAI - PROPELLANT M64 MULTI-PERFORATED

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Safety

SD	ADD	REMOVE
10161	X	
238		X
320		X

Product Engineer:

AKARDITE II or METHYL DIPHENYLUREA (DOD-M-64040A)
Lab exception 1: Moisture - DOD-M-64040A specifies that the moisture determination be in accordance with MIL-STD-286 Method 101.5 (Karl Fischer moisture). RFAAP follows this protocol but allows the Karl Fischer system to be either one component or two components. It also allows the use of pyridine-free

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):
reagents, and the titer value of the Karl Fischer reagent may be as high as 5 mg/mL.
Lab exception 2: Ash - RFAAP wets the sample with ethanol before igniting over a Bunsen burner.
Lab exception 3: Chloride Content - RFAAP allows the use of an alternate gravimetric method for the determination of chloride content in addition to the ion selective electrode method.

Potassium sulfate MIL-DTL-193C is in the revision process and will replace MIL-DTL-193B.

MIL-STD-100G has been canceled. Future requirements for engineering drawings should refer to the following American Society of Mechanical Engineers (ASME)
standards and Appendices.
ÿ
Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

Packaging
Change DWG. 12972488, REV A
Zone D4: Delete Note 1

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
12999545	--	--	XX
ACV00561	--	--	XX
ACV00831	--	--	XX

CONTRACT C REQUIREMENTS GENERIC SECTION C

PRON: M1XEX5ED11 AMC: AMSC: ATC:

TDP: 87012A1115 TDPL DATE:

NSN: 1376-01-590-0313 NOMENCLATURE : PROPELLANT GRAIN F/MK126 RKT MTR (A

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Utilize UNAPPROVED, RED LINE drawings 87012A1115, 87012A1116, and 87012A1117 for this procurement.

GFM/GFE: DRAWING NO.

0

MYLARS REQUIRED (Check One): ☐ YES ☒ NO

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	[redacted]		[redacted]		
Eng Act	Type/Print Name	Signature/Concurrence	Date	Office Symbol	DSN Telephone

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED12 AMC: AMSC:

TDPL: MIL-P-17689:19200 TDPL DATE: 12/10/2024

NSN: 1376-01-055-5971 NOMENCLATURE : PROPELLANT, DOUBLE-BASE SHEET, TYPE N-5

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Packaging:
TDPL:

DOCUMENT	ADD	DELETE
9204826	X	
9204827	X	
8796522	X	
12999545	X	
9204244	X	

Product Engineer:

MIL-STD-105 and MIL-STD-414 have been canceled. Future acquisitions may refer to MIL-STD-1916.

Candelilla was (JAN-W-181) updated to MIL-DTL-181.

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED13 AMC: AMSC:

TDPL: MIL-DTL-32322:19200 TDPL DATE: 12/10/2024

NSN: 9999-99-999-9999 NOMENCLATURE : PROPELLANT, M9 FLAKE

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Packaging:
TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
12999545	--	--	XX
1948-4172	--	--	XX
1948-4174	--	--	XX
ACV00561	--	--	XX
ACV00831	--	--	XX
13021759	--	--	XX
13021897	--	--	XX

Product Engineer:

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES ___NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

(Potassium Nitrate, MIL-DTL-156)
Lab exception 1: RFAAP uses atomic absorption spectroscopy for calcium, magnesium, and sodium determinations, MIL-DTL-156D utilizes ICP-OES.
Lab exception 2: RFAAP utilizes the method specified in MIL-P-156B for chlorates and perchlorates determination.
Lab exception 3: RFAAP utilizes ferrous ammonium sulfate for nitrogen determination, instead of ferrous sulfate as written in MIL-DTL-156D.

Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-B

PRON: M1XEX5ED15 AMC: AMSC:

TDPL: MIL-P-48089:19200 TDPL DATE: 12/10/2024

NSN: 1376-01-053-9368 NOMENCLATURE : PROPELLANT, M5 /FOR USE IN SPECIAL APPLI

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

On TDPL, cover sheet 2 number 8, change the Distribution Statement from D to C.
On TDPL for MIL-DTL-162 change the Distribution Statement from D to C.

Packaging:
TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
12999545	--	--	XX
1948-4172	--	--	XX
1948-4174	--	--	XX
ACV00561	--	--	XX
ACV00831	--	--	XX
12525172	--	--	XX
12525173	--	--	XX
8794342	--	--	XX

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

9211788	--	--	XX

_____

SAFETY:

HCSDS	ADD	DELETE
238		X
320		X

_____

Product Engineer:

MIL-STD-1235 was canceled without replacement. Future acquisitions may refer to MIL-STD-1916.

(Potassium Nitrate, MIL-DTL-156)
Lab exception 1: RFAAP uses atomic absorption spectroscopy for calcium, magnesium, and sodium determinations, MIL-DTL-156D utilizes ICP-OES.
Lab exception 2: RFAAP utilizes the method specified in MIL-P-156B for chlorates and perchlorates determination.
Lab exception 3: RFAAP utilizes ferrous ammonium sulfate for nitrogen determination, instead of ferrous sulfate as written in MIL-DTL-156D.

(Barium Nitrate, MIL-DTL-162)
Lab exception 1: RFAAP is unable to comply with the ICP-OES methods for quantitating strontium and calcium. The gravimetric methods for these elements described in MIL-B-162D are used.

From TDPL: Ethyl alcohol - MIL-E-463 was canceled 30-SEP-1998, future acquisition of this material should refer to Commercial Item Description A-A 59342.

Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-B

PRON: M1XEX5ED16 AMC: AMSC:

TDPL: 13053606:19200 TDPL DATE: 12/10/2024

NSN: 9999-99-999-9999 NOMENCLATURE : PROPELLANT, JA2 7-PERF GRANULAR, CYLINDR

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
12999545	--	--	XX
1948-4172	--	--	XX
1948-4174	--	--	XX
ACV00561	--	--	XX
ACV00831	--	--	XX
9381477	--	--	XX
9381476	--	--	XX

Packaging

Section C

Drawing 13074472 needs to be added to the Packaging Section, because in addition

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):
to having the propellant requirements, it also has the packaging requirements for the propellant.

Product Engineer:

AKARDITE II or METHYL DIPHENYLUREA (DOD-M-64040A)
Lab exception 1: Moisture - DOD-M-64040A specifies that the moisture determination be in accordance with MIL-STD-286 Method 101.5 (Karl Fischer moisture). RFAAP follows this protocol but allows the Karl Fischer system to be either one component or two components. It also allows the use of pyridine-free reagents, and the titer value of the Karl Fischer reagent may be as high as 5 mg/mL.
Lab exception 2: Ash - RFAAP wets the sample with ethanol before igniting over a Bunsen burner.
Lab exception 3: Chloride Content - RFAAP allows the use of an alternate gravimetric method for the determination of chloride content in addition to the ion selective electrode method.

Magnesium oxide
MIL-M-51103 was canceled 16-OCT-1998 and replaced by A-A-59302.
Lab exceptions; RFAAP follows the test methods in MIL-M-51103. Calcium oxide content is measured by atomic absorption spectroscopy instead of by the gravimetric method described in MIL-M-51103A.

Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED17 AMC: AMSC:

TDPL: 13051227:19200 TDPL DATE: 12/10/2024

NSN: 1376-01-D01-3479 NOMENCLATURE : PROPELLANT, SCDB

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
13011569	--	--	XX
10521856	--	--	XX
12525173	--	--	XX
12982865	--	--	XX
12999545	--	--	XX
8794342	--	--	XX
9345265	--	--	XX
ACV00561	--	--	XX
1948-4172	--	--	XX
1948-4174	--	--	XX
ACV00831	--	--	XX
9381476	--	--	XX
TL-1376-589	XX	--	--

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

Product Engineer:

AKARDITE II or METHYL DIPHENYLUREA (DOD-M-64040A)
Lab exception 1: Moisture - DOD-M-64040A specifies that the moisture determination be in accordance with MIL-STD-286 Method 101.5 (Karl Fischer moisture). RFAAP follows this protocol but allows the Karl Fischer system to be either one component or two components. It also allows the use of pyridine-free reagents, and the titer value of the Karl Fischer reagent may be as high as 5 mg/mL.
Lab exception 2: Ash - RFAAP wets the sample with ethanol before igniting over a Bunsen burner.
Lab exception 3: Chloride Content - RFAAP allows the use of an alternate gravimetric method for the determination of chloride content in addition to the ion selective electrode method.

Magnesium oxide
MIL-M-51103 was canceled 16-OCT-1998 and replaced by A-A-59302.
Lab exceptions; RFAAP follows the test methods in MIL-M-51103. Calcium oxide content is measured by atomic absorption spectroscopy instead of by the gravimetric method described in MIL-M-51103A.

Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-B

PRON: M1XEX5ED18 AMC: AMSC:

TDPL: 13051228:19200 TDPL DATE: 12/10/2024

NSN: 1376-01-D01-6160 NOMENCLATURE : PROPELLANT, STICK, DEGN

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
TL-1376-589	XX	--	--
13051227	--	--	XX
QS13051227	--	--	XX
9381477	--	--	XX
9384176	--	--	XX
12999545	--	--	XX
1948-4174	--	--	XX
1948-4172	--	--	XX
ACV00561	--	--	XX
ACV00831	--	--	XX

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES ___NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

Product Engineer:

AKARDITE II or METHYL DIPHENYLUREA (DOD-M-64040A)
Lab exception 1: Moisture - DOD-M-64040A specifies that the moisture determination be in accordance with MIL-STD-286 Method 101.5 (Karl Fischer moisture). RFAAP follows this protocol but allows the Karl Fischer system to be either one component or two components. It also allows the use of pyridine-free reagents, and the titer value of the Karl Fischer reagent may be as high as 5 mg/mL.
Lab exception 2: Ash - RFAAP wets the sample with ethanol before igniting over a Bunsen burner.
Lab exception 3: Chloride Content - RFAAP allows the use of an alternate gravimetric method for the determination of chloride content in addition to the ion selective electrode method.

Magnesium oxide
MIL-M-51103 was canceled 16-OCT-1998 and replaced by A-A-59302.
Lab exceptions; RFAAP follows the test methods in MIL-M-51103. Calcium oxide content is measured by atomic absorption spectroscopy instead of by the gravimetric method described in MIL-M-51103A.

Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-B

PRON: M1XEX5ED19 AMC: AMSC:

TDPL: 13033596-1:19200 TDPL DATE: 12/10/2024

NSN: 9999-99-999-9999 NOMENCLATURE : PROPELLANT, RPD-596

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

SAFETY

SD	ADD	DELETE
26	X	

Packaging
TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
9381476	--	--	XX
1948-4172	--	--	XX
1948-4174	--	--	XX
ACV00831	--	--	XX

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

13074472	--	--	XX

Product Engineer:
TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
ASTM D 329	--	--	XX

RPD-596 propellant drawing (13074472) references graphite QAP and drawing (12982931)
Lab exceptions: RFAAP complies with the MIL-DTL-155C for moisture, ash, silica, free sulfur, and workmanship testing.

Carbon black (A-A-59317)
A-A-59317 replaced canceled MIL-C-306C. A-A-59317 calls out ASTM test methods RFAAP does not have the capability to test in accordance with all the methods listed. RFAAP follows the methods given in MIL-C-306C with exceptions to bulk density and acetone extraction test methods.

AKARDITE II or METHYL DIPHENYLUREA (DOD-M-64040A)
Lab exception 1: Moisture - DOD-M-64040A specifies that the moisture determination be in accordance with MIL-STD-286 Method 101.5 (Karl Fischer moisture). RFAAP follows this protocol but allows the Karl Fischer system to be either one component or two components. It also allows the use of pyridine-free reagents, and the titer value of the Karl Fischer reagent may be as high as 5 mg/mL.
Lab exception 2: Ash - RFAAP wets the sample with ethanol before igniting over a Bunsen burner.
Lab exception 3: Chloride Content - RFAAP allows the use of an alternate gravimetric method for the determination of chloride content in addition to the ion selective electrode method.

Acetone (ASTM D 329)
Lab exception 1: Alkalinity - ASTM D1614-09 provides directions for making standard solutions of sulfuric acid. RFAAP uses NIST traceable sulfuric acid solutions.
Lab exception 2: Acidity - ASTM D1613-06 provides directions for making standard solutions of sodium hydroxide. RFAAP uses NIST traceable sodium hydroxide solutions.
Lab exception 3: Moisture – Commercially available Karl Fischer reagent and pyridine-free solvent are used, demonstrated to be functionally equivalent to those specified in ASTM D1364.

Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-B

PRON: M1XEX5ED20 AMC: AMSC:

TDPL: 13074472:19200 TDPL DATE: 12/10/2024

NSN: 9999-99-999-9999 NOMENCLATURE : PROPELLANT, RPD-596

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

SAFETY

SD	ADD	DELETE
26	X	

Packaging

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
9381476	--	--	XX
1948-4172	--	--	XX
1948-4174	--	--	XX
13074472	--	--	XX

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

ACV00831	--	--	XX

Product Engineer:
TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
ASTM D 329	--	--	XX

RPD-596 propellant drawing (13074472) references graphite QAP and drawing (12982931)
Lab exceptions: RFAAP complies with the MIL-DTL-155C for moisture, ash, silica, free sulfur, and workmanship testing.

Carbon black (A-A-59317)
A-A-59317 replaced canceled MIL-C-306C. A-A-59317 calls out ASTM test methods RFAAP does not have the capability to test in accordance with all the methods listed. RFAAP follows the methods given in MIL-C-306C with exceptions to bulk density and acetone extraction test methods.

AKARDITE II or METHYL DIPHENYLUREA (DOD-M-64040A)
Lab exception 1: Moisture - DOD-M-64040A specifies that the moisture determination be in accordance with MIL-STD-286 Method 101.5 (Karl Fischer moisture). RFAAP follows this protocol but allows the Karl Fischer system to be either one component or two components. It also allows the use of pyridine-free reagents, and the titer value of the Karl Fischer reagent may be as high as 5 mg/mL.
Lab exception 2: Ash - RFAAP wets the sample with ethanol before igniting over a Bunsen burner.
Lab exception 3: Chloride Content - RFAAP allows the use of an alternate gravimetric method for the determination of chloride content in addition to the ion selective electrode method.

Acetone (ASTM D 329)
Lab exception 1: Alkalinity - ASTM D1614-09 provides directions for making standard solutions of sulfuric acid. RFAAP uses NIST traceable sulfuric acid solutions.
Lab exception 2: Acidity - ASTM D1613-06 provides directions for making standard solutions of sodium hydroxide. RFAAP uses NIST traceable sodium hydroxide solutions.
Lab exception 3: Moisture – Commercially available Karl Fischer reagent and pyridine-free solvent are used, demonstrated to be functionally equivalent to those specified in ASTM D1364.

Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-B

PRON: M1XEX5ED22 AMC: AMSC:

TDPL: 12956320-1:19200 TDPL DATE: 12/10/2024

NSN: 1376-01-373-5883 NOMENCLATURE : PROPELLANT, M865 & M724A2

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
MIL-P-70956	--	--	XX

SAFETY

SD	ADD	DELETE
1912	X	

Packaging

TDPL:

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES ___NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

DOCUMENT	DELETE	SUBSTITUTE	ADD
9381476	--	--	XX
1948-4172	--	--	XX
1948-4174	--	--	XX
ACV00831	--	--	XX
12956320	--	--	XX

Product Engineer:

M14 propellant drawing (12956320) references graphite QAP and drawing (12982931) Lab exceptions: RFAAP complies with the MIL-DTL-155C for moisture, ash, silica, free sulfur, and workmanship testing.

Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED23 AMC: AMSC:

TDPL: MIL-B-45451:19200 TDPL DATE: 12/10/2024

NSN: 1376-00-764-8063 NOMENCLATURE : BENITE STRANDS

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Product Engineer:

MIL-STD-1235 was canceled without replacement. Future acquisitions may refer to MIL-STD-1916.

(Potassium Nitrate, MIL-DTL-156)
Lab exception 1: RFAAP uses atomic absorption spectroscopy for calcium, magnesium, and sodium determinations, MIL-DTL-156D utilizes ICP-OES.
Lab exception 2: RFAAP utilizes the method specified in MIL-P-156B for chlorates and perchlorates determination.
Lab exception 3: RFAAP utilizes ferrous ammonium sulfate for nitrogen determination, instead of ferrous sulfate as written in MIL-DTL-156D.

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):
(Ethyl Centralite, MIL-DTL-255)

Charcoal, A-A-59138
JAN-C-178, referenced in MIL-B-45451, was canceled 25-SEP-1998. Future acquisition for this material should refer to Commercial Item Description A-A-59138.

Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS

PRON: M1XEX5ED24 AMC: AMSC:

TDPL: 9240825:19203 TDPL DATE: 12/10/2024

NSN: 1340-01-055-2782 NOMENCLATURE : FILM, INHIBITING

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
ASTM D569	XX	--	--

Product Engineer:

- MIL-STD-105, referenced in MIL-F-63463 and MIL-P-63462, was canceled 06-FEB-2008. Future acquisitions may refer to MIL-STD-1916.
- MIL-STD-1188, referenced in TDPL, was canceled 31-JAN-1984 without replacement. ASTM D3951 shall be used.

Packaging:

Change MIL-F-63463 amendment 2 Paragraph 5.1

FROM:"Shipping containers may be selected from Table V of MIL-P-14232 for

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES ___NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

applicable level of protection”
TO: “Shipping containers may be selected from Table C of MIL-STD-2073-1 for applicable level of protection”

CONTRACT C REQUIREMENTS GENERIC SECTION C

PRON: M1XEX5ED27 AMC: AMSC: ATC:

TDP: AS3028 TDPL DATE:

NSN: NOMENCLATURE : PROPELLANT, DOUBLE-BASE, NOSIH-AA-6

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Utilize DTLAS3028 Rev. E.

GFM/GFE: DRAWING NO.

0

MYLARS REQUIRED (Check One): ☐ YES ☒ NO

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	[redacted]		[redacted]		
Eng Act	Type/Print Name	Signature/Concurrence	Date	Office Symbol	DSN Telephone

CONTRACT C REQUIREMENTS GENERIC SECTION C

PRON: M1XEX5ED29 AMC: AMSC: ATC: USAF

TDP: 200610330 TDPL DATE:

NSN: 9999-99-999-9999 NOMENCLATURE : 30MM PROPELLANT FOR THE GAU-8 SERIE

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

THE FOLLOWING DOCUMENTS ARE APPLICABLE TO THIS PROCUREMENT: TDP 200610330, REV C, DATED 13 JAN 2025.

1) 200610330 Rev C DWG
2) SP200610304 Rev C

GFM/GFE: DRAWING NO.

0

MYLARS REQUIRED (Check One): ☐ YES ☒ NO

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature/Concurrence	Date	Office Symbol	DSN Telephone
Eng Act	[redacted]	[redacted]	[redacted]		

REVISIONS

REV	DESCRIPTION	DATE	APPROVED
A	SEE EO NO. 06A1693	061109	RICK HARRISON
B	SEE EO NO. 07A0941	070814	RICK HARRISON
C	SEE EO NO. 15A0218-H	160804	LZPEX-HILL

NOTES: UNLESS OTHERWISE SPECIFIED

1. SP200610304 APPLIES.
2. WEIGHT PERCENT NITROCELLULOSE EQUALS 100 PERCENT MINUS TOTAL PERCENT OF NOTED INGREDIENTS. ANALYSIS OF NOTED INGREDIENTS IS BASED ON TOTAL VOLATILES, GRAPHITE AND DUST FREE BASIS.
3. SUFFICIENT AMOUNT OF FLASH SUPPRESSANT GRAINS, TABLE II, SHALL BE UNIFORMLY BLENDED WITH PROPELLANT GRAINS, TABLE I, TO PRODUCE TOTAL POTASSIUM SALT CONTENT IN FINAL BLEND ON 1.90 TO 2.20 WEIGHT PERCENT.
4. ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED FOR USE IN THE APPLICATION(S) SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WIHTOUT PRIOR TESTING AND APPROVAL BY THE AIR FORCE ACTIVITY HAVING THE ENGINEERING RESPONSIBLITY FOR THE ITEM.
5. DRAWING PREPARED IAW ASME Y14.100 INCLUDING APPENDICES B THRU E.

TABLE II FLASH SUPPRESANT GRAINS

CHEMICAL AND PHYSICAL REQUIREMENTS	AFP-001	XPR65K1
NITROCELLULOSE, MIL-DTL-244, GRADE C, TYPE 1	REMAINDER WT PCT	N/A
NITROCELLULOSE, MIL-DTL-244, GRADE A, TYPE 1	N/A	REMAINDER WT PCT
DIPHENYLAMINE, MIL-D-98	.2 WT PCT MIN (2)	.2 WT PCT MIN (2)
POTASSIUM NITRATE	61.0 TP 69.0 WT PCT (2)	N/A (2)
POTASSIUM SULFATE	N/A (2)	58.0 TO 62.0 WT PCT (2)
RESIDUAL SOLVENT	1.10 WT PCT MAX	1.10 WT PCT MAX
TOTAL VOLATILES	2.35 WT PCT MAX	2.35 WT PCT MAX
PHYSICAL CHARACTERISTICS (INCHES)		
A. AVERAGE OUTSIDE DIAMETER	.069 NOMINAL	.064 NOMINAL
B. AVERAGE LENGTH	.088 NOMINAL	.087 NOMINAL
C. AVERAGE WEB THICKNESS	.027 NOMINAL	.024 NOMINAL
D. AVERAGE PERFORATION DIAMETER	.015 NOMINAL	.016 NOMINAL

APPROVED SOURCE(S) OF SUPPLY	
VENDOR	VENDOR PART NO.
ATK AMMUNITION & ENERGETICS RADFORD ARMY AMMUNITION PLANT P.O. BOX 1, ROUTE 114 RADFORD, VA 24143-0100	AFP-001
EXPRO TECHNOLOGIES INC. 55 MASSON STREET ST. THIMOTHIE, QUEBEC J6C 4V9 CANADA	SPDN XPR83C1 XPR65K1

TABLE 1: PROPELLANT GRAIN
SINGLE BASE, EXTRUDED, SINGLE PERFORATED

CHEMICAL AND PHYSICAL REQUIREMENTS	AFP-001	SPDN	XPR83CI
NITROCELLULOSE, MIL-DTL-244, GRADE C, TYPE 1	REMAINDER WT PCT	REMAINDER WT PCT	REMAINDER WT PCT
DIPHENYLAMINE, MIL-D-98	.75 TO 1.25 WT PCT (2)	.75 TO 1.25 WT PCT (2)	.75 TO 1.25 WT PCT (2)
POTASSIUM NITRATE, MIL-P-156	0 TO 2.20 WT PCT (2)(3)	N/A (2)	N/A (2)
POTASSIUM SULFATE, MIL-P-193	0 TO 2.20 WT PCT (2)(3)	1.90 TO 2.20 WT PCT (2)(3)	0.3 TO 0.7 .WT PCT (2)
METHYL CENTRALITE, MIL-M-19719	2.25 TO 5.75 WT PCT (2)	2.25 TO 5.75 WT PCT (2)	2.25 TO 5.75 WT PCT (2)
GRAPHITE, MIL-G-155, GRAD III	N/A	.35 WT PCT MAX	.35 WT PCT MAX
GRAPHITE, MIL-G-155, GRAD IV	.35 WT PCT MAX	N/A	N/A
TOTAL VOLATILES	2.35 WT PCT MAX	2.35 WT PCT	2.35 WT PCT
MOISTURE	.75 TO 1.25 WT PCT	.75 TO 1.25 WT PCT	.75 TO 1.25 WT PCT
RESIDUAL SOLVENTS	1.10 WT PCT MAX	1.10 WT PCT MAX	1.10 WT PCT MAX
DUST AND FOREIGN MATERIAL	.10 WT PCT MAX	.10 WT PCT MAX	.10 WT PCT MAX
M & V	INFO ONLY	INFO ONLY	INFO ONLY
FLAME TEMPERTURE	2800K MAX	2800K MAX	2800K MAX
HYGROSCOPICITY	2.10 WT PCT MAX	2.10 WT PCT MAX	2.10 WT PCT MAX
HEAT TEST (STABILITY)			
A. DISCOLORATION, SALMON PINK END POINT	40 MINUTES MIN.	40 MINUTES MIN.	40 MINUTES MIN.
B. EXPLOSION	5 HOURS MIN.	5 HOURS MIN.	5 HOURS MIN.
PHYSICAL CHARACTERISTICS (INCHES)			
A. AVERAGE OUTSIDE DIAMETER	.072 NOMINAL	.071 NOMINAL	.071 NOMINAL
B. AVERAGE LENGTH	.088 NOMINAL	.092 NOMINAL	.092 NOMINAL
C. AVERAGE WEB THICKNESS	.033 NOMINAL	.032 NOMINAL	.032 NOMINAL
D. AVERAGE PERFORATION DIAMETER	.006 NOMINAL	.006 NOMINAL	.006 NOMINAL

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~	200610330-01	PROPELLANT				1
-01	PART NUMBER	NOMENCLATURE	CAGEC	MATL SIZE	MATERIAL SPECIFICATION	ZONE FIND

QTY REQUIRED

200612860-10	AR(-01)
200612861-10	AR(-01)
200612862-10	AR(-01)
200612864-10	AR(-01)
200610300-70	AR(-01)
200610300-50	AR(-01)
200610300-30	AR(-01)
200610300-10	AR(-01)

NEXT ASSY USED ON APPLICATION

PARTS LIST

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES:
FRACTIONS ± 1/16 DECIMALS X ± .0 XX ± .00 XXX ± .005 ANGLES ±2° -Y
MATERIAL:

APPROVALS	DATE	NAME
DFTG	06FEB17	L. McCLURE
CHKR	06FEB17	S. KEETCH
PROJ ENG	06FEB17	S. KEETCH
MTLS ENG	06FEB17	P. STODDARD
ENG AUTH	06FEB17	P. STODDARD
RELEASE	06FEB17	R. HARRISON

TITLE

U.S. AIR FORCE

PROPELLANT

SIZE	CAGEC	DRAWING NO.	REV.
C	98747	200610330	C

SCALE: NONE WEIGHT: NA SHEET 1 OF 1

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	REV	DESCRIPTION	DATE	APPROVED
~	PGU-15A/B	A	SEE EO NO. 06A1837	061222	[redacted]
		B	SEE EO NO. 07A0939	070814	[redacted]
		C	SEE EO NO. 15A0259-H	161020	[redacted]

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	REV																					
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	REV	C	-	A	C	C	C	A	A	C	A	A	-	A	C	C	C	C	C	C	A	
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE ON:
FRACTIONS ± DECIMALS .XX± .XXX± ANGLES ±

CURRENT CAGE CODE

DETSMN [redacted]	DATE [redacted]	
CHKR [redacted]	[redacted]	
MATL ENGR [redacted]	[redacted]	
PROJ ENGR [redacted]	[redacted]	
A.F. AUTHENTICATION [redacted]	[redacted]	
RELEASE [redacted]	[redacted]	

U.S. AIR FORCE

TITLE **CRITICAL ITEM PRODUCT FABRICATION SPECIFICATION FOR PROPELLANT, 30MM AMMUNITION FOR THE GAU-8/A GUN SYSTEM**

SIZE	CAGE CODE	DWG NO.
A	[redacted]	**SP200610304**

SCALE NONE | SHEET 1 of 20

EF (MS-WORD)

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

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CRITICAL ITEM PRODUCT FABRICATION SPECIFICATION FOR PROPELLANT, 30MM AMMUNITION FOR THE GAU-8/A GUN SYSTEM

1. SCOPE

1.1 Scope. This specification establishes the general requirements for the acceptance of propellant for ammunition for the GAU-8/A Gun System. The detailed manufacturing requirements are unique to specific suppliers.

2. APPLICABLE DOCUMENTS

2.1 Government documents. The following documents, of the issue in effect on date of invitation for bids or request for proposal, or the particular issue specified, form a part of this specification to the extent specified herein. In the event of conflict between the documents referenced herein and the contents of this specification, the contents of this specification shall be considered a superseding requirement.

2.1.1 Specifications.

MIL-D-98	Diphenylamine, Technical
MIL-DTL-244	Nitrocellulose
MIL-G-155	Graphite, Dry (for use in ammunition)
MIL-M-19719	Methyl Centralite
MIL-P-156	Potassium Nitrate
MIL-P-193	Potassium Sulphate
200925157	Ballistic Test Procedures for 30X173MM Ammunition

2.1.2 Standards.

MIL-STD-129	Marking for Shipment and Storage
MIL-STD-286	Propellant, Solid, Sampling, Examination and Testing
MIL-STD-810	Environmental Test Methods
MIL-STD-1168	Lot Numbering of Ammunition
MIL-STD-1916	Department of Defense Test Method Standard

2.1.3 Drawings.

200610300	Cartridge Assembly, PGU-15A/B 30MM Target Practice
200610330	Propellant
200612861	Cartridge Assembly, 30MM, PGU-13B/B (HEI)
200612862	Cartridge Assembly, 30MM, PGU-13B/B (HEI)
200612864	Cartridge Assembly, 30MM, PGU-14C/B (API)
200828460	Cartridge Assembly, 30MM, PGU-13D/B (HEI)

2.1.4 Publications.

Code of Federal Regulations.

Title 49	Transportation

2.1.5 Pamphlets.

AMCP-706-175	Ordnance Engineering Design Handbook, Explosive Series, Solid Propellants, Part I
AMCP-706-247	Design for Projection

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specified procurement functions should be obtained from the processing activity or as directed by the contracting officer).

2.2 Non-government documents. The following documents form a part of this specification to the extent specified herein. The latest Government approved issue in effect at time of acceptance testing shall apply. In the event of conflict between the documents referenced herein and the contents of this specification, the contents of this specification shall be considered a superseding requirement.

2.2.1 Drawings.

2.2.1.1 General Dynamics Armament and Technical Products.

198F213	30mm SS Arrangement Drawing, Test Fixture
201F466	Barrel, 30mm Test Fixture (Constant Twist)
217F461	Barrel, 30mm Test Fixture (Gain Twist)

3. REQUIREMENTS

3.1 Definition. This propellant is an integral component of 30mm GAU-8/A ammunition. The specific usage of a propellant lot after acceptance will be determined at the LAP facility by the LAP vendor.

3.1.1 Contractor furnished items. Unless otherwise specified in the contract or purchase order, the contractor shall furnish flashtube & cartridge case assemblies and 30MM PGU series projectiles. In addition, the contractor shall provide reference rounds or reference propellant.

3.2 Characteristics.

3.2.1 Performance.

3.2.1.1 Function. When assembled into a 30MM PGU series cartridge, the propellant shall meet the requirements of Table I. Unless otherwise specified, the ballistic performance measurements apply in a single shot Mann barrel test fixture.

Table I
Ballistics Performance Requirements (1, 3)

Cartridge Type	Muzzle Velocity			Case-Mouth Pressure (2)	Action Time		Conditioning Temperature (°F)
	Max Avg (fps)	Min Avg (fps)	Max SD (fps)	Avg Plus 3 SD (psi)	Max Avg (ms)	Max SD (ms)	
PGU-13B/B HEI (200612861)	3,375	3,325	33	60,400	5.1	0.4	+70±10
PGU-13B/B HEI (200612862)	---	---	33	65,500	5.1	0.4	+160±10
PGU-13D/B HEI (200612860)	---	---	33	60,400	5.5	0.4	-65±10
PGU-14C/B API (200612864)	3,215	3,165	33	60,400	5.1	0.4	+70±10
	---	---	33	65,500	5.1	0.4	+160±10
	---	---	33	60,400	5.5	0.4	-65±10
PGU-15A/B TP (200610300)	3,375	3,325	33	60,400	5.1	0.4	+70±10
	---	---	33	65,500	5.1	0.4	+160±10
	---	---	33	60,400	5.5	0.4	-65±10

NOTES:
(1) Conditions to be met with charge weight within the range of "Charge Establishment" as specified in 4.1.2.3.
(2) To be measured at case mouth as shown in drawing 201F466 or 217F461 using Kistler's 617C pressure transducer or approved equivalent-in accordance with Specification 200925157 Section 9.
(3) Applies to cartridge drawing indicated (projectile simulators acceptable for use in PGU-14 cartridges / inert loaded projectiles acceptable for use in PGU-13 cartridges).
(4) Deleted

3.1.1.1.1 Ballistic performance. Ballistic performance requirements shall conform to Table I.

3.2.1.1.2 Muzzle debris. The propellant shall produce no muzzle debris that interferes with the operation of the gun system or creates a safety hazard for the gun or the aircraft. Muzzle debris is defined to mean material which was not intended by design to issue forth from the muzzle under normal operating conditions.

3.2.1.1.3 Smoke, residue and flash. The propellant formulation shall be designed to minimize smoke and residue with the complete suppression of Secondary Gun Gas Ignition (SGGI) under automatic fire conditions.

3.2.1.2 Environmental conditions. Unless otherwise indicated the environmental conditions apply with the propellant assembled in a 30MM PGU series cartridge as approved by the contractor.

3.2.1.2.1 Operating.

3.2.1.2.1.1 High temperature. Temperature conditions up to +160° ± 5°F.

3.2.1.2.1.2 Low temperature. Temperature conditions down to -65° ± 5°F

.

3.2.1.2.1.3 Thermal shock. Temperature shock conditions with the temperature alternating between -65°F and +160°F with the temperature conditions changing within 5 minutes. (MIL-STD-810B, Method 503, Procedure 1).

3.2.1.2.1.4 Aircraft vibration. MIL-STD-810C Method 514.2, Procedure IA, paragraph 4.6.2, Random vibration shown in Figure 1.

3.2.1.2.2 Shelf life.

3.2.1.2.2.1 Cartridge. The propellant composition shall be such that when assembled into complete rounds and stored in the M548 ammunition container the performance is not degraded from the requirements of this specification for a period of 10 years.

3.2.1.2.2.2 Propellant container. The propellant composition shall be such that when stored in the propellant container in an approved storage facility, the propellant shall not degrade beyond the limits of this specification for a period of 2 years.

3.3 Design and construction.

3.3.1 Chemical properties.

3.3.1.1 Flame temperature. The adiabatic flame temperature shall not exceed 2800°K when calculated by the Hirshfelder-Sherman technique using the composition test data from paragraph 3.3.2

3.3.1.2 Heat. The propellant, when exposed to a temperature of 120°C or 134.5°C, shall not cause complete fading of methyl violet test paper to a salmon pink color in less than 40 minutes.

3.3.1.3 Explosion (134.5°C). The propellant, when exposed to a temperature of 134.5°C, shall not explode in less than five hours.

3.3.1.4 Hygroscopicity. The propellant hygroscopicity shall not exceed 2.10 percent.

3.3.2 Chemical composition/Physical characteristics. The detailed chemical composition and physical characteristics of the propellant are unique to the specific supplier. Specific limits for each supplier can be found in drawing 200610330. These will be subject to periodic review and change depending on historic performance characteristics. These minor adjustments are not subject to First Article testing.

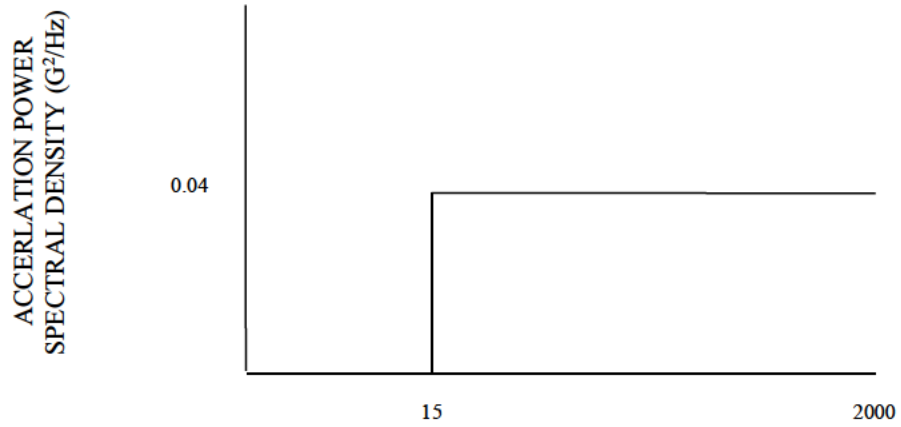

FIGURE 1. RANDOM VIBRATION ENVELOPE

3.3.3 Materials.

3.3.3.1 Propellant. The basic propellant shall be manufactured from materials which comply with the applicable specification (see paragraph 2.1).

3.3.3.2 Suppressant. Materials used for the suppression of muzzle flash and SSGI shall comply with the following:

3.3.3.2.1 Total flash suppressant shall target 2.05% by weight of the final propellant blend and shall meet the requirements of 3.3.2. Total flash suppressant includes both the percentage in the base grain and any additional flash suppressant pellets blended into the final propellant blend or added separately into the cartridge case at load, assemble, and pack operations.

3.3.3.2.2 The two approved materials that can be used for flash suppressant are:

a) Potassium Sulphate (MIL-P-193)

b) Potassium Nitrate (MIL-P-156)

3.3.4 Maintenance of manufacturing records.

3.3.4.1 Propellant manufacture. The supplier shall maintain a complete record of the processing history of each lot or sublot of propellant to insure traceability of the manufacture of each lot.

3.3.4.2 Sublot characteristics. The supplier shall maintain a record of the characteristics of each sublot or batch of propellant.

3.3.4.3 Propellant homogeneity. The procedure utilized for the blending of propellant sublots and/or batches to form a lot shall result in a homogeneous mixture if random samples have the same characteristics as the final production lot. When the flash suppressant pellets are blended into the final propellant blend, the propellant homogeneity shall be measured as defined in 3.3.4.4.

3.3.4.4 Evaluation of homogeneity. A sample from the final production lot shall be selected from the greater of twenty (20) containers or one (1) container for every final blend increment used to assemble the final production lot. Each sample shall be individually analyzed for total potassium salts using the approved methods per paragraph 4.3.6 or a suitable alternate method approved by the procuring activity. A propellant lot shall be deemed homogeneous if each individual sample contains 1.90% minimum to 2.20% maximum total potassium salts and meets the criteria in Table II. This section is not applicable for propellant lots that deliver flash suppressant pellets and base grain propellant separately.

TABLE II.
Evaluation of Homogeneity

Criteria / Parameters	Sample Size (g)	Specification Range per Sample	Relative Standard Deviation	Maximum Population SD (%)	Population Limits for Lot x(bar) - 3SD	Population Limits for Lot x(bar) + 3SD	Number of Samples
% K Salt	400 - 600	1.90-2.20%	4.0	0.08	≥1.8%	≤2.3%	Greater of 1/final blend or 20/lot

3.3.4.5 Ballistic Uniformity. A ballistic uniformity test shall be performed per 4.2.3.1.3.2 to demonstrate homogeneity in the base grain propellant.

3.3.5 Workmanship. The best commercial practices shall be used in the manufacture of the propellant. The propellant shall contain a minimum of foreign material, cracked or split propellant grains or other contaminants which would preclude compliance with the performance, chemical and physical requirements specified in this specification.

3.3.6 First article sample. This specification makes provision for first article tests. When specified in the contract or purchase order, sample quantities of propellant from the first production lot shall be tested to verify the adequacy and suitability of processes and procedures to produce propellant which will meet the requirements of this specification. Data from these tests shall be analyzed and results approved by the contractor prior to submittal of subsequent production lots for acceptance testing.

4. QUALITY ASSURANCE PROVISIONS

4.1 General. The quality assurance provisions defined herein provide the criteria to verify that the item meets the specified design, performance and construction requirements. Verification of conformance with requirements may be accomplished by inspection, analysis or tests.

4.1.1 Responsibility for inspection. The responsibility for the performance of all inspection analysis and test requirements shall be as specified in the contract or purchase order. Except as otherwise specified, the test activity may utilize his own facilities or any commercial laboratory acceptable to the procuring activity. The procuring activity reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.1.1.1 Test provisions.

4.1.1.1.1 Test conditions. Unless otherwise specified, all tests shall be conducted under local ambient conditions.

4.1.1.1.2 Test items. Unless otherwise specified, all function tests shall be conducted on complete rounds which have been loaded and assembled in accordance with the provisions of 30MM PGU series drawings except case mouth waterproofing may be omitted. The cartridge assembly methods, including propellant loading procedures shall be approved by the contractor. Propellant charge weight shall be determined in accordance with 4.1.2.3.

4.1.1.1.3 Test item conditioning. For test methods which require test item conditioning at -65°F, 70°F, or +160°F, the item shall be exposed to the specific temperature for a period of not less than 4 hours. The conditioning time for items conditioned at +160°F and -65°F shall not exceed 24 hours. The conditioning temperature shall be controlled to ±5°F. All temperature conditioned rounds shall be fired within three minutes after removal from the conditioning chamber.

4.1.1.1.4 Test measurement equipment. Tests specified herein shall be conducted using test equipment which has been designed to have a precision equal to or better than that shown below.

a)	Projectile velocity	±10 fps
b)	Chamber	±5.0 percent
c)	Action time	±0.10 ms

4.1.1.1.5 Test gun. Functional tests shall be conducted on a single shot test stand as shown on drawing 198F213 or equivalent except the barrel shall be as shown on drawing 201F466 or 217F461.

4.1.1.1.6 Test data. Ballistic test data shall be recorded in uncorrected form as well as after correction for reference round data in accordance with the calibration procedure of 6.3.5. The test data shall also include any anomalies which may occur during all ballistic test. The standard deviation shall be calculated in accordance with 6.3.6. Other test data shall be recorded to verify compliance with the applicable test requirement.

4.1.1.1.6.1 Abnormal test result. In the event of an individual abnormal test where one of the three parameters of muzzle velocity, pressure, or action time was not obtained or is inconsistent with the other two and falls on or outside of the mean plus or minus four sigma value, (calculated without the individual abnormal test results), the abnormal test results may be eliminated from the calculation for the ballistic tests. If any rounds are disregarded additional rounds shall be fired, provided they are fired during the same day and under the same environment as the abnormal test result rounds.

4.1.1.1.7 Ballistic reference rounds. A minimum of 4 reference rounds shall be fired during each ballistic firing test and the muzzle velocity, case mouth pressure and action time recorded. Any individual round readings which vary from the mean by greater than 40 fps, 3000 psi or 0.3 ms respectively, shall be disregarded and a new mean value shall be computed. If rounds are disregarded, additional reference rounds shall be fired. The differences between the mean reference round test values and the reference acceptance baseline values shall not exceed 35 fps, 3,500 psi, or .35 ms. Reference round data shall be utilized as defined in 6.3.5.

4.1.1.1.8 Test quantities. Unless otherwise specified in the contract, all tests and test quantities are listed in Table III (First Article) and Table IV (Lot Acceptance).

4.1.1.2 Supplier quality assurance system. The supplier shall provide and maintain an effective quality assurance system in accordance with the contract.

4.1.2 Special tests and examinations.

4.1.2.1 First article sample. Utilizing propellant from the first production lot but before quantity production of subsequent lots, a production lot sample of propellant as specified in the contract or purchase order, shall be prepared and delivered to the destination designated by the contractor for tests as defined in Table III. The first article lot shall be manufactured by the same procedures and processes and at the same location proposed by the supplier for the execution of the production order.

4.1.2.2 First article lot sample failure. Failure of any first article tests shall be reported to the procuring activity. The procuring activity and supplier shall review the test data and shall define retest criteria if appropriate and instructions for the disposition of the rejected lot.

4.1.2.3 Charge establishment – Prior to conducting any specified functional tests on a given lot of propellant, charge establishment tests shall be conducted. Propellant used for these tests shall be selected from any propellant container from the production lot. This sample shall be selected by the responsible test activity and labeled as defined in 4.2.3.1.1.

These tests shall be conducted on cartridges assembled per 4.1.1.1.2 but with advisory propellant charge weights as follows:

Estimated Service Charge Weight (See 4.1.2.3.1 for definition)
Estimated Service Charge Weight plus 2 grams
Estimated Service Charge Weight minus 2 grams

A minimum of five rounds of each charge weight shall be fired and data recorded for pressure, muzzle velocity and action time. Based on this data, the charge weight which meets the specified requirements as defined in Table I shall be selected. Unless otherwise specified, this weight shall be used for loading the rounds for conducting the lot acceptance tests specified in 4.2.3. All charge establishment tests shall be conducted on rounds conditions at 70° ± 5°F.

4.1.2.3.1 Estimated Service Charge Weight. It is acceptable to determine a service charge weight that will meet the requirements of Table I. Service charge weights that are greater than 10 grams below maximum full case (see 6.3.8 for definition) will not be permitted without additional testing and written approval from the procuring agency.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	SEE SHEET 1	----------	----------

TABLE III.
First Article Tests

Test	Method	Quantity
Ballistic Tests		60 (1)
Case mouth pressure	4.3.4.1	
Muzzle velocity	4.3.4.2	
Action time	4.3.4.4	
Chemical composition	4.3.1	(4)
Chemical properties		
Flame temperature	4.3.2.1	(4)
Heat	4.3.2.2	(4)
Explosion	4.3.2.3	(4)
Physical characteristics	4.3.3	(4)
Muzzle debris	4.3.4.5	(2)
Environmental		
High temperature	4.3.5.1	20 (3)
Low temperature	4.3.5.2	20 (3)
Thermal shock	4.3.5.3	20
Aircraft vibration	4.3.5.4	20
Function and Casualty (automatic gun)	4.3.5.5	575 (Information Only)
Secondary Gun Gas Ignition	4.3.5.5.1	575
Shelf life		
Cartridge	4.3.5.6.1	40
Workmanship	4.3.7	(4)

NOTES: (1) Twenty (20) rounds shall be fired at each of three temperatures.
(2) Verified in conjunction with the ballistic tests.
(3) At the option of the contractor, the contractor can use the following alternate firing schedule after the environmental conditioning has been completed for high and low temperature: Fire ten (10) rounds at the same environmental conditioning temperature (high to low). Fire ten (10) rounds at 70°F temperature.
(4) Tests shall utilize propellant from sample selected per 4.2.3.1.2.

TABLE IV.
Lot Acceptance Tests

Test	Method	Quantity
Ballistic Tests		60 (1)
Pressure	4.3.4.1	
Muzzle velocity	4.3.4.2	
Action time	4.3.4.4	
Chemical Composition	4.3.1	(2)
Chemical Properties		(2)
Heat	4.3.2.2	
Explosion	4.3.2.3	
Physical Characteristics	4.3.3	(2)
Muzzle Debris	4.3.4.5	(3)
Workmanship	4.3.7	(2)

NOTES: (1) Twenty (20) rounds shall be fired at each of three temperatures.
(2) Tests shall utilize propellant from sample selected per 4.2.3.1.2.
(3) Verified in conjunction with the ballistic tests.

4.2 Quality assurance inspection.

4.2.1 Lot formation. A lot shall consist of one or more batches of propellant, produced by one manufacturer, in accordance with the same specification or same specification revision. Each batch shall consist of a quantity of propellant which has been subjected to the same chemical or physical mixing process intended to make the final product homogeneous. The product shall be submitted for inspection in accordance with MIL-STD-1916.

4.2.1.1 Production lot. The propellant lot size shall be mutually agreed upon between the supplier and the procuring activity.

4.2.1.2 Lot identification. Each container of the lot of propellant shall be identified with a lot number in accordance with MIL-STD-1168.

4.2.1.3 Certification of product. The following information shall be provided for each production lot.

a. A certified copy of the results of the tests for which the test activity is responsible. Supporting data shall be retained on file for review upon request.

b. Total weight of the lot and the number and serial number of the containers in the lot by barrel or batch.

c. Date of packaging.

d. Identification of the product specification by the number and date.

e. Signature of approved official of the supplier and/or test activity as applicable.

4.2.1.4 Product lot acceptance. When specified in the contract or purchase order, pre-shipment tests shall be conducted as defined in 4.2.2 prior to conducting the lot acceptance tests in 4.2.3.

4.2.1.5 Lot reprocessing. If a completed lot of propellant is reprocessed it shall constitute a new lot. The reprocessed lot shall be assigned a new lot number and resubmitted to the complete acceptance test.

4.2.2 Pre-shipment tests.

4.2.2.1 Sampling. When specified in the contract or purchase order, the pre-shipment sample shall consist of a minimum of 30 pounds of propellant with flash suppressant pellets either blended into the propellant or packaged separately as intended for delivery as a production lot. This sample shall be selected by the supplier and packaged and labeled as defined in 4.2.3.1.1.

4.2.2.2 Tests. Pre-shipment tests shall consist of conducting ballistic tests on a minimum of 10 rounds at each of three temperatures -65°F, 70°F, and +160°F. Pre-shipment test data shall be provided to the procuring activity.

4.2.2.3 Pre-shipment sample characteristics. In the event the pre-shipment sample fails to meet any of the test requirements after adjustment for reference round data as appropriate, additional samples shall be submitted to the test sequence. A record of pre-shipment blending shall be maintained. Upon successful completion of the pre-shipment test, the balance of the production lot shall be blended in accordance with the blend ratios used for the pre-shipment sample.

4.2.3 Lot acceptance tests. Propellant from a production lot sample shall be subjected to the tests specified in Table IV.

4.2.3.1 Sampling procedures. Sample propellant for conducting quality assurance inspection shall be selected from the production lot and processed in accordance with the following procedures.

4.2.3.1.1 Sample preparation. Propellant samples shall be labeled to assure identification and shall be packaged so the propellant properties are not degraded. The sample shall be poured into a clean container and the container immediately closed. The label on each sample container shall indicate the container serial number from which the sample was drawn, date of selection of the sample, date of propellant packaging, name and location of manufacture, number of containers in the lot as well as total weight of the production lot. The type of tests for which the sample will be used shall also be indicated. The selection of the test samples shall be accomplished by the test activity.

4.2.3.1.2 Chemical and physical property test samples. The chemical and physical property test samples shall consist of at least two (2), five (5) pound samples. A portion of each five pound sample shall be selected from not less than five containers overall, randomly selected from the production lot. A minimum of 0.5 pounds shall be taken from each container and all samples blended together. The blended propellant shall be divided into a primary property sample for immediate testing and a supplemental property sample retained for repeat tests if necessary.

4.2.3.1.3 Ballistic test samples. The ballistic test samples shall consist of two equal samples drawn from not less than five containers from the production lot as selected by the process provided in 4.2.3.1.2. The two samples from each container shall be individually packaged, sealed and labeled to provide traceability to the container from which they were drawn. One sample from each container shall be identified as the primary ballistic sample and used for immediate testing. The remaining samples shall be identified as the supplemental ballistic sample and retained for repeat tests if necessary. For ballistic tests, it is permissible to use a composite sample from the selected propellant drums to conduct all ballistic tests.

4.2.3.1.3.1 Ballistic sample moisture and volatile content. The moisture and volatile content of the propellant from each container selected for firing tests shall be determined and recorded for future reference. The test method shall be defined in 4.3.1.

4.2.3.1.3.2 Ballistic Uniformity Test. To demonstrate propellant base grain homogeneity, ten (10) cartridges will be produced from each of the containers selected in 4.2.3.1.2 and shall be tested for velocity at ambient temperature. The same lot of flash suppressant must be used in the cartridges used in this testing method. The cartridges shall have a mean velocity within ± 30 fps of the velocity as established by the LAT composite sample.

4.2.3.2 Retest provisions. If the results of the physical characteristic tests, chemical characteristic tests, or the ballistic tests of the lot acceptance tests fail to meet the specified applicable requirements, the lot shall be rejected, subject to testing of a second sample of the same lot for the characteristics for which the failure occurred. The second test(s) shall be made using the original sample(s) provided sufficient propellant remains. If additional propellant should be required, it shall be taken from the same container(s) of propellant in which sample failure occurred in the initial test. Failure of the second sample shall apply to the second and subsequent production lots. The disposition of the rejected lot shall be the responsibility of the supplier. Criteria for failure reporting shall be as defined in 6.3.7.

The criteria for selection and identification of the samples for test shall be as defined in 4.2.3.1.1.

4.3 Test methods.

4.3.1 Chemical composition. A sample quantity of propellant as defined in 4.2.3.1.2 shall be subjected to chemical analysis to verify compliance with the applicable requirement, using the test method as noted.

TABLE V.
Chemical Composition

Ingredient	Requirement Paragraph	Test Methods per MIL-STD-286 (or approved equivalent)
Diphenylamine	3.3.2	226.2 or 208.3 (1)
Total Potassium Salts	3.3.2	316.1 or 310.4 (2)
Graphite	3.3.2	309.1
Total Volatiles	3.3.2	103.5
Moisture and Volatiles	3.3.2	101.2
Residual Solvents	3.3.2	103.5
Dust and Foreign Material	3.3.2	501.1
Nitrocellulose	3.3.2	209.2.1
Methyl Centralite	3.3.2	226.2 or 208.3
Moisture	3.3.2	103.5 or 101.5
NOTES: (1) 226.2 separates DNT but not DPA, 208.3 HPCL separates DPA (more accurate) but not DNT. (2) Results from method 316.1 (AAS) are overestimated.		

4.3.2 Chemical properties. Procuring activity approved procedure.

4.3.2.1 Flame temperature – The flame temperature of the propellant shall be calculated by Hirshfelder-Sherman method, or equivalent, to verify that the flame temperature conforms with the requirement of 3.3.1.1. Thermochemical constants used for the propellant materials shall be the established values as defined in AMCP 706-175 or more currently accepted values.

4.3.2.2 Heat. The sample quantity shall be subjected to the test of MIL-STD-286, Method 404.1.2. The supplier shall indicate test temperature on certification of product. The sample test results shall indicate compliance with 3.3.1.2.

4.3.2.3 Explosion. The sample quantity shall be subjected to the test of MIL-STD-286, Method 404.1.2 at 134.5°C. The sample test results shall indicate compliance with 3.3.1.3.

4.3.2.4 Hygroscopicity. The sample quantity shall be subjected to the test of MIL-STD-286, Method 503.1.3. The sample test results shall indicate compliance with 3.3.1.4.

4.3.3 Physical characteristics.

4.3.3.1 Propellant physical characteristics. A sample quantity of propellant shall be subjected to physical testing using the test method as noted. Unless otherwise specified in the contract or purchase order these tests shall be conducted on 30 granules of the propellant.

Dimension	Test Method per MIL-STD-286
Outside diameter	504.1.1
Length	504.1.1
Diameter of perforations	504.1.1
Web thickness	504.1.1

4.3.3.2 Suppressant physical characteristics. A sample quantity of suppressant shall be subjected to physical testing using the test method as noted. Unless otherwise specified in the contract or purchase order these tests shall be conducted on 30 granules of suppressant.

Dimension	Test Method per MIL-STD-286
Outside diameter	504.1.1
Length	504.1.1
Diameter of perforations	504.1.1
Web thickness	504.1.1

4.3.4 Function.

4.3.4.1 Case Mouth Pressure. The test rounds shall be conditioned at -65°F, 70°F, and 160°F temperatures and fired from a suitable barrel. Pressure measurements shall be made at the case mouth with a piezoelectric transducer located as shown in 201F466 or 217F461, and shall comply with the requirements of Table I.

4.3.4.2 Muzzle velocity. Muzzle velocity shall be measured by the use of sensors located a known distance apart (100 feet preferred). The test sample rounds shall be conditioned at -65°F, 70°F, and 160°F before firing. The mean velocity and the standard deviation from the mean of the sample round shall be calculated and shall comply with the requirement of Table I. The mean velocity data at -65°F and +160°F shall be recorded for information only, however, the standard deviation requirement shall be met. The velocity decay factors documented in Specification 200925157 Paragraph 8.3.2.2 shall be used to calculate muzzle velocity:

Cartridge Type	Decay Factor
TP (200610300)	0.28 (ft/sec)/ft
HEI (200612861, 200612862 or 200828460	0.31 (ft/sec)/ft
API (200612864)	0.27 (ft/sec)/ft

4.3.4.3 "Deleted"

4.3.4.4 Action time. The test rounds shall be conditioned at -65°F, 70°F, and 160°F and fired from a suitable barrel. The time between firing pin to primer contact and exit of the projectile from the muzzle shall be measured. The time shall comply with the requirement of Table I.

4.3.4.5 Muzzle debris. Barrel firing tests shall be monitored by examination of witness screens and the test range area. Recorded debris shall be analyzed to determine presence of unacceptable material.

4.3.5 Environmental tests. Unless otherwise specified, performance during and/or after environmental exposure, as specified in the applicable test procedure, shall consist of conducting the tests of 4.3.5.1, 4.3.5.2, and 4.3.5.4.

4.3.5.1 High temperature. The cartridge shall be subjected to the high temperature test of MIL-STD-810C, Method 501.1, Procedure I. The operating temperature shall be +160°F. With the cartridge temperatures stabilized at +160°F, the test item shall immediately be subjected to the tests referenced in 4.3.4.

4.3.5.2 Low temperature. The cartridge shall be subjected to the low temperature test of MIL-STD-810C, Method 502.1, Procedure I. For this test the storage and operating temperatures shall be -65°F with the cartridge temperature stabilized at -65°F, the test item shall immediately be subjected to the tests referenced in 4.3.4.

4.3.5.3 Thermal shock. The cartridge shall be subjected to the thermal shock test of MIL-STD-810B, Method 503, Procedure I. After exposure, the test item shall be subjected to the tests referenced in 4.3.4.

4.3.5.4 Aircraft vibration. The ammunition shall be subjected to a broad band random excitation in accordance with the requirements of MIL-STD-810C, Method 514.2, Procedure IA, Paragraph 4.6.2. The test level (Wo) shall be 0.040 g^2/Hz, having a power spectral density (PSD) envelope as shown in Figure 1. The test duration will be one hour in each axis. The ammunition shall be mounted to the test fixture simulating a feed system in a normal aircraft mounting. After exposure, 90 percent of the test items shall be subjected to the tests referenced in 4.3.4, the remaining 10 percent shall be torn down for engineering evaluation.

4.3.5.5 Function and casualty (automatic gun). This function and casualty testing shall be conducted in the GAU-8/A automatic gun system. Unless otherwise specified, the ammunition will be tested under ambient conditions. Five hundred seventy-five (575) rounds shall be ballistically fired in an automatic weapon at a firing rate of 4200 ± 200 shots/minute per the following schedule:

Burst Length	Cooling period (minutes minimum)
150 rounds	20
150 rounds	20
150 rounds	20
Remainder	--

4.3.5.5.1 Secondary Gun Gas Ignition (SGGI): During GAU-8/A Function and Casualty testing there shall be no sustained combustion in front of the muzzle of the gun that exceeds 50ms as viewed by high speed photography at a constant frame rate of 1000 frames per second. This test will be performed as a pass/fail.

4.3.5.6 Shelf life.

4.3.5.6.1 Cartridge. The propellant, when assembled into cartridges and packed in the M548 ammunition container, shall be subjected to temperature tests in accordance with the schedule below. Humidity need not be controlled.

a. Condition 10 rounds at 70° ± 10°F and subject to the ballistic tests of 4.3.4.

b. Subject 30 rounds to a low temperature cycling test at temperatures of 0° and -65°F with exposure at each temperature applied on alternate days. Cycling shall continue for 28 days.

   Following exposure, remove 10 rounds and after being stabilized at 70° ± 10°F the rounds shall be subjected to the ballistic tests of 4.3.4.

c. Subject the remaining 20 rounds to a high temperature cycling test with exposure at 90° and 160°F with exposure applied as a daily cycle with 20 hours at 90°F and 4 hours at 160°F. Cycling shall continue for 28 days. Following exposure the items shall be stabilized at 70° ± 10°F and subjected to the ballistic tests of 4.3.4.

NOTE: The tests of steps b and c may be reversed; however the test quantities shall remain as defined.

4.3.5.6.2 Container storage. When specified in the contract or purchase order, the tests to verify propellant storage in an approved container shall be defined by the procuring agency.

4.3.6 Suppressant level determination. The level of suppressant material in a propellant lot should be determined by analytical analysis to determine the suppressant percent. The specific procedures used for analytical analysis are defined below. This test shall be conducted on each final production lot of propellant. If the first sample tests do not indicate compliance with the desired suppressant level, a second sample shall be evaluated. If the second sample fails, the lot shall be rejected.

4.3.6.1 Analytical Analysis Method A. If the flash suppressant pellets and the final propellant blend are delivered separately, the potassium salt content of each deliverable will be analyzed separately per 4.3.6.2.2. The manufacturer will report the potassium salt content of each deliverable separately and will provide a recommended weight of flash suppressant pellets to be added at the final propellant blend at load, assemble, and pack operations at the desired charge weight.

4.3.6.2 Analytical Analysis Method B. If the flash suppressant pellets are blended in with the final propellant blend, the percent of suppressant included in the propellant shall be determined utilizing the procedures defined in 4.3.6.2.1 for separation of suppressant grains, determination of potassium salts in suppressant grains and total suppressant level. Use of procedures other than those defined by 4.3.6.2.1, 4.3.6.2.2 and 4.3.6.2.3 shall be approved by the procuring activity. The percent potassium salt shall be compared with the applicable requirements of 3.3.3.2 for compliance.

4.3.6.2.1 Separation of suppressant grains. Use the samples of propellant obtained from the propellant containers in 3.3.4.3. The samples shall be riffled from the entire container to insure that a representative sample is obtained. The sample weight shall be recorded and shall be analyzed independently. A separation procedure that utilizes a solvent media with a density of 1.7 g/cm^3 as the separating media shall be utilized to separate the suppressant from the propellant. The specific procedure shall be documented and subject to review and approval by the procuring activity. After separation, the suppressant and propellant shall be dried. After drying, each material shall be visually examined for presence of the other material. If necessary, the material shall be sorted to complete separation of suppressant and propellant. The weight of propellant shall be determined to within ± 0.1 gram and the weight of suppressant to within ± 0.001 gram. The weight of suppressant recovered shall be subtracted from the initial sample weight. The difference is the propellant weight. Any weight difference between the recovered propellant sample and the calculated weight is due to volatile content, small particles and foreign matter. The recovered suppressant sample weight and calculated propellant sample weight shall be used to calculated percent Potassium in the sample.

4.3.6.2.2 Potassium salt in flash suppressant. The method for determination of potassium salt level shall be in accordance with MIL-STD-286B, Method 310.4 modified for analysis of high salt percentage. The specific analysis procedure shall be documented and approved by the contractor. A sample of each of the three suppressant groups obtained in tests of 4.3.6.2.1 above shall be analyzed and the average value reported.

4.3.6.2.3 Total suppressant level. The total suppressant level (percent) shall be determined by applying the results of 4.3.6.2.2 to weight of the flash suppressant grains recovered in 4.3.6.2.1 plus the percent in the propellant applied to the weight of the propellant calculated in 4.3.6.2.1. Acceptance of the results of each individual propellant container shall comply with the requirements of 3.3.4.4 and the average of all of the propellant containers shall comply with the requirements of drawing 200610330.

4.3.7 Workmanship. The propellant shall be examined for compliance with the requirements of 3.3.5.

5. PREPARATION FOR DELIVERY

5.1 Preservation packaging and packing. Preservation packaging and packing shall be best commercial practice to ensure acceptance by common carrier for safe transportation, at the lowest rate, to the point of delivery. The container shall conform to the requirements of Title 49, Code of Federal Regulations.

5.1.1 Packing container. Unless otherwise specified in the contract or purchase order, the packing container shall be a level C container. The container shall be certified by the supplier to be suitable for shipment as required by the contract.

5.2 Marking. Marking for shipment shall be in accordance with the instructions of the contract and shall comply with MIL-STD-129. Additional marking shall include order number, place and date of packing, lot number, and applicable drawing number.

6. NOTES

6.1 Intended use. Propellants procured under this specification are intended for use in 30MM ammunition for the GAU-8/A Gun System.

6.2 Ordering data. Invitations for bids and contracts or orders will specify the following:

6.2.1 Procurement data

a. Title, number and date of this specification.

b. First article test quantity from first production lot, including cartridges for government evaluation, if necessary.

c. Exceptions to this specification.

d. List of applicable revisions to non-government documents.

e. List, or reference document with listing of, approved thermochemical constants if other than AMCP 706-247 (see 4.3.2.1).

f. Alternate projectiles to be used in environmental tests, if applicable.

g. Test projectile drawing revision and weight.

6.2.2 Supplier data. In addition to the above, the procuring agency shall specify the following items to the supplier:

a. Nomenclature of propellant and type of cartridge for which it is intended.

b. Documentation requirement.

c. Place of inspection, if not at place of manufacture.

d. Packing container requirements.

e. Quantities and types of procuring agency-furnished items.

6.3 Definitions.

6.3.1 Purchase order. Where the term "purchase order" is used herein it shall be understood to mean the procurement order from the procuring activity to the supplier.

6.3.2 Procuring Activity. The industrial organization awarded the procurement of the item defined by this specification.

6.3.3 Supplier. The organization which provides material or services under contractor direction and responsibility.

6.3.4 Test projectiles/Test cartridges. Unless otherwise specified on purchase order, the propellant will be tested using 30MM PGU series projectiles in cartridge assemblies defined by 30MM PGU series drawings.

6.3.5 Calibration of instrumentation. A reference lot of 30MM TP ammunition will be manufactured. It will be tested and established as a control baseline. The reference lot accuracy will be established by averaging the first five-10 round accuracy tests. Prior to acceptance testing of each lot, a minimum of ten rounds per day will be fired to establish pressure, velocity and action time. Ballistic variation between reference and acceptance test lots will be adjusted as follows:

$$X_a + X_{ra} - X_r = \text{corrected } X_a$$

Where X_a is mean of acceptance lot

X_r is mean of reference lot sample

X_{ra} is mean of reference acceptance baseline.

6.3.6 Standard deviation. The standard deviation for use in testing for muzzle velocity, pressure and action time shall be calculated in accordance with the following formula:

$$\sigma = \sqrt{\frac{\Sigma\left(x_i - \bar{x}\right)^2}{n-1}}$$

6.3.7 Propellant ballistic test failures – Unless otherwise specified in the purchase order, only ballistic test failures identified as due to the propellant and conducted as part of lot acceptance tests shall be subject to detailed failure analysis by the supplier. Propellant performance anomalies observed during charge establishment or charge verification tests shall be recorded and reported to the contractor for information only.

If a failure is observed prior to lot acceptance testing, the data shall be reviewed with the contractor prior to conducting lot acceptance tests. Failure attributed to any of the following shall be considered a failure of the propellant.

a. Failure of test equipment.

b. Failure caused by personnel errors.

c. Failure due to other cartridge components.

Failures observed in tests of the lot acceptance test sample shall be documented and failure analysis reported to the contractor following successful completion of the retest. If an applicable failure occurs during the retest, the lot shall be rejected and a detailed failure analysis shall be submitted and approved prior to submittal of subsequent lots for acceptance testing.

6.3.8 Maximum charge. The maximum charge for a propellant is defined as that quantity which, when placed into a primed case through a funnel with a 0.5625 inch inside diameter and with a total drop time of no greater than 5 seconds, will yield a zero airspace with an intrusion depth of 0.930 inches as referenced from the mouth of the cartridge case.

CONTRACT C REQUIREMENTS GENERIC SECTION C

PRON: M1XEX5ED30 AMC: AMSC: ATC:

TDP: 2801855 TDPL DATE: 03/14/2025

NSN: 9999-99-999-9999 NOMENCLATURE : PROPELLANT

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

THE FOLLOWING DOCUMENTS ARE APPLICABLE TO THIS PROCUREMENT: TDP 2801855, REV C, DATED 14 MAR 2025.

1) 28081855 Rev C DWG

GFM/GFE: DRAWING NO.

0

MYLARS REQUIRED (Check One): ☐ YES ☒ NO

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	[redacted]	[redacted]	[redacted]		
Eng Act	Type/Print Name	Signature/Concurrence	Date	Office Symbol	DSN Telephone

CONTRACT C REQUIREMENTS-REVISION-B

PRON: M1XEX5ED31 AMC: AMSC:

TDPL: MIL-P-60989:19200 TDPL DATE: 12/13/2024

NSN: 1376-01-085-7243 NOMENCLATURE : PROPELLANT, M2

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Safety

SD	ADD	DELETE
238		X
320		X

Packaging:

TDPL:

DOCUMENT	ADD	DELETE
12525172	X	
12525173	X	
12972488	X	
8794342	X	
9211788	X	

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

9211789	X
9381477	X
12999545	X
1948-4172	X
1948-4174	X
ACV00561	X
ACV00831	X
9381476	X

Product Engineer:

(Potassium Nitrate, MIL-DTL-156)
Lab exception 1: RFAAP uses atomic absorption spectroscopy for calcium, magnesium, and sodium determinations, MIL-DTL-156D utilizes ICP-OES.
Lab exception 2: RFAAP utilizes the method specified in MIL-P-156B for chlorates and perchlorates determination.
Lab exception 3: RFAAP utilizes ferrous ammonium sulfate for nitrogen determination, instead of ferrous sulfate as written in MIL-DTL-156D.

(Barium Nitrate, MIL-DTL-162)
Lab exception 1: RFAAP is unable to comply with the ICP-OES methods for quantitating strontium and calcium. The gravimetric methods for these elements described in MIL-B-162D are used.

Acetone (ASTM D 329)
Lab exception 1: Alkalinity - ASTM D1614-09 provides directions for making standard solutions of sulfuric acid. RFAAP uses NIST traceable sulfuric acid solutions.
Lab exception 2: Acidity - ASTM D1613-06 provides directions for making standard solutions of sodium hydroxide. RFAAP uses NIST traceable sodium hydroxide solutions.
Lab exception 3: Moisture – Commercially available Karl Fischer reagent and pyridine-free solvent are used, demonstrated to be functionally equivalent to those specified in ASTM D1364.

Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED32 AMC: AMSC:

TDPL: 13021760:19200 TDPL DATE: 12/13/2024

NSN: 1376-01-587-6080 NOMENCLATURE : COAI F/PROPELLANT M9,FLAKE(FOR USE IN 40

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Safety

SD	ADD	DELETE
30	X	
31	X	
37	X	
38	X	
238		X
320		X

Packaging:

TDPL:

DOCUMENT	ADD	DELETE

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

R05K2017 Sh 4		X
R05K2017 Sh 5		X
12999545	X	
1948-4172	X	
1948-4174	X	
ACV00561	X	
ACV00831	X	

Product Engineer:
TDPL:

DOCUMENT	DELETE	SUBSTITUTE	ADD
MIL-DTL-156	--	--	XX
MIL-DTL-255	--	--	XX
MIL-DTL-244	--	--	XX

- MIL-STD-105, referenced in MIL-P-50206, was canceled 06-FEB-2008. Future acquisitions may refer to MIL-STD-1916.
- MIL-STD-109, referenced in MIL-P-50206, was canceled 31-MAY-1995 without replacement.

(Potassium Nitrate, MIL-DTL-156)
Lab exception 1: RFAAP uses atomic absorption spectroscopy for calcium, magnesium, and sodium determinations, MIL-DTL-156D utilizes ICP-OES.
Lab exception 2: RFAAP utilizes the method specified in MIL-P-156B for chlorates and perchlorates determination.
Lab exception 3: RFAAP utilizes ferrous ammonium sulfate for nitrogen determination, instead of ferrous sulfate as written in MIL-DTL-156D.

Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244), used in M9 flake is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS

PRON: M1XEX5ED33 AMC: AMSC:

TDPL: MIL-DTL-244-A-T1:19200 TDPL DATE: 02/24/2025

NSN: 1376-01-130-6392 NOMENCLATURE : NITROCELLULOSE

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Product Engineer:

Wood Pulp, Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244) is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

****

Packaging:

-Delete MIL-DTL-244, Paragraph 6.4.2.1 in its entirety and replace with the following:

6.4.2.1 Level A. Level A packaging for condition 1 or condition 2 materials should be packed in steel drums with a nominal capacity of 208 liters (55 U.S. gallons) conforming to specification 1A2, paragraph 178.504 of Title 49, Code of

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

Federal Regulations (49CFR). The drums should be free of any foreign materials. A bag conforming to Type-III, Class-B, Style-2, MIL-DTL-117 (an alternate bag which meets the requirements of the present bag may be used), should be placed in the drum and filled with material conforming to 6.4.1.1 or 6.4.1.2, as applicable. Close the bag and secure with tape conforming to ASTM D5486/D5486M, Type IV, 24mm (1 inch Nominal) wide minimum, (an alternate closure of a plastic cable tie is permissible provided that no damage occurs to the bag). Close the drum and secure the cover.

-MIL-DTL-244, Paragraph 6.4.4, change:
From: RDAR-EIL-P
To: FCDD-ACE-LP

TDPL:

DOCUMENT	ADD	DELETE
ASTM D5486/D5486M	X	
MIL-DTL-117	X	
49 CFR, PARTS 100-199	X	

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED34 AMC: AMSC:

TDPL: MIL-DTL-244-A-T2:19200 TDPL DATE: 02/25/2025

NSN: 9999-99-999-9999 NOMENCLATURE : NITROCELLULOSE

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Product Engineer:

Wood Pulp, Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244) is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

****

Packaging:

-Delete MIL-DTL-244, Paragraph 6.4.2.1 in its entirety and replace with the following:

6.4.2.1 Level A. Level A packaging for condition 1 or condition 2 materials should be packed in steel drums with a nominal capacity of 208 liters (55 U.S. gallons) conforming to specification 1A2, paragraph 178.504 of Title 49, Code of

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

Federal Regulations (49CFR). The drums should be free of any foreign materials. A bag conforming to Type-III, Class-B, Style-2, MIL-DTL-117 (an alternate bag which meets the requirements of the present bag may be used), should be placed in the drum and filled with material conforming to 6.4.1.1 or 6.4.1.2, as applicable. Close the bag and secure with tape conforming to ASTM D5486/D5486M, Type IV, 24mm (1 inch Nominal) wide minimum, (an alternate closure of a plastic cable tie is permissible provided that no damage occurs to the bag). Close the drum and secure the cover.

-MIL-DTL-244, Paragraph 6.4.4, change:
From: RDAR-EIL-P
To: FCDD-ACE-LP

TDPL:

DOCUMENT	ADD	DELETE
ASTM D5486/D5486M	X	--
MIL-DTL-117	X	--
49 CFR, PARTS 100-199	X	--
MIL-STD-129	X	--
12999545	X	--
1948-4174	X	--
ACV00561	X	--
ACV00831	X	--

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED35 AMC: AMSC:

TDPL: MIL-DTL-244-B-T1:19200 TDPL DATE: 02/25/2025

NSN: 1376-01-185-5467 NOMENCLATURE : NITROCELLULOSE

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Product Engineer:

Cellulose, Cotton - MIL-C-206A with Interim Amendment 2
Lab exception 1: Moisture: MIL-C-206A refers to the Tappi Method T412 for moisture determination. The Tappi method indicates that the sample should be dried and weighed repeatedly until two successive weighings do not differ by more than 0.10% of the sample weight. In RFAAP's procedure, the sample is dried and weighed once.
Lab exception 2: Alkali Soluble Matter: MIL-C-206A indicates that a glass -stoppered weighing bottle is to be used in all weighings involving the crucible. RFAAP's procedure does not require the weighing bottle.
Lab exception 3: MIL-C-206A specifies a falling sphere viscometer with a cuprammonium solution be used in viscosity determination. RFAAP's procedure uses the instructions from MIL-C-216B for Wood Pulp which uses cupriethylene-diamine solution.

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

****

Packaging:

-Delete MIL-DTL-244, Paragraph 6.4.2.1 in its entirety and replace with the following:

6.4.2.1 Level A. Level A packaging for condition 1 or condition 2 materials should be packed in steel drums with a nominal capacity of 208 liters (55 U.S. gallons) conforming to specification 1A2, paragraph 178.504 of Title 49, Code of Federal Regulations (49CFR). The drums should be free of any foreign materials. A bag conforming to Type-III, Class-B, Style-2, MIL-DTL-117 (an alternate bag which meets the requirements of the present bag may be used), should be placed in the drum and filled with material conforming to 6.4.1.1 or 6.4.1.2, as applicable. Close the bag and secure with tape conforming to ASTM D5486/D5486M, Type IV, 24mm (1 inch Nominal) wide minimum, (an alternate closure of a plastic cable tie is permissible provided that no damage occurs to the bag). Close the drum and secure the cover.

-MIL-DTL-244, Paragraph 6.4.4, change:
From: RDAR-EIL-P
To: FCDD-ACE-LP

TDPL:

DOCUMENT	ADD	DELETE
ASTM D5486/D5486M	X	
MIL-DTL-117	X	
49 CFR, PARTS 100-199	X	
MIL-STD-129	X	--
12999545	X	--
1948-4174	X	--
ACV00561	X	--
ACV00831	X	--

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED36 AMC: AMSC:

TDPL: MIL-DTL-244-B-T2:19200 TDPL DATE: 02/25/2025

NSN: 9999-99-999-9999 NOMENCLATURE : NITROCELLULOSE

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Product Engineer:

Cellulose, Cotton - MIL-C-206A with Interim Amendment 2
Lab exception 1: Moisture: MIL-C-206A refers to the Tappi Method T412 for moisture determination. The Tappi method indicates that the sample should be dried and weighed repeatedly until two successive weighings do not differ by more than 0.10% of the sample weight. In RFAAP's procedure, the sample is dried and weighed once.
Lab exception 2: Alkali Soluble Matter: MIL-C-206A indicates that a glass -stoppered weighing bottle is to be used in all weighings involving the crucible. RFAAP's procedure does not require the weighing bottle.
Lab exception 3: MIL-C-206A specifies a falling sphere viscometer with a cuprammonium solution be used in viscosity determination. RFAAP's procedure uses the instructions from MIL-C-216B for Wood Pulp which uses cupriethylene-diamine solution.

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

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Packaging:

-Delete MIL-DTL-244, Paragraph 6.4.2.1 in its entirety and replace with the following:

6.4.2.1 Level A. Level A packaging for condition 1 or condition 2 materials should be packed in steel drums with a nominal capacity of 208 liters (55 U.S. gallons) conforming to specification 1A2, paragraph 178.504 of Title 49, Code of Federal Regulations (49CFR). The drums should be free of any foreign materials. A bag conforming to Type-III, Class-B, Style-2, MIL-DTL-117 (an alternate bag which meets the requirements of the present bag may be used), should be placed in the drum and filled with material conforming to 6.4.1.1 or 6.4.1.2, as applicable. Close the bag and secure with tape conforming to ASTM D5486/D5486M, Type IV, 24mm (1 inch Nominal) wide minimum, (an alternate closure of a plastic cable tie is permissible provided that no damage occurs to the bag). Close the drum and secure the cover.

-MIL-DTL-244, Paragraph 6.4.4, change:
From: RDAR-EIL-P
To: FCDD-ACE-LP

TDPL:

DOCUMENT	ADD	DELETE
ASTM D5486/D5486M	X	--
MIL-DTL-117	X	--
49 CFR, PARTS 100-199	X	--
MIL-STD-129	X	--
12999545	X	--
1948-4174	X	--
ACV00561	X	--
ACV00831	X	--

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED37 AMC: AMSC:

TDPL: MIL-DTL-244-B-T3:19200 TDPL DATE: 02/25/2025

NSN: 9999-99-999-9999 NOMENCLATURE : NITROCELLULOSE

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Product Engineer:

Cellulose, Cotton - MIL-C-206A with Interim Amendment 2
Lab exception 1: Moisture: MIL-C-206A refers to the Tappi Method T412 for moisture determination. The Tappi method indicates that the sample should be dried and weighed repeatedly until two successive weighings do not differ by more than 0.10% of the sample weight. In RFAAP's procedure, the sample is dried and weighed once.
Lab exception 2: Alkali Soluble Matter: MIL-C-206A indicates that a glass -stoppered weighing bottle is to be used in all weighings involving the crucible. RFAAP's procedure does not require the weighing bottle.
Lab exception 3: MIL-C-206A specifies a falling sphere viscometer with a cuprammonium solution be used in viscosity determination. RFAAP's procedure uses the instructions from MIL-C-216B for Wood Pulp which uses cupriethylene-diamine solution.

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

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Packaging:

-Delete MIL-DTL-244, Paragraph 6.4.2.1 in its entirety and replace with the following:

6.4.2.1 Level A. Level A packaging for condition 1 or condition 2 materials should be packed in steel drums with a nominal capacity of 208 liters (55 U.S. gallons) conforming to specification 1A2, paragraph 178.504 of Title 49, Code of Federal Regulations (49CFR). The drums should be free of any foreign materials. A bag conforming to Type-III, Class-B, Style-2, MIL-DTL-117 (an alternate bag which meets the requirements of the present bag may be used), should be placed in the drum and filled with material conforming to 6.4.1.1 or 6.4.1.2, as applicable. Close the bag and secure with tape conforming to ASTM D5486/D5486M, Type IV, 24mm (1 inch Nominal) wide minimum, (an alternate closure of a plastic cable tie is permissible provided that no damage occurs to the bag). Close the drum and secure the cover.

-MIL-DTL-244, Paragraph 6.4.4, change:
From: RDAR-EIL-P
To: FCDD-ACE-LP

TDPL:

DOCUMENT	ADD	DELETE
ASTM D5486/D5486M	X	--
MIL-DTL-117	X	--
49 CFR, PARTS 100-199	X	--
MIL-STD-129	X	--
12999545	X	--
1948-4174	X	--
ACV00561	X	--
ACV00831	X	--

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED38 AMC: AMSC:

TDPL: MIL-DTL-244-C-T1:19200 TDPL DATE: 02/25/2025

NSN: 1376-01-185-5468 NOMENCLATURE : NITROCELLULOSE

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Packaging:

-Delete MIL-DTL-244, Paragraph 6.4.2.1 in its entirety and replace with the following:

6.4.2.1 Level A. Level A packaging for condition 1 or condition 2 materials should be packed in steel drums with a nominal capacity of 208 liters (55 U.S. gallons) conforming to specification 1A2, paragraph 178.504 of Title 49, Code of Federal Regulations (49CFR). The drums should be free of any foreign materials. A bag conforming to Type-III, Class-B, Style-2, MIL-DTL-117 (an alternate bag which meets the requirements of the present bag may be used), should be placed in the drum and filled with material conforming to 6.4.1.1 or 6.4.1.2, as applicable. Close the bag and secure with tape conforming to ASTM D5486/D5486M, Type IV, 24mm (1 inch Nominal) wide minimum, (an alternate closure of a plastic cable tie is permissible provided that no damage occurs to the bag). Close the

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

drum and secure the cover.

-MIL-DTL-244, Paragraph 6.4.4, change:
From: RDAR-EIL-P
  To: FCDD-ACE-LP

TDPL:

DOCUMENT	ADD	DELETE
ASTM D5486/D5486M	X	--
MIL-DTL-117	X	--
49 CFR, PARTS 100-199	X	--
12999545	X	--
1948-4174	X	--
ACV00561	X	--
ACV00831	X	--
MIL-STD-129	X	--

//
Product Engineer:

Cellulose, Cotton – MIL-C-206A with Interim Amendment 2
Lab exception 1: Moisture: MIL-C-206A refers to the Tappi Method T412 for moisture determination. The Tappi method indicates that the sample should be dried and weighed repeatedly until two successive weighings do not differ by more than 0.10% of the sample weight. In RFAAP's procedure, the sample is dried and weighed once.
Lab exception 2: Alkali Soluble Matter: MIL-C-206A indicates that a glass –stoppered weighing bottle is to be used in all weighings involving the crucible. RFAAP's procedure does not require the weighing bottle.
Lab exception 3: MIL-C-206A specifies a falling sphere viscometer with a cuprammonium solution be used in viscosity determination. RFAAP's procedure uses the instructions from MIL-C-216B for Wood Pulp which uses cupriethylene-diamine solution.

Wood Pulp, Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244) is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED39 AMC: AMSC:

TDPL: MIL-DTL-244-C-T2:19200 TDPL DATE: 02/25/2025

NSN: 1376-01-185-5470 NOMENCLATURE : NITROCELLULOSE

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Packaging:

-Delete MIL-DTL-244, Paragraph 6.4.2.1 in its entirety and replace with the following:

6.4.2.1 Level A. Level A packaging for condition 1 or condition 2 materials should be packed in steel drums with a nominal capacity of 208 liters (55 U.S. gallons) conforming to specification 1A2, paragraph 178.504 of Title 49, Code of Federal Regulations (49CFR). The drums should be free of any foreign materials. A bag conforming to Type-III, Class-B, Style-2, MIL-DTL-117 (an alternate bag which meets the requirements of the present bag may be used), should be placed in the drum and filled with material conforming to 6.4.1.1 or 6.4.1.2, as applicable. Close the bag and secure with tape conforming to ASTM D5486/D5486M, Type IV, 24mm (1 inch Nominal) wide minimum, (an alternate closure of a plastic cable tie is permissible provided that no damage occurs to the bag). Close the

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

drum and secure the cover.

-MIL-DTL-244, Paragraph 6.4.4, change:
From: RDAR-EIL-P
  To: FCDD-ACE-LP

TDPL:

DOCUMENT	ADD	DELETE
ASTM D5486/D5486M	X	--
MIL-DTL-117	X	--
49 CFR, PARTS 100-199	X	--
12999545	X	--
1948-4174	X	--
ACV00561	X	--
ACV00831	X	--
MIL-STD-129	X	--

****

Product Engineer:

Cellulose, Cotton – MIL-C-206A with Interim Amendment 2
Lab exception 1: Moisture: MIL-C-206A refers to the Tappi Method T412 for moisture determination. The Tappi method indicates that the sample should be dried and weighed repeatedly until two successive weighings do not differ by more than 0.10% of the sample weight. In RFAAP's procedure, the sample is dried and weighed once.
Lab exception 2: Alkali Soluble Matter: MIL-C-206A indicates that a glass –stoppered weighing bottle is to be used in all weighings involving the crucible. RFAAP's procedure does not require the weighing bottle.
Lab exception 3: MIL-C-206A specifies a falling sphere viscometer with a cuprammonium solution be used in viscosity determination. RFAAP's procedure uses the instructions from MIL-C-216B for Wood Pulp which uses cupriethylene-diamine solution.

Wood Pulp, Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244) is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED40 AMC: AMSC:

TDPL: MIL-DTL-244-D:19200 TDPL DATE: 02/25/2025

NSN: 9999-99-999-9999 NOMENCLATURE : NITROCELLULOSE

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Packaging:

-Delete MIL-DTL-244, Paragraph 6.4.2.1 in its entirety and replace with the following:

6.4.2.1 Level A. Level A packaging for condition 1 or condition 2 materials should be packed in steel drums with a nominal capacity of 208 liters (55 U.S. gallons) conforming to specification 1A2, paragraph 178.504 of Title 49, Code of Federal Regulations (49CFR). The drums should be free of any foreign materials. A bag conforming to Type-III, Class-B, Style-2, MIL-DTL-117 (an alternate bag which meets the requirements of the present bag may be used), should be placed in the drum and filled with material conforming to 6.4.1.1 or 6.4.1.2, as applicable. Close the bag and secure with tape conforming to ASTM D5486/D5486M, Type IV, 24mm (1 inch Nominal) wide minimum, (an alternate closure of a plastic cable tie is permissible provided that no damage occurs to the bag). Close the

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

drum and secure the cover.

-MIL-DTL-244, Paragraph 6.4.4, change:
From: RDAR-EIL-P
  To: FCDD-ACE-LP

TDPL:

DOCUMENT	ADD	DELETE
ASTM D5486/D5486M	X	--
MIL-DTL-117	X	--
49 CFR, PARTS 100-199	X	--
MIL-STD-129	X	--
12999545	X	--
1948-4174	X	--
ACV00561	X	--
ACV00831	X	--

****

Product Engineer:

Wood Pulp, Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244) is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED41 AMC: AMSC:

TDPL: MIL-DTL-244-E:19200 TDPL DATE: 02/25/2025

NSN: 9999-99-999-9999 NOMENCLATURE : NITROCELLULOSE

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Packaging:

-Delete MIL-DTL-244, Paragraph 6.4.2.1 in its entirety and replace with the following:

6.4.2.1 Level A. Level A packaging for condition 1 or condition 2 materials should be packed in steel drums with a nominal capacity of 208 liters (55 U.S. gallons) conforming to specification 1A2, paragraph 178.504 of Title 49, Code of Federal Regulations (49CFR). The drums should be free of any foreign materials. A bag conforming to Type-III, Class-B, Style-2, MIL-DTL-117 (an alternate bag which meets the requirements of the present bag may be used), should be placed in the drum and filled with material conforming to 6.4.1.1 or 6.4.1.2, as applicable. Close the bag and secure with tape conforming to ASTM D5486/D5486M, Type IV, 24mm (1 inch Nominal) wide minimum, (an alternate closure of a plastic cable tie is permissible provided that no damage occurs to the bag). Close the

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

drum and secure the cover.

-MIL-DTL-244, Paragraph 6.4.4, change:
From: RDAR-EIL-P
  To: FCDD-ACE-LP

TDPL:

DOCUMENT	ADD	DELETE
ASTM D5486/D5486M	X	--
MIL-DTL-117	X	--
49 CFR, PARTS 100-199	X	--
MIL-STD-129	X	--
12999545	X	--
1948-4174	X	--
ACV00561	X	--
ACV00831	X	--

****
Product Engineer:

Wood Pulp, Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244) is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.

CONTRACT C REQUIREMENTS-REVISION-A

PRON: M1XEX5ED42 AMC: AMSC:

TDPL: MIL-DTL-244-F:19200 TDPL DATE: 02/25/2025

NSN: 9999-99-999-9999 NOMENCLATURE : NITROCELLULOSE

ENGINEERING EXCEPTIONS: The Following Engineering Exceptions Apply To This Procurement Action(s):

Packaging:

-Delete MIL-DTL-244, Paragraph 6.4.2.1 in its entirety and replace with the following:

6.4.2.1 Level A. Level A packaging for condition 1 or condition 2 materials should be packed in steel drums with a nominal capacity of 208 liters (55 U.S. gallons) conforming to specification 1A2, paragraph 178.504 of Title 49, Code of Federal Regulations (49CFR). The drums should be free of any foreign materials. A bag conforming to Type-III, Class-B, Style-2, MIL-DTL-117 (an alternate bag which meets the requirements of the present bag may be used), should be placed in the drum and filled with material conforming to 6.4.1.1 or 6.4.1.2, as applicable. Close the bag and secure with tape conforming to ASTM D5486/D5486M, Type IV, 24mm (1 inch Nominal) wide minimum, (an alternate closure of a plastic cable tie is permissible provided that no damage occurs to the bag). Close the

(Continued Next Page)

GFM/GFE : DRAWING NO

Drawing Masters REQUIRED (Check One): ___YES X__NO

POC _____ Telephone# _____ E-mail _____

CERTIFICATION SIGNATURE(s) / CONCURRENCE :

	Type/Print Name	Signature	Date	Office Symbol	DSN Telephone
ENG	[redacted]	[redacted]	[redacted]		
LCSE					
PKG	[redacted]	[redacted]	[redacted]		
PKG-REV					
QESA	[redacted]	[redacted]	[redacted]		

ENGINEERING EXCEPTION TEXT (CONTINUED):

drum and secure the cover.

-MIL-DTL-244, Paragraph 6.4.4, change:
From: RDAR-EIL-P
  To: FCDD-ACE-LP

TDPL:

DOCUMENT	ADD	DELETE
ASTM D5486/D5486M	X	--
MIL-DTL-117	X	--
49 CFR, PARTS 100-199	X	--
MIL-STD-129	X	--
12999545	X	--
1948-4174	X	--
ACV00561	X	--
ACV00831	X	--

****
Product Engineer:

Wood Pulp, Sulfite (MIL-C-216), which may be a constituent in Nitrocellulose (MIL-DTL-244) is in the updating process to address RFAAP lab exceptions. An ECP will be submitted.