

1. **PRODUCT AND COMPANY IDENTIFICATION**

Product Family: Firex

Product Name: Cartridge, power device

Trade Name/Synonyms	Product Number(s)	Net Explosive Weight (g, Maximum)
Cartridge Assembly, Aircraft fire extinguisher (FIREX) cartridge	See Table 1	0.342
Cartridge Assembly, Aircraft fire extinguisher (FIREX) cartridge	See Table 2	0.362

Table 1

Product Number(s)	Product Number(s)	Product Number(s)	Product Number(s)	Product Number(s)	Product Number(s)
30903940	30903942	30903959	2-102590-2	2-102600-2	30903876
30903890	2-102590-1	2-102610-1	2-102610-2	30900000M	30903801
30903822	2-102600-1	30903827-2	2-102820-1	30903845	30903852
30903856	30903827	30903859	7263959	30903861	30903870
30903874	30903857	30903889	30903828	30903892	30903894
30903895	30903886/C	30903898	30903860	30903921	30903927
30903930	30903896	2-102520-2	30903891	2-102530-2	2-102960-1
2-102570-2	2-102740-3	2-102730-1	30903899	2-102290-2	2-102560-2
2-102780-2	2-102540-2	2-101200-1	2-102670-2	2-102580-2	2-102770-1
2-102790-1	2-101200-2	2-102800-1	2-102550-2	2-102640-2	2-102650-2
30903933	2-102620-2	2-102660-1	2-102740-1	2-102520-1	30903931
30903943	2-102810-1	30903935	2-102630-2	30903939	30903941
30903962-2	30903934	30903945	2-102530-1	30903962	30903962-1
30903975	30903944	30903963-1	30903936	30903963-3	30903964
2-102290-1	30903963	30903984-1	30903949	2-102540-1	2-102550-1
2-102630-1	30903976	2-102570-1	30903963-2	2-102780-1	2-102620-1
30903983	2-102560-1	2-102650-1	30903985	2-102860-1	2-102900-1
30903951	2-102640-1	2-102670-1	2-102580-1	30903916-1	30903982
30903955	30903956	2-102920-1	2-101780-3	2-103450-1	2-103460-1
2-102920-2	2-103490-1	2-102930-1	2-102930-2	2-103680-1	2-103500-1
2-102740-2	2-103210-1	2-103220-1	2-103470-1	2-103480-1	1377-01-487-2302
(2-102740-3)	1377-01-255-1598	1377-01-255-2382	1377016319588ES		

Table 2

Product Number(s)	Product Number(s)	Product Number(s)	Product Number(s)	Product Number(s)	Product Number(s)
30903836	30903871	30903872	30903872-1	30903875	30903938
30903912	30903928	30903929	30903932	30903937	30903938-1
2-102470-2	2-102480-2	2-102490-2	2-102500-2	2-102280-2	2-102280-1
2-102510-1	2-103510-1	2-102480-1	2-102490-1	2-102500-1	2-102060-1
2-102470-1	30903914-1	30903993	2-101780-1	30903915-1	2-101780-2
2-102510-2	30903913	30903990	2-103560-1		

This is a manufactured article.

Recommended Use/Restrictions on Use: Use per manufacturer's design and intended use only.

Manufacturer CAGE Code: 54181

Pacific Scientific Energetic Materials Company
7073 West Willis Road
Chandler, Arizona 85226-5111

(480) 763-3000 [6am-4:30pm MST]
(480) 346-7810 FAX
(800) 535-5053 Infotrac [24-hr]
www.psemc.com

2. Hazard Identification

Statements		
Physical Hazards	Health Hazards	Environmental Hazards
H204 - Fire or Projection Hazard	No health hazards are present when product is used as intended.	No environmental precautions are required when product is used as intended.

Signal Word:

Warning

Hazard Class:

Explosive (Category 1.4)



Precautionary Statements
General
<p>P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P210 - Keep away from heat/sparks/open flames/hot surfaces. No Smoking. P250 - Do not subject to shock, impact, friction, electrostatic discharge, high pressure or high temperature P280 - Wear protective gloves/protective clothing/eye protection/face protection. P283 - Wear fire/flame resistant/retardant clothing P243 - Take precautionary measures against static discharge.</p>
Emergency Response
<p>P370 - In case of fire: Evacuate area; Do not attempt to fight fires. P372 - Explosion risk in case of fire except if explosives are 1.4S AMUNITION AND COMPONENTS THEREOF. P374 - Fight fire with normal precautions from a reasonable distance if explosives are 1.4S AMMUNITION AND COMPONENTS THEREOF. P375 - Fight Fire Remotely due to risk of explosion P380 - Evacuate area.</p>
Storage
P401 - Store in accordance with federal, state and local regulations concerning storage and handling of explosives.
Disposal
P501 - Dispose of contents/container in accordance with local/regional/national/international regulation concerning disposal of explosives.

3. **COMPOSITION / INFORMATION ON INGREDIENTS**

Chemical Name	CAS Number	EC Number	% of Article weight	Chemical Name	CAS Number	EC Number	% of Article weight
Graphite	7782-42-5	231-955-3	≤1	Zirconium	7440-67-7	231-176-9	≤1
Potassium perchlorate	7778-74-7	231-912-9	≤1	Tetraamine-cis-bis-(5-nitro-2H-tetraazolato-N ²)cobalt ⁱⁱⁱ perchlorate (BNCP)	178959-25-6	Not Established	≤1
2,2',4,4',6,6'-Hexanitrostilbene (HNS)	20062-22-0	243-494-5	≤1	Difluoroethene-hexafluoropropene-tetrafluoroethene terpolymer	25190-89-0	Not Established	≤1
Stainless Steel	Mixture	NE	≤94				

***Exact percentage is withheld as a trade secret in accordance with 29 CFR 1910.1200(i). No chemical is present in an amount greater than cut-off values per 29 CFR 1910.1200 (Appendix A). Product is sealed article preventing exposure to chemical mixture(s).

4. **FIRST AID MEASURES**

EYES: Not a hazard in normal industrial use. Seek medical attention if needed.

SKIN: Not a hazard in normal industrial use. Seek medical attention if needed.

INHALATION: Not a hazard in normal industrial use. Seek medical attention if needed.

INGESTION: Not a hazard in normal industrial use. Seek medical attention if needed.

5. **FIRE FIGHTING MEASURES**

EXTINGUISHING MEDIA: Water

HAZARDOUS COMBUSTION PRODUCTS: Fragmentation, heat, and trace amounts of nitrogen and carbon oxides may be emitted during ignition.

6. **ACCIDENTAL RELEASE MEASURES**

If product seal ruptures, barricade area, eliminate ignition sources. Wet remaining material with water, soap/water solution or equivalent desensitizing solution. Keep spilled material wet to minimize ignition potential. Dispose of material and contaminated media as hazardous waste.

7. **HANDLING AND STORAGE**

HANDLING: Use and handling should be limited to experienced personnel qualified to manage explosives in accordance with applicable safety guidelines and regulations.

STORAGE: Store only in approved storage facilities. Keep product cool and dry in storage.

8. **EXPOSURE CONTROLS / PERSONAL PROTECTION**

EXPOSURE LIMITS: No regulatory limits apply; sealed article.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

EYE PROTECTION: Industrial safety glasses meeting ANSI Z87.1 standard or equivalent.

GLOVES: Not required when handling sealed units.

CLOTHING: High cotton-content clothing (>65%), as well as conductive shoes or legstat(s), wriststat(s) and a

static-dissipative coat are recommended to avoid static electricity build-up.

RESPIRATORY PROTECTION: Not required when handling sealed units.

VENTILATION: Not required when handling sealed units.

OTHER PROTECTION: None indicated.

ENGINEERING CONTROLS: Grounding or other controls are recommended to reduce static electricity build-up.

EXPOSURE GUIDELINES: Measurable exposure is not likely for this product in handling of sealed units.

9. PHYSICAL AND CHEMICAL PROPERTIES

- a) **APPEARANCE:** Metallic Ordnance Hardware
- b) **ODOR:** Odorless
- c) **ODOR THRESHOLD:** Not Applicable
- d) **pH @ 25°C:** Not Applicable
- e) **MELTING/FREEZING POINT:** Not Applicable
- f) **BOILING POINT:** Not Applicable
- g) **FLASH POINT:** Not Applicable
- h) **EVAPORATION RATE:** Not Applicable
- i) **FLAMMABILITY:** Not Applicable
- j) **FLAMMABILITY/EXPLOSIVE LIMIT:** Not Applicable
- k) **VAPOR PRESSURE:** Not Applicable
- l) **VAPOR DENSITY:** Not Applicable
- m) **RELATIVE DENSITY:** Greater than 1
- n) **SOLUBILITY IN H₂O:** Insoluble
- o) **PARTITION COEFFICIENT:** Not Applicable
- p) **AUTO-IGNITION TEMPERATURE:** 509°F (265°C) [BKNO₃]
- q) **VISCOSITY:** Not Applicable

10. STABILITY AND REACTIVITY

- 1. **REACTIVITY:** Stable when used and handled as designed.
- 2. **CHEMICAL STABILITY:** This explosive product is stable under normal conditions.
- 3. **POSSIBILITY OF HAZARDOUS REACTIONS:** Minimal when handled in accordance with manufacturer's instruction.
- 4. **CONDITIONS TO AVOID:** Shock, impact, friction, electrostatic discharge, high pressure, high temperature, and/or open flame.
- 5. **INCOMPATIBLE MATERIALS:** The product is sealed preventing exposure to the hazardous ingredients inside.
- 6. **HAZARDOUS DECOMPOSITION PRODUCTS:** Fragmentation, heat, and trace amounts of nitrogen and carbon oxides may be emitted during ignition.

11. TOXICOLOGICAL INFORMATION

HEALTH HAZARDS / TOXICOLOGY: Not applicable to product in present form.

12. ECOLOGICAL INFORMATION

Not applicable to product in present form.

13. DISPOSAL CONSIDERATIONS

FEDERAL WASTE CODES (product as manufactured):

D003 – Reactive characteristic

WASTE DISPOSAL METHOD: Waste disposal should be in accordance with existing federal, state and local environmental laws.

14. TRANSPORT INFORMATION

This product is defined by the U.S. Department of Transportation (49 CFR 172.101).
Shipping classification is in accordance with section 173.56.

Part Number	Proper Shipping Name	UN No.	Hazard Class.	Competent Authority
30903836, 30903871, 30903872, 30903872-1, 30903875, 30903876, 30903890, 30903912, 30903928, 30903929, 30903932, 30903937, 30903938, 30903938-1, 30903940, 30903942, 30903959, 2-102470-2, 2-102480-2, 2-102490-2, 2-102500-2, 2-102590-2, 2-102600-2, 2-102610-2, 2-102280-2, 2-102280-1, 2-102510-1, 2-102470-1, 2-102480-1, 2-102490-1, 2-102500-1, 2-102590-1, 2-102610-1, 2-102600-1, 2-102060-1, 7263959, 30900000M, 30903801, 30903822, 30903827, 30903827-2, 30903828, 30903845, 30903852, 30903856, 30903857, 30903859, 30903860, 30903861, 30903870, 30903874, 30903886/C, 30903889, 30903891, 30903892, 30903894, 30903895, 30903896, 30903898, 30903899, 30903921, 30903927, 30903930, 2-102740-3, 2-102520-2, 2-102670-2, 2-102530-2, 2-102960-1, 2-102820-1, 2-102540-2, 2-102730-1, 2-102550-2, 2-102290-2, 2-102560-2, 2-102570-2, 2-101200-2, 2-101200-1, 2-102740-1, 2-102580-2, 2-102770-1, 2-102780-2, 2-102620-2, 2-102800-1, P/N 2-102630-2, 2-102640-2, 2-102650-2, 2-102790-1, 2-102810-1, 2-102660-1, 2-102530-1, 2-102520-1, 30903931, 30903933, 30903915-1, 30903934, 30903935, 30903936, 30903939, 30903941, 30903943, 30903944, 30903945, 30903949, 30903951, 30903955, 30903956, 30903962, 2-102540-1, 2-102550-1, 2-102290-1, 2-102560-1, 2-102570-1, 2-102580-1, 2-102780-1, 2-102620-1, 2-102630-1, 2-102640-1, 2-102650-1, 2-102670-1, 2-102860-1, 2-102900-1, 2-102920-1	Cartridge, Power Device	UN0276	1.4C	EX2012111366
2-102920-2, 2-103490-1, 2-102930-1, 2-102930-2, 2-103680-1, 2-103500-1, 2-102740-2, 2-103210-1, 2-103220-1, 2-103470-1, 2-103480-1, 30903990, 2-103560-1, 30903962-1, 30903962-2, 30903963, 30903963-1, 30903963-2, 30903963-3, 30903964; 30903915-1, 30903975, 30903976, 30903984-1, 30903985, 30903914-1, 2-101780-1, 30903982, 2-103450-1, 30903983, 2-103460-1, 30903993, 2-103510-1, 2-102510-2 (30903913)	Cartridge, Power Device	UN0276	1.4C	EX2012111903 2nd revision
NSN 1377-01-487-2302 (2-102740-3, 7263959)	Cartridges, Power Device	UN0323*	1.4S	EX2002040283 1 st Revision
NSN 1377-01-255-1598 (30903861, 2-101200-1)	Cartridges, Power Device	UN0323	1.4S	EX1989010215 2 nd revision
NSN 1377-01-255-2382 (30903860, 2-101200-2)	Cartridges, Power Device	UN0323	1.4S	EX1989010214 2 nd revision
NSN 1377016319588ES, P/N2-102060-1	Cartridge, Power Device	UN0276	1.4C	Log No. 16-032*

*Interim Hazard Classification (IHC), expires March 21, 2017

Packaging: Package in accordance with the Competent Authority for the United States DOT Classification of Explosives approval.

15. REGULATORY INFORMATION

OSHA: Regulated under 29 CFR 1910.1200

TSCA: As a sealed device, TSCA listing is not required.

CERCLA RQ: 100 lbs. (45.4 kg) [D003 reactivity]

SARA - SECTION 302 TPQ: Not an Extremely Hazardous Substance.

- **SECTION 304 RQ:** See CERCLA RQ.

- **SECTION 313:** Not reportable

CALIFORNIA PROPOSITION 65: The product and its hazardous components are not on the list.

Bureau of Alcohol, Tobacco, Firearms, and Explosives (BATFE/ "ATF") Exempt per 27CFR§555.32, Exemption 16-803280 6-7-2016. Second ATF exemption 17-807735.

16. OTHER INFORMATION

REVISION HISTORY

Initial issue: 4/21/2014

Revised: 5/29/2014

Revised 7/9/2014

Revised 2-25-2015

Revised 8/6/2015

Revised 10/5/2015 BATF Exemption

Revised 10/28/2015 CA Revision

Revised 12/17/2015 Update N.E.W. for 2-102510-2/30903913.

Revised 3/21/2016 Added NSN to section 1 and 14.

Revised 4/4/2016 CA Revision

Revised: 5/10/2016 BATF Update

Revised: 7/18/2016 BATF Update

Revised: 12/14/16 add IHC for NSN 1377016319588ES , p/n 2-102060-1.

Revised: 3/20/2017 update section 14, format change.

Revised: 6/5/2017 update with ATF Update (exemption)

PREPARED BY: PSEMC Environmental, Health & Safety Dept.

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