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THE

BLASTER'S GUIDE

A Resource for the Explosives and Blasting Industry

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www.austinpowder.com/blastersguide

Product Information Bulletins

2018 PIB Catalog



6-26-18

AUSTIN POWDER
A TRADITION OF SAFETY, STRENGTH AND SERVICE

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AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Austinite® & HEET® Bulk Products

Booster Sensitive Augered ANFO and Emulsion / ANFO Blends.

DESCRIPTION

Bulk Austinite 15 (ANFO blasting agent) and bulk HEET (blends of emulsion and Austinite 15) are augered products for dry or dewatered blastholes that provide a wide range of energy and water resistance to meet many application requirements.

BENEFITS

- Good fragmentation and excellent heave provide easy digging muckpiles.
- Energy and water resistance can be adjusted to meet the application demands.
- Bulk HEET loading convenience and the potential for expanded patterns can reduce costs.



PROPERTIES

Product	Density [g/cc]	VOD*		Water Resistance	Minimum Hole Diameter	
		[ft/s]	[m/s]		[in]	[mm]
Austinite 15	0.82	13,000	3,960	Poor	2	50
Hydromite® 1100 Blends:						
HEET 130	1.20	13,500	4,115	Good**	4	100
HEET 150	1.30	15,500	4,725	Excellent**	5	125
Hydrox® 503 Blends:						
HEET 30	1.22	12,400	3,780	Good**	4	100
HEET 50	1.30	13,700	4,175	Excellent**	5	125

** 6" confined.*

*** When loaded in dry or dewatered holes.*

PRIMING

These products are booster sensitive explosives and must be in direct contact with an appropriate size cast booster. Additional primers may be required depending upon geological conditions and face height.

Austinite & HEET
Bulk Products



For more information and service locations in your area, please contact Austin Powder Company's headquarters:

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25800 Science Park Drive
Cleveland, Ohio, USA 44122

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Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
These products are designed to be used as they are manufactured from the bulk truck.

UN CLASSIFICATION
Austinite 15
Shipping Name: Ammonium Nitrate - Fuel Oil Mixture
Class & Division: 1.5D
ID Number: NA 0331
Hydromite 1100
Shipping Name: Explosive, Blasting, Type E
Class & Division: 1.5D
ID Number: UN 0332
Hydrox 503
Shipping Name: Oxidizing liquid, n.o.s. (contains Ammonium Nitrate / Fuel Oil Aqueous Emulsion)
Class & Division: 5.1
ID Number: UN 3375

DOT REFERENCE NUMBER
EX-1993030283 (Austinite 15)
EX-1987050019 (Hydromite 1100)
EX-1993030287 (Hydrox 503)

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Austinite® Series

Ammonium Nitrate / Fuel Oil Mixture

AUSTIN POWDER

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DESCRIPTION

Austinite is a series of ammonium nitrate / fuel oil blasting agent products for a variety of blasting applications.

BENEFITS

Austinite 15

- Contains only high quality industrial grade ammonium nitrate prill.
- Optimized fuel ratio for oxygen balanced detonation.
- Excellent free flowing handling characteristics.



Austinite WR 300

- Simply dewater borehole and load the WR300 before water returns.
- Provides full borehole coupling.
- 10% higher VOD than conventional ANFO.

Austinite 7 HE

- Aluminized ANFO product that produces higher heat of reaction than conventional ANFO.
- 37% higher energy than conventional ANFO.
- Expanded patterns are possible resulting in decrease blasting costs.

PROPERTIES

Product	Density [g/cc]	RBS‡	Water Resistance	VOD	
				[ft/s]	[m/s]
Austinite 15	0.82	100	Poor	13,000	3,962
Austinite WR 300	0.90	99	Good	14,300	4,380
Austinite 7 HE	0.85	137	Poor	12,500	3,818

‡ *Energy is calculated using TIGER, a thermo-dynamic computer code used by Austin Powder Company. Other computer codes may give different values. ANFO = 100 @ 0.82 g/cc.*

Austinite Series

PRIMING

Austinite products must be in direct contact with an appropriate size Red-D Prime® or cast booster. Additional primers may be required depending upon geological conditions and face height.

PACKAGING

Austinite Series products are packaged in 50 lb. multi-wall paper and 25 kg plastic valve bags.

Note: All dimensions and weights are nominal.

For more information and service locations in your area, please contact:

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25800 Science Park Drive
Cleveland, Ohio, USA 44122

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Email: info@austinpowder.com

STORAGE

Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE

Three months from date of manufacture under good storage conditions.

UN CLASSIFICATION

Shipping Name: Explosive, Blasting, Type B
Class & Division: 1.5D
ID Number: UN0331

DOT REFERENCE NUMBER

EX-1993030283 (Austinite 15)
EX-1993030284 (Austinite WR 300)
EX-1993030284 (Austinite 7 HE)

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Coal Mine Construction™ DelayDetonators

Copper Wire, Copper Shell Electric Detonators

DESCRIPTION

Coal Mine Construction electric detonators are designed to provide the precise control necessary to produce accurate and consistent blasting results in a variety of blasting applications in underground coal mine applications and other industries that require the use of a copper shell electric detonator.

BENEFITS

- 750 mg PETN base charge far exceeds the standard #8 strength detonator.
- Industries strongest copper shell reduces the possibility of water hammer effect.
- Anti-static PVC insulation for added protection from extraneous currents.
- Wide selection of delay intervals provide greater flexibility in blast design.



Properties & Packaging

Coal Mine Construction Delay Detonator Sequence							
Delay #	1	2	3	4	5	6	7
MS Time	25	50	75	100	125	150	175
Coal Mine Construction Delay Detonator Sequence (continued)							
Delay #	8	9	10	11	12	13	14
MS Time	200	250	300	350	400	450	500

Coal Mine Construction Delay Detonators

Properties & Packaging
(continued)

Coal Mine Construction Delay Detonator Recommended Firing Current				
Circuit Type	**Single Detonator**	**Single Series**	**Parallel Series**	**Parallel**
DC [Amps]	0.5	1.5	1.5	1.0–10.0/Detonator
AC [Amps]	0.5	2.0	2.0	1.0–10.0/Detonator

Coal Mine Construction Delay Detonator Packaging & Resistance						
Length		**Case Weight**		**Case Count**	**Total [Ω]***	**Wire Configuration**
[ft]	**[m]**	**[lb]**	**[kg]**			
16	4.9	13.2	6.0	100	1.5	Short Fold

** Includes fusehead resistance of 0.9 +/- 0.1 Ω.*

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STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
For optimum accuracy, use within five years from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Detonators, Electric
Class & Division: 1.4B
ID Number: UN 0255

DOT REFERENCE NUMBER
EX-0103067

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Coal Mine Delay™ Detonators

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MSHA Approved Detonators for Underground Coal and "Gassy" Mines.

DESCRIPTION

Austin Powder Company's Coal Mine Delays are specifically designed to provide the modern underground coal mine with the safest, highest quality detonator in the industry.

BENEFITS

- 720 mg PETN base charge far exceeds the standard #8 strength detonator.
- Thick copper shell resists dynamic compression.
- Accordion folded 23 AWG iron wire.
- Nine different color coded delays for easy delay identification.



Properties & Packaging

Coal Mine Delay Sequence & Colors									
Delay #	1	2	3	4	5	6	7	8	9
MS Time	25	100	175	250	300	350	400	450	500
Color	White	Pink	Blue	Orange	Green	Gold	Red	Lt. Green	Lt. Blue

Coal Mine Delay Detonators

Coal Mine Delay Electrical Data				
No Fire Current [Amps]	**All Fire Impulse [mJ]**	**Series Ignition Current [mJ]**	**No Fire Impulse [mJ]**	**Electrostatic Sensitivity (wire to wire)**
0.45 Amps	16	18	8	10 [kV]/2000[pF]

Coal Mine Delay Packaging & Resistance						
Length		**Case Weight**		**Case Count**	**Total* [Ω]**	**Wire Configuration**
[ft]	**[m]**	**[lb]**	**[kg]**			
8	2.4	45	20	500	2.7	Short Fold
14	4.2	55	25	500	4.2	Short Fold

** Includes fusehead resistance of 0.9 +/- 0.1 Ω.*

STORAGE

Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE

For optimum accuracy, use within five years from date of manufacture under good storage conditions.

UN CLASSIFICATION

Shipping Name: Detonators, Electric
Class & Division: 1.4B
ID Number: UN 0255

DOT REFERENCE NUMBER

EX-9303275

For more information and service locations in your area, please contact Austin Powder Company's headquarters:

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DC Cast Boosters

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

High-Density Explosives for Primer Applications.

DESCRIPTION

Austin DC Cast Boosters are high-density molecular explosives designed to produce high detonation pressures for optimum initiation of blasting agents. Austin Cast Boosters can be furnished with a cap well and cord channel that facilitate primer assembly. The DC family of Cast Boosters is sensitive to a #8 strength (450mg PETN) base charge detonator, or 15 grain per foot or greater detonating cord.

BENEFITS

- Austin DC Cast Boosters detonate in excess of 24,000 ft/sec (7,380 m/sec).
- Over 200 kb of detonation pressure ensures optimum steady state velocity for blasting agents.
- Excellent shelf life, highly resistant to water and oil.



Nugget Family

Product Name	Weight [g]	Outside Diameter		Length		Case Count			Typical Uses
		[in]	[mm]	[in]	[mm]	Inner Bag	Inner Carton	Case Total	
Gold Nugget™	8	0.69	18	1.71	43	20	200	2,000	For priming all small diameter blasting agents underground. Use a detonator of at least a #8 strength.
Diamond Nugget™	20	0.69	18	3.00	76	10	100	1,000	

Austin Powder Cast Boosters are manufactured with molecular explosives consisting of PETN, RDX, HMX and TNT, all of which are sensitive to severe impact, heat or friction. As with all explosives, Cast Boosters must be transported, stored and handled with care. Avoid any impact with solid surfaces or other Cast Boosters, as the potential for a premature detonation or misfire is possible.

DC Cast Boosters

PACKAGING & TYPICAL USES

Product Name	Weight		Outside Diameter		Length		Case Count	Typical Uses
	[oz]	[g]	[in]	[mm]	[in]	[mm]	Outer Case	
90 Gram	3.2	90	1.06	27	4.50	114	120	Priming seismic charges. Also secondary up-hole boosters in small diameter holes. Detonator and cord initiation. Use at least 50 grain detonating cord. *
Green Cap DC	5.3	151	1.43	36	4.50	114	64	Priming blasting agents in holes of 2" diameter or larger. *Detonator and cord initiation. Use 15 grain or greater detonating cord.* (Packaging – 4 x 40 units)*
Brown Cap DC	8	227	1.70	43	4.50	114	64	Priming blasting agents in holes of 2 1/2" diameter or larger. *Detonator and cord initiation. Use at least 15 grain detonating cord or greater.* (Packaging – 2 x 50 units)*
Red Cap	12	340	3.00	76	2.10	53	60	Priming blasting agents in holes of 4" diameter or larger. *Use 15 grain or greater detonating cord.*
Black Cap DC	12	340	2.05	52	4.60	117	49	Priming blasting agents in holes of 3" diameter or larger. *Detonator and cord initiation.*
Purple Cap	16	454	3.06	78	2.60	66	60	Priming blasting agents in holes of 4" diameter or larger. *Use at least 15 grain detonating cord.*
Orange Cap DC	16	454	2.33	59	4.50	114	36	Heavier booster for priming blasting agents in holes of 3" diameter or larger. *Detonator and cord initiation. Use at least 15 grain detonating cord or greater*
White Cap DC	32	900	3.06	78	5.10	130	18	Heavier booster for priming blasting agents in holes of 4" diameter or larger. *Detonator and cord initiation. Use at least 15 grain detonating cord or greater*
Rock Crusher #1	16	454	5.00	127	2.50	63.5	16	Use in secondary blasting applications to reduce oversize. For use with at least 25 grain detonating cord or detonator sensitive (secured to tail of the 50 grain detonating cord) Rock Crushers can be ordered as "CW" for use as detonator only.
Rock Crusher #2	32	900	6.25	159	3.00	76	12	

* Inner carton can be used as D.O.T. shipping container.

For more information and service locations in your area, please contact Austin Powder Company's headquarters:

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25800 Science Park Drive
Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
Five years from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Boosters
Class & Division: 1.1D
ID Number: UN 0042

DOT REFERENCE NUMBER
EX-1993030285

IN CASE OF EMERGENCY CALL
CHEMTREC 1-800-424-9300
Maritime 1-703-527-3887
International: dial access code + 00-1-703-527-3887

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AUSTIN POWDER

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Detonating Cord

The Industry's Premium Line of Detonating Cord

DESCRIPTION

Austin Powder manufacturers a wide variety of detonating cord to meet the requirements of the mining, quarrying and construction industries. Detonating cord is used to initiate detonator sensitive commercial explosives such as cast boosters, dynamites and emulsions. Detonating cord is also used to provide a path of initiation to non-electric detonators. Detonating cord has a core of PETN (pentaerythritol tetranitrate) encased in multiple polypropylene yarns, over-extruded with a polyethylene jacket and high strength textile yarns.

BENEFITS

- Water and abrasion resistant.
- High tensile strength.
- Color coded for easy identification.
- Electronically & mechanically inspected.
- Insensitive to extraneous current.
- Assures reliable non-electric initiation.



TYPICAL USES

Lite Line® & Lite Line Slideline™: Downline or upline under all but the most severe conditions.

A-Cord ™ & A-Cord Slideline: Small, medium and large hole downlines and trunklines; secondary blasting and long hole blasting underground.

50 Reinforced ™: Excellent general purpose detonating cord for reliable blast initiation under virtually all conditions.

Heavy Duty 200™: For severe conditions to meet a wide range of specialized applications. Well suited for dimensional stone and wall control.

Detonating Cord

PROPERTIES & PACKAGING

Product Name	Grain Load		Outside Diameter [in]	Tensile Strength [lb]	Case Count	Weight [lb]	Color
	[gr/ft]	[g/m]					
Lite Line	15	3.2	0.155 +/- 0.015	230	(2) 2000' Spools	30	Pink
Lite Line Slideline	15	3.2	0.133 +/- 0.015	170	(2) 2000' Spools	30	Pink
A-Cord	25	5.3	0.165 +/- 0.015	230	(2) 1000' Spools	22	Green
A-Cord Slideline	25	5.3	0.145 +/- 0.015	170	(2) 1000' Spools	22	Green
50 Reinforced	50	10.6	0.197 +/- 0.015	200	(2) 1000' Spools	30	Yellow
Heavy Duty 200	200	42.5	0.335 +/- 0.020	250	(1) 1000' Spool	57	Red

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Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
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Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
Five years from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Cord, Detonating
Class & Division: 1.1D
ID Number: UN 0065

DOT REFERENCE NUMBER
EX-9303282

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Dynamite Series

Nitroglycerin Based Products

AUSTIN POWDER

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DESCRIPTION

Austin Powder Company's dynamites are specially formulated nitroglycerin based products that deliver superior results in many blasting applications. Their high quality and excellent energy characteristics make them an effective and efficient product.

BENEFITS

- Excellent water resistance.
- High velocity for rapid shattering action.
- All purpose explosive for many types of blasting.
- High density permits explosive power to be concentrated where the most energy is required.



PROPERTIES

Product	Density [g/cc]	Pressure [kb]	RBS‡	Fume Class	Water Resistance	VOD	
						[ft/s]	[m/s]
Apcogel B-1™ (Semi-Gel)	1.26	54	144	1	Good	15,400	4,700
60% Extra Gelatin	1.43	92	195	1	Excellent	17,700	5,400

‡ *Energy is calculated using TIGER, a thermo-dynamic computer code used by Austin Powder Company. Other computer codes may give different values. ANFO = 100 @ 0.82 g/cc.*

PRIMING

Use a high-strength detonator (Rock*Star®, Shock*Star® or equivalent).

Dynamite Series

PACKAGING

Product	Cartridge Size		Weight – Lbs.	Sticks per Case
	[in]	[mm]	Per Case	
60% Extra Gelatin	1 x 8	25 x 200	45	140
	1 1/8 x 8	28 x 200	45	100
	1 ¼ x 8	32 x 200	44	88
	1 ½ x 16	38 x 400	42	30
	2 x 8	50 x 200	43	34
	2 x 16	50 x 400	43	17
	2 ½ x 16	65 x 400	40	10
Apcogel B-1	1 ¼ x 8	32 x 200	38	88
	1 ½ x 16	38 x 400	36	30
	2 x 8	50 x 200	39	34
	2 x 16	50 x 400	39	17
	2 ½ x 16	65 x 400	37	10

Note: All dimensions and weights are nominal.

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Fax: 1-216-464-4418
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Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
One year from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Explosive, Blasting, Type A
Class & Division: 1.1D
ID Number: UN0081

DOT REFERENCE NUMBER
EX-9303286

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E★Star® Cast Booster

AUSTIN POWDER

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High-Density Explosives for Primer Applications.

DESCRIPTION

Austin E★Star Cast Boosters are high-density molecular explosives designed to produce high detonation pressures for optimum initiation of blasting agents. Austin E★Star Cast Boosters are specifically designed to accommodate the E★Star electronic detonator and contains a detonator well of 4" length (101.5mm). The detonator well contains an internal, precisely located brass sleeve. This sleeve is positioned to provide additional protection to the sensitive electronic components of the E★Star detonator, while still insuring the high strength detonator base charge is in intimate contact with the sensitive cast booster explosive.

The E★Star cast booster is designed for the E★Star detonator. The use of any other detonator or detonating cord will result in misfires.

BENEFITS

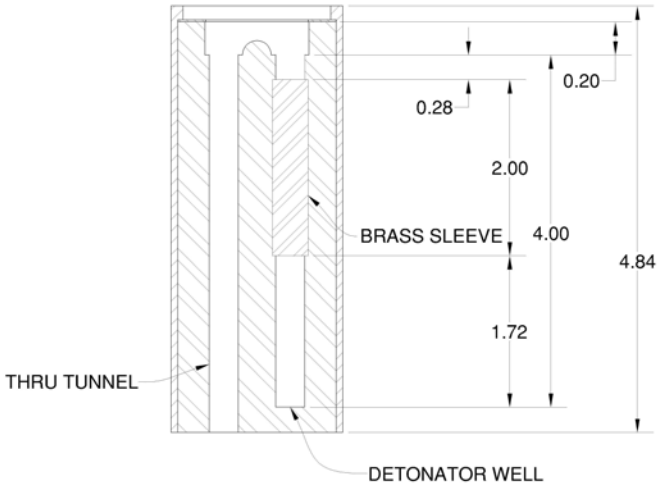
- Austin Cast Boosters detonate in excess of 24,000 ft/sec (7,380 m/sec).
- Over 230 kb of detonation pressure ensures optimum steady state velocity for blasting agents.
- Excellent shelf life, highly resistant to water and oil.
- High visibility "Yellow" cup to differentiate from standard Cast Boosters
- Provides additional protection from transient pressure.



DIMENSIONS & TYPICAL USES

Product Name	Weight		Outside Diameter		Length		Units Per Case	Typical Uses *Designed specifically for use with the E★Star, Electronic Detonator*
	[oz]	[g]	[in]	[mm]	[in]	[mm]	Units	
E★Star 50	8.0	227	1.78	45.2	4.85	123.2	100	Priming blasting agents in holes of 2" diameter or larger. (Packaging – 2 x 50 units)
E★Star 75	12.0	340	2.07	52.6	4.85	123.2	60	Priming blasting agents in holes of 2 1/2" diameter or larger.
E★Star 100	16.0	454	2.35	59.7	4.85	123.2	50	Priming blasting agents in holes of 3" diameter or larger
E★Star 200	32.0	908	3.03	77	4.85	123.2	25	Priming blasting agents in holes of 4" diameter or larger.

E★Star® Cast Boosters



E★Star Cast Booster

The E★Star cast booster contains a brass sleeve in the detonator well to provide additional protection from transient shock pressure to electronic detonator components. The brass sleeve is 2.0" long. The total length (depth) of the detonator well is 4". This design of a cast booster requires the electronic detonator to be fully inserted to the bottom of the detonator well to expose the base charge to the explosive cast booster mix. The bottom 1.72" of the detonator well does not contain the brass sleeve.

The E★Star cast booster is designed for the E★Star detonator. The use of any other detonator or detonating cord will result in misfires

E★Star Packaging Information

Product	Inner Carton*	Outer Case Volume (ft^3)	Outer Case Volume (m^3)	Total Gross case Weight (Lb)	Total Gross case Weight (Kg)	Total NEQ case Weight (Lb)	Total NEQ case Weight (Kg)
E★Star 50	2 each	1.25	0.035	59	25.8	50	22.7
E★Star 75	N/A	0.88	0.025	47	21.4	45	20.4
E★Star 100	N/A	0.56	0.0158	32	14.5	30	13.6
E★Star 200	N/A	0.90	0.0255	52	23.59	50	22.7

*Inner carton can be used as D.O.T. shipping container

For more information and service locations in your area, please contact Austin Powder Company's headquarters:

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25800 Science Park Drive
Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

SHELF LIFE
Five years from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Boosters
Class & Division: 1.1D
ID Number: UN 0042

DOT REFERENCE NUMBER
EX-1993030285

Disclaimer of Warranties and Limitations of Liabilities

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[3/16/16]

E★Star® Detonators

Electro★Star ™ Detonators

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

State of the Art
Programmable Electronic Detonators

DESCRIPTION

E★Star Electronic Detonators have been developed to provide the extreme precision necessary to produce compliant and consistent blasting results in the mining, quarrying and construction industries. The E★Star Detonators are programmed using the dedicated DLG 1600-1-N Logger in 1-millisecond increments from one (1) millisecond up to ten (10) seconds. Accuracy = 0.005% @ 1,000 ms

BENEFITS

- North American Technology, Support and Manufacturing
- Advanced Pre-Fire Diagnostics Coupled to Proprietary Communication Protocol
- Up to 1600 E★Star detonators may be connected in parallel to a 2km 2-wire single bus line (5km bus when branched)
- Patented “Industry Unique” Lead Free Ignition Element
- Very Rugged Factory Installed Bus Line Connector – No Tools Required!
- Extremely Flexible, User Friendly and Easily Customized





E★Star Detonators contain a capacitor, a logic and timing circuit and explosives. When the internal capacitor is charged by the DBM 1600-2KN Digital Blasting Machine, the capacitor provides the necessary energy to initiate the “Ignition Module” and subsequently detonate the Austin Star Detonator 750mg base charge.

Electro★Star Required Logging & Firing Equipment

The use of this system requires specific training in all components. This training is in addition to the normal, required training that all blasters and blasting personnel have received.
Only equipment specifically designed for use with Austin Powder E★Star/ Electro★Star Detonators is permitted. An “operators” manual is to be available at all times when using this equipment.

E★Star Detonators

Electro★Star Detonators

Temperature Specifications for Dan-Mar manufactured Blasting Machine and Logger units:

Operating (use): -20C to 50C, -4F to 122F

Storage, long term: -20C to 35C, -4F to 95F

Electro★Star QM Packaging					
Length		Case Count	Case Wt		Wire Configuration
[ft]	[m]	Outer	[lb]	[kg]	
16	4.9	80	16.50	7.49	Fast 8
24	7.3	70	18.51	8.40	Fast 8
30	9.1	60	19.00	8.63	Fast 8
40	12.2	50	19.65	8.92	Fast 8
60	18.3	40	21.92	9.95	Fast 8
80	24.4	45	31.13	14.13	Spooled
100	30.5	45	37.07	16.83	Spooled
120	36.6	20	21.76	9.88	Spooled
150	45.7	20	25.06	11.38	Spooled
175	53.4	20	28.36	12.88	Spooled
200	61.0	20	31.66	14.38	Spooled
225	68.6	15	29.22	13.27	Spooled
250	76.2	15	30.70	13.94	Spooled

Electro★Star QM/HD Packaging					
Length		Case Count	Case Wt		Wire Configuration
[ft]	[m]	Outer	[lb]	[kg]	
60	18.3	40	26.87	12.20	Fast 8
60	18.3	45	26.87	12.20	Spooled
80	24.4	45	33.35	15.14	Spooled
100	30.5	20	19.69	8.94	Spooled
120	36.6	20	23.29	10.57	Spooled
150	45.7	20	26.89	12.21	Spooled
175	53.4	20	30.49	13.84	Spooled
200	61.0	20	34.09	15.48	Spooled
225	68.6	15	37.69	17.11	Spooled
250	76.2	15	41.29	18.74	Spooled

Warning: The DBM 1600 Series Digital Blasting Machine is designed for use only with E★Star detonators. **Do Not attempt to use this blasting machine with any other detonator.** The misuse of this blasting machine with standard electric detonators may result in instantaneous detonator initiation.

Outer box dimensions 18.12 x 11.25 x 8.87 inches



For more information and service locations in your area, please contact Austin Powder Company's headquarters:

Austin Powder Company
25800 Science Park Drive
Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE

Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE

For optimum accuracy, use within five years from date of manufacture under good storage conditions.

UN CLASSIFICATION

Shipping Name: Detonators, Electric
Class & Division: 1.4B
ID Number: UN 0255

DOT REFERENCE NUMBER

EX-0103067

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6/14/18

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

E★Star® Seismic Detonators

Electronic Programmable Detonators

DESCRIPTION

E★Star Seismic electronic detonators have been designed to provide the precise control necessary to produce the most accurate and consistent seismic record. The E★Star Seismic detonator may be programmed in 1- millisecond increments from 1 millisecond to 10 seconds using the dedicated DLG 1600-100-S Logger. Unique serial number for each E★Star Seismic detonator provides “Cradle to Grave” traceability.

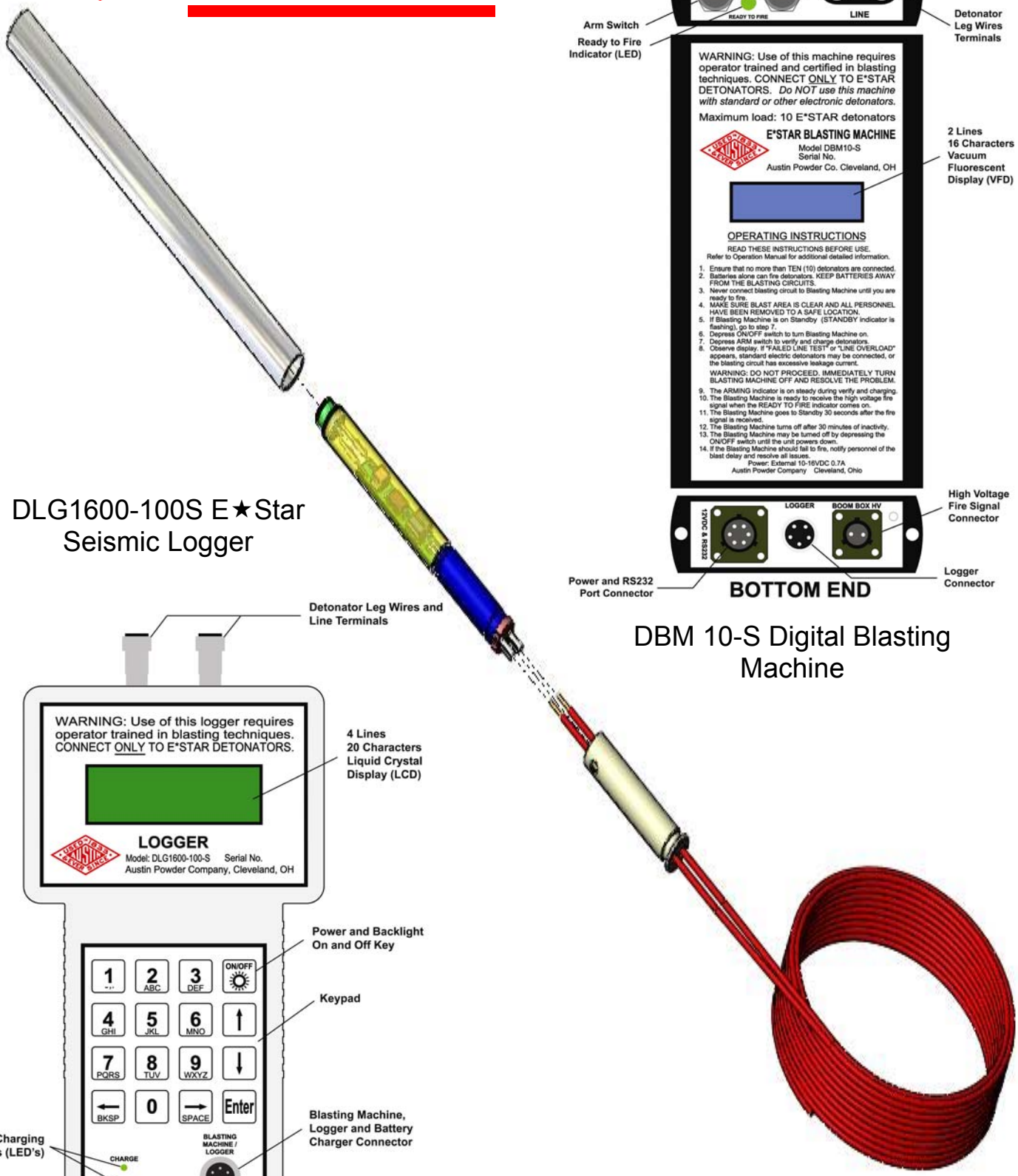
BENEFITS

- 750 mg PETN base charge far exceeds the standard #8 strength detonator.
- Industries most user-friendly and rugged electronic seismic detonator.
- Designed to fire pattern shots up to ten detonators simultaneously.
- Legwire - HDPE insulation for added protection from current leakage. 0.8 mm diameter copper wire (#20 AWG).
- Advanced pre-fire diagnostics coupled to the communication protocol.



E★Star Seismic Detonators contain a capacitor, a logic and timing circuit, and pyrotechnic ignition system manufactured by Austin Star Detonator. This electronic ignition module is integrated with Austin Powders’ detonator technology to provide a complete unit. When the capacitor is charged by the DBM 10-S Digital Blasting Machine, the internal capacitor provides the energy that initiates the “bridge wire” and subsequently detonates the base charge.

E★Star Seismic Detonators

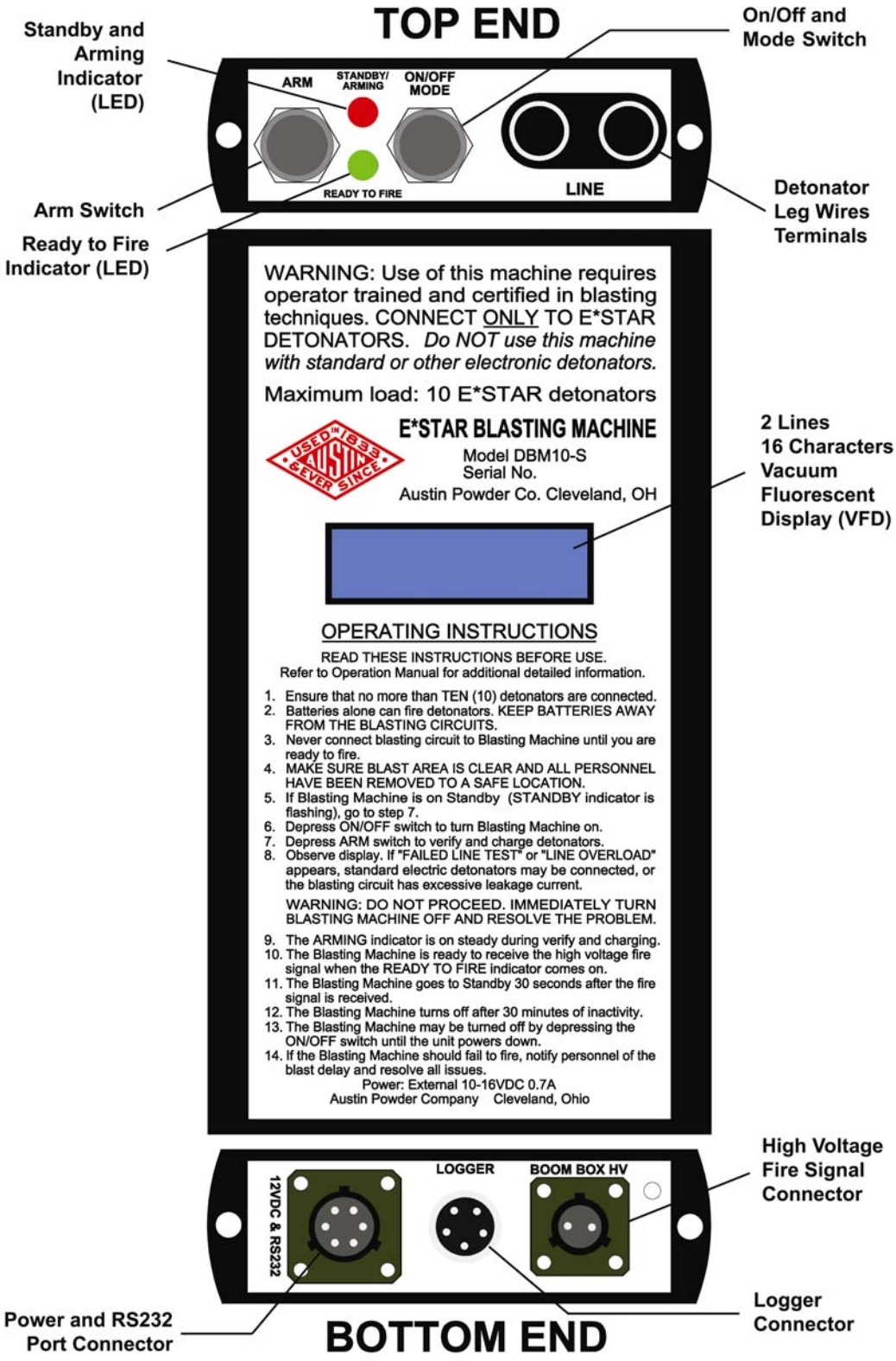


DLG1600-100S E★Star Seismic Logger

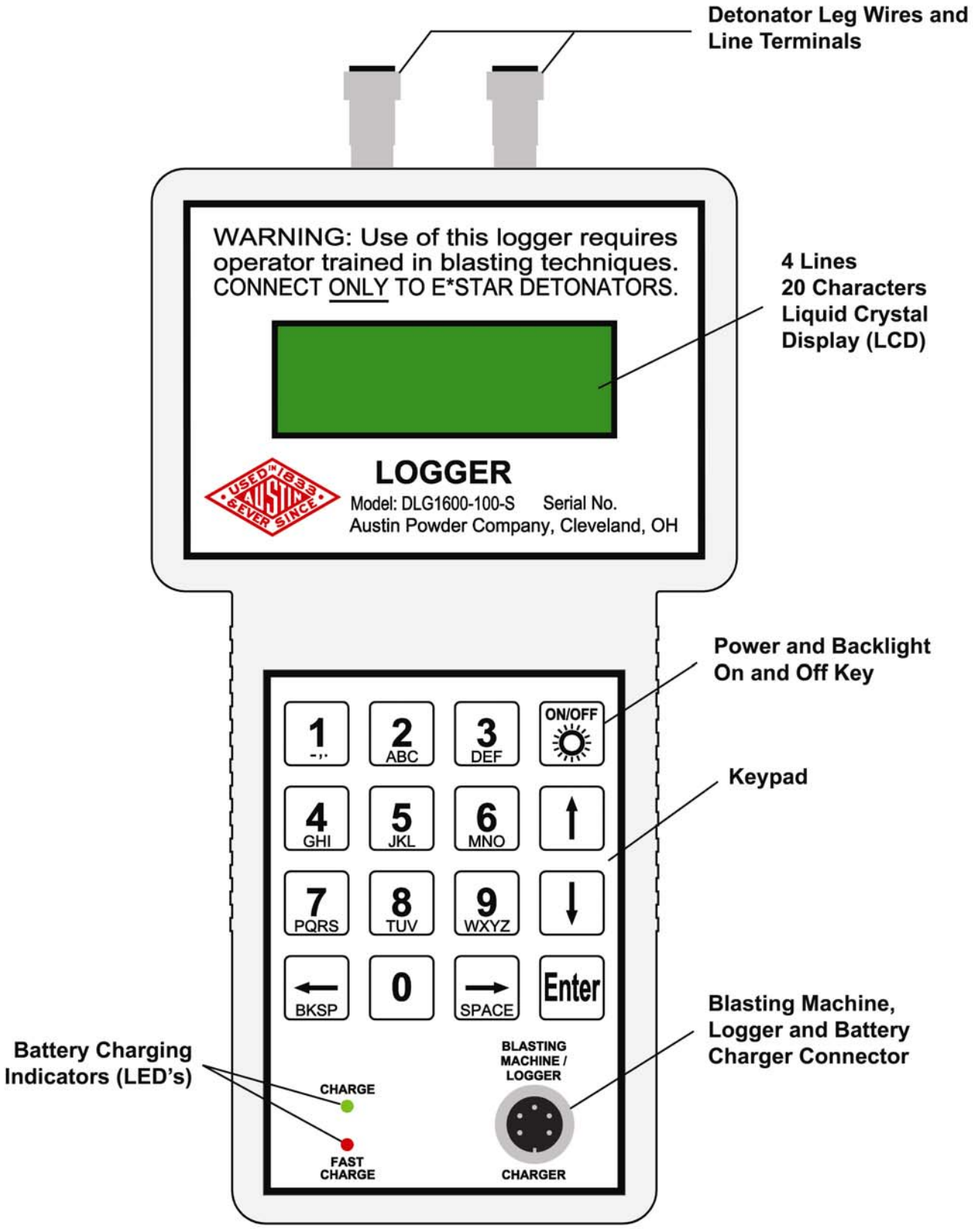
DBM 10-S Digital Blasting Machine

DLG1600-100-S

E★Star DBM 10-S DIGITAL BLASTING MACHINE



E★Star DLG 1600-100-S SEISMIC LOGGER



E★Star Seismic Detonators

Electro★Star Seismic Required Equipment

The use of this system requires specific training in all components. This training is in addition to the normal, required training that all blasters and blasting personnel have received.

Only equipment specifically designed for use with Austin Powder E★Star Seismic Detonators is permitted. The currently approved equipment is a DLG 1600-100-S logger and a DBM10-S Digital Blasting Machine* manufactured by Dan-Mar Co., Inc. An "operators" manual is to be available at all times when using this equipment.

*Warning: The DBM10-S Digital Blasting Machine is designed for use only with E★Star Seismic detonators. **Do Not attempt to use this blasting machine with any other detonator.** The misuse of this blasting machine with standard electric detonators may result in instantaneous detonator initiation.

Electro★Star Packaging					
Length		Case Weight		Case Count	Wire Configuration
[ft]	[m]	[lb]	[kg]		
25	7.6	21.52	9.77	70	Fast 8
35	10.7	24.76	11.24	60	Fast 8
45	13.7	26.03	11.82	50	Fast 8
55	16.8	25.34	11.51	40	Fast 8
65	19.8	34.12	15.49	45	Spooled
85	25.9	42.94	19.50	45	Spooled
100	30.5	49.56	22.50	45	Spooled
120	36.6	27.91	12.67	20	Spooled
140	42.7	31.83	14.45	20	Spooled
160	48.8	35.75	16.23	20	Spooled
180	54.9	39.67	18.01	20	Spooled
200	61.0	43.59	19.79	20	Spooled
220	67.1	47.51	21.57	15	Spooled
240	73.2	51.43	23.35	15	Spooled



For more information and service locations in your area, please contact Austin Powder Company's headquarters:

Austin Powder Company
25800 Science Park Drive
Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE

Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE

For optimum accuracy, use within five years from date of manufacture under good storage conditions.

UN CLASSIFICATION

Shipping Name: Detonators, Electric
Class & Division: 1.4B
ID Number: UN 0255

DOT REFERENCE NUMBER

EX-0103067

Disclaimer of Warranties and Limitations of Liabilities

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[1/2/02 | 6/14/18]

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Eagle®

High-Density Cast Explosive for primer applications.

DESCRIPTION

Austin's Eagle family of cast boosters are high-density molecular explosives designed to produce high detonation pressures for optimum initiation of blasting agents. Eagles can accommodate detonators up to 4" (101.5mm) in length. The Eagle family of cast boosters are designed to be initiated by non-electric, electric and electronic detonators that are classified as a minimum of #8 strength (450mg or greater PETN) base charge. ***Eagle boosters are not designed for use with detonating cord***.

BENEFITS

- Eagle cast boosters detonate in excess of 24,000 ft. /sec (7,380 m/sec).
- Over 225 kb of detonation pressure ensures optimum steady state velocity for blasting agents.
- Excellent shelf life, highly resistant to water and oil.
- Fully enclosed detonator well with internal detonator locking device and through tunnel.
- High visibility, impact resistant "fluorescent orange" polypropylene that is resistant to -40F to +150F for standard Eagle boosters.
- High visibility, impact resistant "yellow" polypropylene that is resistant to -40F to +150F for Eagle E-Star Boosters (internal brass sleeve).





SAFETY

Eagle cast boosters are manufactured with molecular explosives consisting of PETN and TNT, both of which are sensitive to severe impact, heat or friction. As with all explosives, Eagle boosters must be transported, stored and handled with care. Avoid any impact with solid surfaces.

Eagle Cast Boosters

DIMENSIONS & TYPICAL USES

Eagle boosters are not designed for use with detonating cord

Product Name	Weight		Outside Diameter		Length		Units Per Case	Typical Uses
	[oz]	[g]	[in]	[mm]	[in]	[mm]	Units	
Eagle 225	8	225	1.7	43	4.8	123	64	Priming blasting agents in holes of 2 “diameter or larger.
Eagle 340	12	340	2.1	53	4.8	123	49	Priming blasting agents in holes of 2.5 “diameter or larger.
Eagle 450	16	450	2.3	58	4.8	123	36	Priming blasting agents in holes of 3.0” diameter or larger.
Eagle 900	32	900	3.1	78	4.8	123	18	Priming blasting agents in holes of 4” diameter or larger

Product Name	Weight		Outside Diameter		Length		Units Per Case	Typical Uses
	[oz]	[g]	[in]	[mm]	[in]	[mm]	Units	
Eagle E-Star 225	8	225	1.7	43	4.8	123	64	Priming blasting agents in holes of 2 “diameter or larger. *Electronic Detonator Only*
Eagle E-Star 340	12	340	2.1	53	4.8	123	49	Priming blasting agents in holes of 2.5 “diameter or larger. *Electronic Detonator Only*
Eagle E-Star 450	16	450	2.3	58	4.8	123	36	Priming blasting agents in holes of 3.0” diameter or larger. *Electronic Detonator Only*
Eagle E-Star 900	32	900	3.1	78	4.8	123	18	Priming blasting agents in holes of 4” diameter or larger. *Electronic Detonator Only*



For more information and service locations in your area, please contact Austin Powder Company’s headquarters:

Austin Powder Company
25800 Science Park Drive
Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

UN CLASSIFICATION
Shipping Name: Boosters
Class & Division: 1.1D
ID Number: UN 0042

DOT REFERENCE NUMBER
EX-1993030285

IN CASE OF EMERGENCY CALL
CHEMTREC 1-800-424-9300
Maritime 1-703-527-3887
International: dial access code:
+ 00-1-703-527-3887

SHELF LIFE
Five years from date of manufacture under good storage

Disclaimer of Warranties and Limitations of Liabilities

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(11/05/17)

Emulex® 900 Series

Detonator Sensitive Emulsion

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

DESCRIPTION

Emulex 900 series is a detonator sensitive emulsion explosive with putty like texture packaged in plastic film, tampable plastic film or rigid paper tube cartridges.

BENEFITS

- Excellent fragmentation when proper grade is matched to the rock conditions.
- >99% borehole coupling when loading cut or tamped cartridges.
- Excellent water resistance in all grades.
- Superior resistance to dynamic pre-compression.



PROPERTIES

Product	Density [g/cc]	RBS‡	Fume Class	Water Resistance	VOD	
					[ft/s]	[m/s]
Emulex 917	1.17	107	1	Excellent	17,000	5,577
Emulex 927	1.17	142	2	Excellent	16,500	5,413
Emulex 937	1.19	162	2	Excellent	15,500	5,085

‡ *Energy is calculated using TIGER, a thermo-dynamic computer code used by Austin Powder Company. Other computer codes may give different values. ANFO = 100 @ 0.82 g/cc.*

PRIMING

Use a high strength detonator (Rock*Star®, Shock*Star® or equivalent). If product temperature is below 0° F (-17° C), prime with a minimum of a Gold Nugget™ (8 gm) cast booster. This product is not designed for use with any strength of detonating cord.

Emulex 900 Series

Cartridge Size		917	927	937	Cartridge Weight		Case Count
[in]	[mm]				[lb]	[kg]	50 lb / 22.5 kg
1 x 12	25 x 300	V, PMP	V, PMP	---	0.38	0.17	132
1 ¼ x 12	32 x 300	V, PMP	V, PMP	---	0.67	0.30	75
1 ½ x 12	38 x 300	V, PMP	V, PMP	---	0.88	0.40	57
1 ¼ x 16	32 x 400	---	AT	---	0.89	0.40	56
1 ½ x 16	38 x 400	V, PMP	V, AT, PMP	---	1.28	0.58	39
1 ¾ x 16	44 x 400	V	V, AT	---	1.61	0.73	31
2 x 16	50 x 400	V	V, BN	V, BN	2.27	1.03	22
2 ¼ x 16	57 x 400	V	V, BN	V, BN	2.50	1.13	20
2 ½ x 16	63 x 400	V	V, BN	V, BN	3.33	1.51	15
2 ¾ x 16	69 x 400	V	V, BN	V, BN	3.85	1.75	13
3 x 16	75 x 400	V	V, BN	V, BN	4.55	2.06	11
3 ¼ x 16	82 x 400	V	V, BN	V, BN	5.00	2.27	10
3 ½ x 16	88 x 400	V	V, BN	V, BN	6.25	2.84	8

V = Plastic Film; PMP = Poly Mylar Poly Laminate Film (tampable); AT, BN = Rigid Paper Tube

--- Not Available

Note: All dimensions and weights are nominal.

For more information and service locations in your area, please contact:

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25800 Science Park Drive
Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
One year from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Explosive, Blasting, Type E
Class & Division: 1.1D
ID Number: UN0241

DOT REFERENCE NUMBER
EX-9305177

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AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Enviroseis®

Detonator Sensitive Emulsion

DESCRIPTION

Enviroseis is a detonator sensitive, high viscosity explosive packaged in paper shells or rigid plastic cartridges.

BENEFITS

- High detonation velocity produces excellent seismic pulse images.
- Does not contain molecular explosives, nitroglycerin or perchlorates.
- Predominate detonation by-products are water vapor, carbon dioxide and nitrogen.
- Desensitizes and decomposes in shorter time period as compared to conventional seismic explosives.



PROPERTIES

Density [g/cc]	Temperature Sensitivity	Pressure [kb]	Water Resistance	VOD	
				[ft/s]	[m/s]
1.16	-20 F / -29 C	100	Excellent	19,200	5,910

PRIMING

Use a high-strength detonator (Seismic*Star ESP™ or equivalent).

Enviroseis

PACKAGING

Cartridge Style	Cartridge Size		Cartridge Weight		Case Count	Case Weight	
	[in]	[mm]	[lb]	[kg]		[lb]	[kg]
Paper Shell	*	27 x 1/8 kg	.28	.13	160	44	20
Plastic Cartridge	*	51 x ¼ kg	.55	.25	80	44	20
Plastic Cartridge	*	51 x ½ kg	1.1	.50	40	44	20
Plastic Cartridge	*	51 x 1 kg	2.2	1.00	20	44	20
Plastic Cartridge	2 ¼ x 1.1 lb	*	1.1	.50	40	44	20
Plastic Cartridge	2 ¼ x 2 ½ lb	*	2.5	1.13	20	50	22.7
Plastic Cartridge	2 ¼ x 5 lb	*	5.0	2.27	10	50	22.7
Plastic Cartridge*	*	60 x ½ kg	1.1	.50	40	44	20
Plastic Cartridge*	*	60 x 1 kg	2.2	1.00	20	44	20
Plastic Cartridge*	*	60 x 2 kg	4.4	2.00	10	44	20

* 60 mm Plastic Cartridge has a threaded fast lock connector.

For more information and service locations in your area, please contact Austin Powder Company's headquarters:

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Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
One year from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Explosive, Blasting, Type E
Class & Division: 1.1D
ID Number: UN 0241

DOT REFERENCE NUMBER
EX-9305177

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HEET® / Hydromite® Packaged Blends

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Booster Sensitive Emulsion / ANFO Blends

DESCRIPTION

Hydromite & HEET products are blasting agent mixtures of emulsion and ANFO packaged in plastic film or woven poly-plastic cartridges.

BENEFITS

- Wide choice of energies to match blasting requirements.
- Develops excellent gas volume for heave displacement.
- Economical wet hole charge.
- Excellent water resistance in all grades (HEET dependent upon package integrity).
- Superior resistance to dynamic pre-compression.



PROPERTIES

Product	Density [g/cc]	RBS‡	VOD	
			[ft/s]	[m/s]
HEET 130	1.22	138	13,500	4,100
HEET 140	1.32	144	16,000	4,875
Hydromite 820	1.28	132	14,000	4,270
Hydromite 823	1.29	147	13,700	4,180
Hydromite 840	1.27	126	14,900	4,550
Hydromite 843	1.28	141	14,600	4,450
Hydromite 860	1.26	122	15,800	4,820
Hydromite 863	1.27	138	15,500	4,725

‡ *Energy is calculated using TIGER, a thermo-dynamic computer code used by Austin Powder Company. Other computer codes may give different values. ANFO = 100 @ 0.82 g/cc.*

PRIMING

These products are blasting agent explosives and must be in direct contact with an appropriate size cast booster (recommended minimum 1 lb). Additional primers may be required depending upon borehole or geological conditions.

HEET / Hydromite Packaged Blends

PACKAGING

Cartridge Style	Cartridge Size (dia. x wt.)	
	Inch x lb	mm x kg
RF	2 ½ x 9	65 x 4.1
WPP	3 x 10	75 x 4.5
RF	3 x 12	75 x 5.5
WPP	3 ½ x 15	90 x 6.8
RF	3 ½ x 16	90 x 7.3
WPP	4 x 20	100 x 9.1
WPP	4 ½ x 25	114 x 11.4
WPP	5 x 30	127 x 13.6
WPP	5 ½ x 40	140 x 18.2
WPP	6 x 40	150 x 18.2
WPP	6 ½ x 50	165 x 22.7
WPP	7 x 50	178 x 22.7
WPP	7 ½ x 50	190 x 22.7
WPP	8 x 50	203 x 22.7
WPP	8 ½ x 50	216 x 22.7
WPP	9 x 50	229 x 22.7

WPP – Woven Polypropylene
RF – Plastic Film
Note: All dimensions and weights are nominal.

For more information and service locations in your area, please contact:

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Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
Three months from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Explosive, Blasting, Type E
Class & Division: 1.5D
ID Number: UN0332

DOT REFERENCE NUMBER
EX-1993050178

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[1/2/02 | 3/16/16]

Hornet™ Cast Booster

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

High-Density Explosives for Primer Applications.

DESCRIPTION

Austin Powder Hornet Cast Boosters are high-density molecular explosives designed to produce high detonation pressures for optimum initiation of blasting agents. Austin Hornet Cast Boosters are specifically designed to accomadate detonators up to 4" (101.5mm) in length. The Hornet family of cast boosters is designed to be initiated by non-electric, electric and electronic detonators that are classified as a minimum of #8 "strength" (450mg or greater PETN) base charge. The Hornet family of cast boosters is "Detonator Only" sensitive. (Not for use with detonating cord)

BENEFITS

- Austin Hornet Cast Boosters detonate in excess of 24,000 ft/sec (7,380 m/sec).
- Over 230 kb of detonation pressure ensures optimum steady state velocity for blasting agents.
- Excellent shelf life, highly resistant to water and oil.
- Bright "Red" container for added visibility on blast site.
- Optimized initiation energy for all booster sensitive explosives



SAFETY

Austin Powder Cast Boosters are manufactured with molecular explosives consisting of PETN, RDX, HMX and TNT, all of which are sensitive to severe impact, heat or friction. As with all explosives, Cast Boosters must be transported, stored and handled with care. Avoid any impact with solid surfaces or other Cast Boosters, as the potential for a premature detonation or misfire is possible.

Hornet Cast Boosters

DIMENSIONS & TYPICAL USES

Product Name	Weight		Outside Diameter		Length		Units Per Case	Typical Uses
	[oz]	[g]	[in]	[mm]	[in]	[mm]	Units	
Hornet 50	8	227	1.78	45.2	4.85	123.2	100	Priming blasting agents in holes of 2 “diameter or larger. (Packaging – 2 x 50 units)
Hornet 75	12	340	2.07	52.6	4.85	123.2	60	Priming blasting agents in holes of 2 1/2” diameter or larger.
Hornet 100	16	454	2.35	59.7	4.85	123.2	50	Priming blasting agents in holes of 3” diameter or larger
Hornet 200	32	908	3.03	77	4.85	123.2	25	Priming blasting agents in holes of 4” diameter or larger.

Hornet Packaging Information

Product	Inner Carton*	Outer Case Volume (ft^3)	Outer Case Volume (m^3)	Total Gross case Weight (Lb)	Total Gross case Weight (Kg)	Total NEQ case Weight (Lb)	Total NEQ case Weight (Kg)
Hornet 50	2 each	1.14	0.032	53	24.04	50	22.7
Hornet 75	N/A	0.88	0.025	47	21.4	45	20.4
Hornet 100	N/A	0.93	0.0262	53	24	50	22.7
Hornet 200	N/A	0.90	0.0255	52	23.59	50	22.7

* Inner carton can be used as D.O.T. shipping container

For more information and service locations in your area, please contact Austin Powder Company’s headquarters:

Austin Powder Company
25800 Science Park Drive
Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
Five years from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Boosters
Class & Division: 1.1D
ID Number: UN 0042

DOT REFERENCE NUMBER
EX-1993030285

IN CASE OF EMERGENCY CALL
CHEMTREC 1-800-424-9300
Maritime 1-703-527-3887
International: dial access code + 00-1-703-527-3887

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[12/01/16]

Hydromite® *Advance*

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Booster Sensitive Bulk Emulsion for Underground, Underwater and other Construction Blasting Applications.

DESCRIPTION

Hydromite *Advance* bulk emulsion is specifically formulated to provide the maximum advance in underground, underwater and other construction blasting applications.



BENEFITS

- 100% borehole coupling and high energy produce the maximum performance for each blast hole.
- Excellent water resistance and superior resistance to dynamic pre-compression assures performance even in the most critical situations.

PROPERTIES

Product	Density [g/cc]	RBS	VOD*		Fume Class	Minimum Diameter	
			[ft/s]	[m/s]		[in]	[mm]
Hydromite *Advance* 120 & 220	1.20	113	17,000	5,200	1	1 ¾ “	44
Hydromite *Advance* 125 & 225	1.25	117	18,000	5,500	1	2 ½ “	63

Hydromite *Advance* 200 series utilize a food grade mineral oil fuel to provide greater environmental compatibility.
RBS – Relative Bulk Strength (AN/FO @ 0.82 g/cc = 100)
**3” confined*

PRIMING

Hydromite *Advance* is a booster sensitive explosive and must be in direct contact with an appropriately sized Cast Booster or equivalent primer. Use with detonating cord is not recommended.

Hydromite *Advance*



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Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
Six months from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Explosive, Blasting, Type E
Class & Division: 1.5D
ID Number: UN 0332

DOT REFERENCE NUMBER
EX-2008120354

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[1/2/02 | 3/16/17]

Hydromite® 880 Series

Booster Sensitive Emulsion/Anfo Blend

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

DESCRIPTION

Hydromite 880 series is a blasting agent emulsion/anfo blend explosive with a putty like texture, packaged in plastic film cartridges.

BENEFITS

- Choice of energies to match rock conditions.
- Develops excellent gas volume for heave displacement
- Good borehole coupling characteristics when cartridge is cut.
- Excellent water resistance in all grades.
- Superior resistant to dynamic pre-compression.



PROPERTIES

Product	Density [g/cc]	RBS‡	Water Resistance	VOD	
				[ft/s]	[m/s]
Hydromite 880	1.26	122	Excellent	15,800	4,850
Hydromite 883	1.27	138	Excellent	15,500	4,725
Hydromite 886	1.27	154	Excellent	15,300	4,630

‡ *Energy is calculated using TIGER, a thermo-dynamic computer code used by Austin Powder Company. Other computer codes may give different values. ANFO = 100 @ 0.82 g/cc.*

PRIMING

These products must be in direct contact with an appropriate size Red-D Prime™ or cast booster (recommended minimum 1/3 lb). Additional primers may be required depending upon borehole or geological conditions.

Hydromite 880 Series

PACKAGING

Cartridge Style	Cartridge Size		Cartridge Weight		Case Count 50 lb / 22.5 kg
	[in]	[mm]	[lb]	[kg]	
Plastic Film	2 x 16	50 x 400	2.38	1.08	21
	2 ¼ x 16	56 x 400	2.63	1.19	19
	2 ½ x 16	63 x 400	3.33	1.51	15
	2 ¾ x 16	69 x 400	4.17	1.89	12
	3 x 16	75 x 400	5.00	2.27	10
	3 ¼ x 16	81 x 400	5.56	2.52	9
	3 ½ x 16	88 x 400	7.14	3.24	7

Note: All dimensions and weights are nominal.

For more information and service locations in your area, please contact:

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25800 Science Park Drive
Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
Six months from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Explosive, Blasting, Type E
Class & Division: 1.5D
ID Number: UN0332

DOT REFERENCE NUMBER
EX-2005010243 Hydromite 880
EX-2005010258 Hydromite 883
EX-2005010259 Hydromite 886

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Hydromite® Bulk Products

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Pumpable, Booster Sensitive Bulk Emulsion and Emulsion / ANFO Blend

DESCRIPTION

Bulk hydromites are pumpable blends of Hydromite 1100 and Austinite® 15 that provide excellent water resistance and performance to meet many application requirements.

BENEFITS

- Loading bulk pumpable products can reduce the time needed to load shots increasing efficiency.
- In wet boreholes, Hydromite bulk products are pumped to the bottom of the borehole, displacing the water to providing 100% borehole coupling.
- Chemically sensitized products have a natural density gradient resulting in a higher density at the bottom of the borehole where the energy is needed the most.



PROPERTIES

Product	Density [g/cc]	VOD*		Water Resistance	Minimum Hole Diameter	
		[ft/s]	[m/s]		[in]	[mm]
Microsphere Sensitized:						
Hydromite 3200	1.28	16,220	4,945	Excellent	5	125
Hydromite 3400	1.27	17,660	5,400	Excellent	4	100
Hydromite 3600	1.26	17,660	5,400	Excellent	3 ½	87
Chemically Sensitized:						
Hydromite 4100	1.18	19,000	5,800	Excellent	2 ½	62
Hydromite 4400	1.18	18,000	5,500	Excellent	2 ½	62

** 6" confined*

PRIMING

These products are booster sensitive explosives and must be in direct contact with an appropriate size cast booster. Additional primers may be required depending upon geological conditions and face height.

Hydromite Bulk Products



For more information and service locations in your area, please contact Austin Powder Company's headquarters:

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Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
These products are designed to be used as they are manufactured from the bulk truck.

UN CLASSIFICATION
(Hydromite 1100)
Shipping Name: Explosive, Blasting, Type E
Class & Division: 1.5D
ID Number: UN 0332

DOT REFERENCE NUMBER
EX-1993050178

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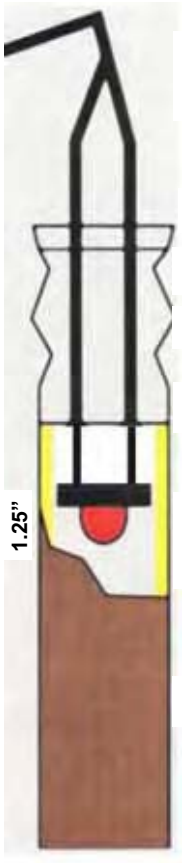
[1/2/02 | 3/16/16]

A-2B

Instantaneous RDX Detonator

Austin Powder Company

CONSTRUCTION FEATURES



A-2B	
Shell Length	32 mm / 1.25 "
Base Charge	5 grains RDX (0.325 gram)
No-Fire Current (approx.) (Based on a constant voltage for 1 minute)	0.2 amperes
All-Fire Current (approx.)	0.8 amperes
Minimum Firing Current (approx.)	0.5 amperes
Leg to Leg Resistance Plus 0.032 for each foot of duplex wire	0.8 ± 0.1 ohm + 0.27/0.32 ohm
High Temperature Performance	1 hr. at 350ºF
Pressure Rating per 24 Hours	1 hr. at 100 psi
Electrostatic Sensitivity Energy Value (Double leg to shell capacitor discharge energy level)	**78 mJ**

- **Antistatic sleeve and spark gap protect against static electricity.**
- **Leg wires are high temperature Teflon insulated 22 gauge four feet long copper leg wires**.

P.I.B. A-2B/0302

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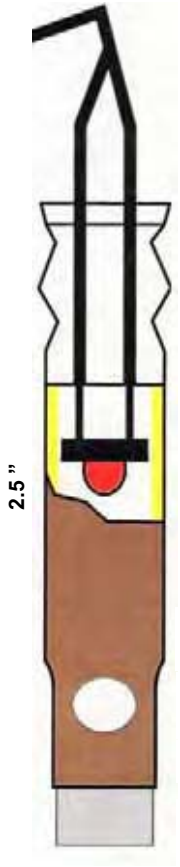
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Cleveland, Ohio 44122 USA
216-464-2400 or 800-321-0752
Fax 216-464-4418

A-84

Fluid Disabled
Instantaneous RDX Detonator

Austin Powder Company

CONSTRUCTION FEATURES



- 22 Gauge Copper Leg Wires 4 ft.
- Teflon Insulation
- Rubber Plug
- Two Crimps
- Aluminum Shell
- Fusehead
- Silicone Sleeve
- Explosive Load
- Copper Connector
- Fluid Disabling Hole
- Explosive Load
- Aluminum Shell for Crimping to 80 grain cord

A-84	
Shell Length	64 mm / 2.5 “
Base Charge	7.4 grains RDX (0.480 gram)
No-Fire Current (approx.) (Based on a constant voltage for 1 minute)	0.2 amperes
All-Fire Current (approx.)	0.8 amperes
Minimum Firing Current (approx.)	0.5 amperes
Leg to Leg Resistance Plus 0.032 for each foot of duplex wire	0.8 ± 0.1 ohm + 0.27/0.32 ohm
High Temperature Performance	1 hr. at 350ºF
Electrostatic Sensitivity Energy Value (Double leg to shell capacitor discharge energy level)	**78 mJ**

- **Antistatic sleeve and spark gap protect against static electricity.**
- **Leg wires are high temperature Teflon insulated 22 gauge four feet long copper leg wires**.

P.I.B. A-84/0302

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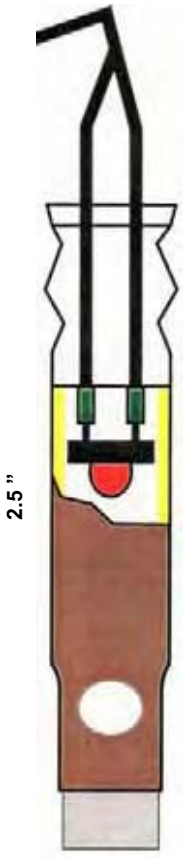
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A-85

Fluid Disabled Resistorized
Instantaneous RDX Detonator

Austin Powder Company

CONSTRUCTION FEATURES



- 22 Gauge Copper
- Teflon Insulation
- Rubber Plug
- Two Crimps
- Aluminum Shell
- Two 27 ohm Resistors
- Fusehead
- Silicone Sleeve
- Explosive Load
- Copper Connec-
- Fluid Disabling
- Explosive Load
- Aluminum Shell for Crimping to 80 grain cord

A-85	
Shell Length	64 mm / 2.5 “
Base Charge	7.4 grains RDX (0.480 gram)
No-Fire Current (approx.) (Based on a constant voltage for 1 minute)	0.2 amperes
All-Fire Current (approx.)	0.8 amperes
Minimum Firing Current (approx.)	0.5 amperes
Resistors in Series with Bridgewire	**(2) 27 ohm**
Leg to Leg Resistance Plus 0.032 for each foot of duplex wire	51 to 60 ohm + 0.27/0.32 ohm
High Temperature Performance	1 hr. at 350ºF
Electrostatic Sensitivity Energy Value (Double leg to shell capacitor discharge energy level)	**781 mJ**

- **Antistatic sleeve and spark gap protect against static electricity.**
- **Leg wires are high temperature Teflon insulated 22 gauge four feet long copper leg wires**.

P.I.B. A-85/0302

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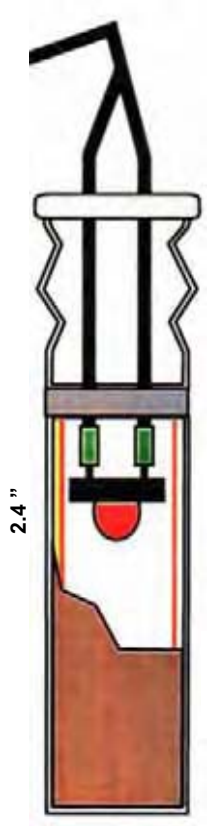
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Cleveland, Ohio 44122 USA
216-464-2400 or 800-321-0752
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A-96

High Pressure Resistorized
Instantaneous RDX Detonator

Austin Powder Company

CONSTRUCTION FEATURES



- 22 Gauge Copper Leg Wires 4 ft.
- Molded Rubber Plug
- Two Copper Shells
- Two 27 ohm Resistors
- Fusehead
- Silicone Sleeve
- Third Shell for Component Protection
- Explosive Load

A-96	
Shell Length	61 mm / 2.4 “
Base Charge	11 grains RDX (0.713 gram)
No-Fire Current (approx.) (Based on a constant voltage for 1 minute)	0.2 amperes
All-Fire Current (approx.)	0.8 amperes
Minimum Firing Current (approx.)	0.5 amperes
Resistors in Series with Bridgewire	**(2) 27 ohm**
Leg to Leg Resistance Plus 0.032 for each foot of duplex wire	51 to 60 ohm + 0.27/0.32 ohm
Pressure Resistance at 325ºF	**15,000 PSI/1 hr.**
High Temperature Performance	1 hr. at 325ºF
Electrostatic Sensitivity Energy Value (Double leg to shell capacitor discharge energy level)	**781 mJ**

- **Antistatic sleeve and spark gap protect against static electricity.**
- **Leg wires are high temperature Teflon insulated 22 gauge four feet long copper leg wires**.

P.I.B. A-96/0402

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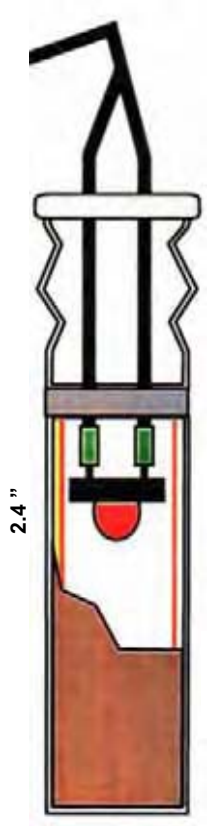
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A-96 L

High Pressure Resistorized
Instantaneous RDX Detonator

Austin Powder Company

CONSTRUCTION FEATURES



- 22 Gauge Copper Leg Wires 4 ft.
- Molded Rubber Plug
- Two Copper Shells
- Two 27 ohm Resistors
- Fusehead
- Silicone Sleeve
- Third Shell for Component Protection
- Explosive Load

A-96 L	
Shell Length	61 mm / 2.4 “
Base Charge	7 grains RDX (0.454 gram)
No-Fire Current (approx.) (Based on a constant voltage for 1 minute)	0.2 amperes
All-Fire Current (approx.)	0.8 amperes
Minimum Firing Current (approx.)	0.5 amperes
Resistors in Series with Bridgewire	**(2) 27 ohm**
Leg to Leg Resistance Plus 0.032 for each foot of duplex wire	51 to 60 ohm + 0.27/0.32 ohm
Pressure Resistance at 325ºF	**15,000 PSI/1 hr.**
High Temperature Performance	1 hr. at 325ºF
Electrostatic Sensitivity Energy Value (Double leg to shell capacitor discharge energy level)	**781 mJ**

- **Antistatic sleeve and spark gap protect against static electricity.**
- **Leg wires are high temperature Nylon insulated 22 gauge four feet long copper leg wires**.

P.I.B. A-96L/0402

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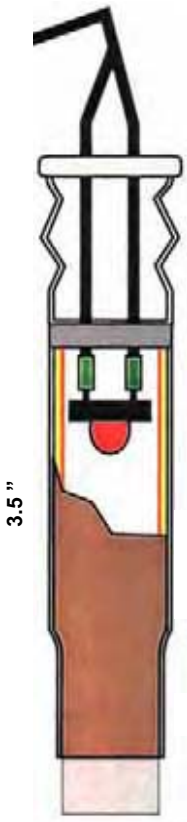
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Cleveland, Ohio 44122 USA
216-464-2400 or 800-321-0752
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A-105

High Pressure Resistorized
Instantaneous RDX Detonator

Austin Powder Company

CONSTRUCTION FEATURES



- 22 Gauge Copper Leg Wires 4 ft.
- Molded Rubber Plug
- Two Copper Shells
- Two 27 ohm Resistors
- Fusehead
- Silicone Sleeve
- Third Shell for Component Protection
- Explosive Load
- Explosive Load
- Aluminum Shell for Crimping to 80 grain cord

A-105	
Shell Length	90 mm / 3.5 “
Base Charge	15 grains RDX (0.972 gram)
No-Fire Current (approx.) (Based on a constant voltage for 1 minute)	0.2 amperes
All-Fire Current (approx.)	0.8 amperes
Minimum Firing Current (approx.)	0.5 amperes
Resistors in Series with Bridgewire	**(2) 27 ohm**
Leg to Leg Resistance Plus 0.032 for each foot of duplex wire	51 to 60 ohm + 0.27/0.32 ohm
Pressure Resistance at 325 ºF	**15,000 psi /1 hr**
Temp. Performance / Ambient Pressure	**1 hr. at 325 ºF**
Electrostatic Sensitivity Energy Value (Double leg to shell capacitor discharge energy level)	**781 mJ**

- **Antistatic sleeve and spark gap protect against static electricity.**
- **Leg wires are high temperature Nylon insulated 22 gauge four feet long copper leg wires**.

P.I.B. A-105/0402

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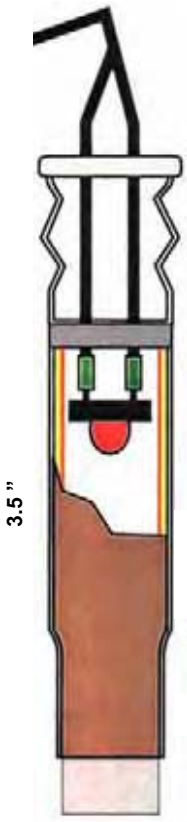
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Cleveland, Ohio 44122 USA
216-464-2400 or 800-321-0752
Fax 216-464-4418

A-105-100

High Pressure Resistorized Instantaneous RDX Detonator

Austin Powder Company

CONSTRUCTION FEATURES



- 22 Gauge Copper Leg Wires 4 ft.
- Molded Rubber Plug
- Two Copper Shells
- Two 27 ohm Resistors
- Fusehead
- Silicone Sleeve
- Third Shell for Component Protection
- Explosive Load
- Explosive Load
- Aluminum Shell for Crimping to 100 grain cord

A-105-100	
Shell Length	90 mm / 3.5 “
Base Charge	15 grains RDX (0.972 gram)
No-Fire Current (approx.) (Based on a constant voltage for 1 minute)	0.2 amperes
All-Fire Current (approx.)	0.8 amperes
Minimum Firing Current (approx.)	0.5 amperes
Resistors in Series with Bridgewire	**(2) 27 ohm**
Leg to Leg Resistance Plus 0.032 for each foot of duplex wire	51 to 60 ohm + 0.27/0.32 ohm
Pressure Resistance at 325 ºF	**15,000 psi /1 hr**
Temp. Performance / Ambient Pressure	**1 hr. at 325 ºF**
Electrostatic Sensitivity Energy Value (Double leg to shell capacitor discharge energy level)	**781 mJ**

- **Antistatic sleeve and spark gap protect against static electricity.**
- **Leg wires are high temperature Nylon insulated 22 gauge four feet long copper leg wires**.

P.I.B. A-105-100/0402

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Austin Powder Company

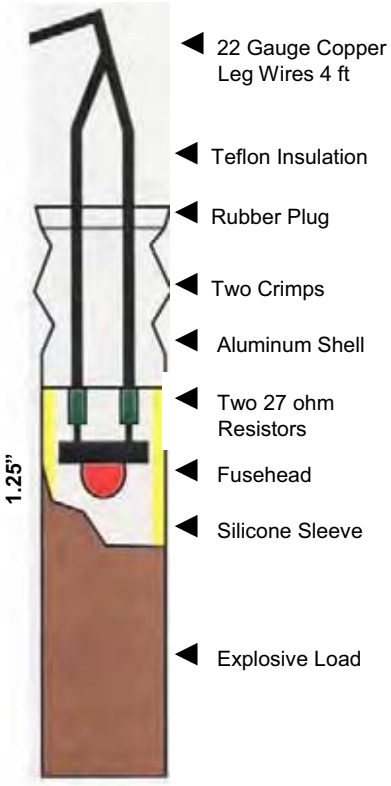
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Cleveland, Ohio 44122 USA
216-464-2400 or 800-321-0752
Fax 216-464-4418

A–140

Resistorized
Instantaneous RDX Detonator

Austin Powder Company

CONSTRUCTION FEATURES



A-140	
Shell Length	32 mm / 1.25 “
Base Charge	5 grains RDX (0.325 gram)
No-Fire Current (approx.) (Based on a constant voltage for 1 minute)	0.2 amperes
All-Fire Current (approx.)	0.8 amperes
Minimum Firing Current (approx.)	0.5 amperes
Resistors in Series with Bridgewire	**(2) 27 ohm**
Leg to Leg Resistance Plus 0.032 for each foot of duplex wire	51 to 60 ohm + 0.27/0.32 ohm
High Temperature Performance	1 hr. at 350ºF
Pressure Rating	1 hr. at 100 psi
Electrostatic Sensitivity Energy Value (Double leg to shell capacitor discharge energy level)	**781 mJ**

- **Antistatic sleeve and spark gap protect against static electricity.**
- **Leg wires are high temperature Teflon insulated 22 gauge four feet long copper leg wires.**

P.I.B. A-140/0302

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Austin Powder Company

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Cleveland, Ohio 44122 USA
216-464-2400 or 800-321-0752
Fax 216-464-4418

A-140 F

Fluid Disabled Resistorized
Instantaneous RDX Detonator

Austin Powder Company

CONSTRUCTION FEATURES



A-140 F	
Shell Length	49 mm / 1.93 “
Base Charge	5 grains RDX (0.325 gram)
No-Fire Current (approx.) (Based on a constant voltage for 1 minute)	0.2 amperes
All-Fire Current (approx.)	0.8 amperes
Minimum Firing Current (approx.)	0.5 amperes
Resistors in Series with Bridgewire	**(2) 27 ohm**
Leg to Leg Resistance Plus 0.032 for each foot of duplex wire	51 to 60 ohm + 0.27/0.32 ohm
High Temperature Performance	1 hr. at 350ºF
Electrostatic Sensitivity Energy Value (Double leg to shell capacitor discharge energy level)	**781 mJ**

- **Antistatic sleeve and spark gap protect against static electricity.**
- **Leg wires are high temperature Teflon insulated 22 gauge four feet long copper leg wires**.

DO NOT REMOVE TAPE UNTIL IMMEDIATELY PRIOR TO USE !

P.I.B A-140F/0402

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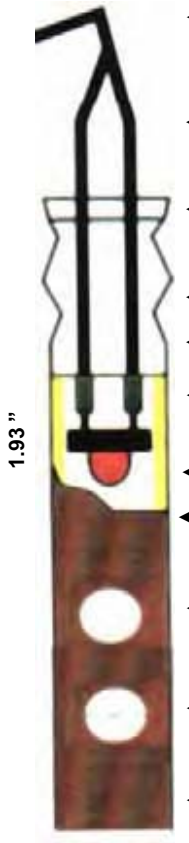
Austin Powder Company

25800 Science Park Drive
Cleveland, Ohio 44122 USA
216-464-2400 or 800-321-0752
Fax 216-464-4418

A-140 F & Block

Fluid Disabled Resistorized
Instantaneous RDX Detonator Assembly

Austin Powder Company



- 22 Gauge Copper Leg Wires 4 ft.
- Teflon Insulation
- Rubber Plug
- Two Crimps
- Aluminum Shell
- Two 27 ohm Resistors
- Fusehead
- Silicone Sleeve
- Fluid Disabling Hole
- Fluid Disabling Hole
- Explosive Load

CONSTRUCTION FEATURES

A-140 F Detonator	
Shell Length	49 mm / 1.93 "
Base Charge	5 grains RDX (0.325 gram)
No-Fire Current (approx.) (Based on a constant voltage for 1 minute)	0.2 amperes
All-Fire Current (approx.)	0.8 amperes
Minimum Firing Current (approx.)	0.5 amperes
Resistors in Series with Bridgewire	**(2) 27 ohm**
Leg to Leg Resistance Plus 0.032 for each foot of duplex wire	51 to 60 ohm + 0.27/0.32 ohm
High Temperature Performance	1 hr. at 350ºF
Electrostatic Sensitivity Energy Value (Double leg to shell capacitor discharge energy level)	**781 mJ**

A-140 F Detonator



Block with Retaining Wire

- **Antistatic sleeve and spark gap protect against static electricity.**
- **Leg wires are high temperature Teflon insulated 22 gauge four feet long copper leg wires**.

P.I.B. A-140FB/0402 (1/2)

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A-140 F & Block

Fluid Disabled Resistorized
Instantaneous RDX Detonator Assembly

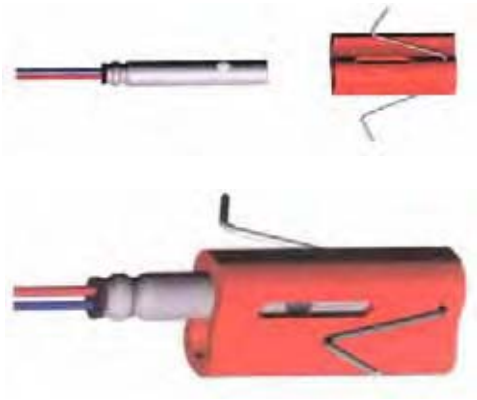
Austin Powder Company

A –140 F & Block

Detonator & Block Assembly

RDX EXPLOSIVE

Following Your Company's Arming Procedure for Safe Explosive Handling and Arming of a Gun



Fluid Desensitized

350 ºF for 1 Hour

- **Place A-140 F Detonator into Safety Tube, *before* removing the detonator shunt.**
- **Connect the ground lead wire and the hot lead wire of the detonator to the gun**
- ***Remove the tape covering the fluid disabling holes of the detonator.***
- **Slide the detonator into the slotted hole of the block, aligning the holes with the slot. Detonators should bottom out on the retaining wire.**
- **Slide cord through the cord hole of the block as you push the block into the gun.**
- **To remove detonator, only pull on the shell of the detonator.**

Never pull on the leg wires !

P.I.B. A-140FB/0402 (2/2)

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A-161

Ultra High Temperature Resistorized
Fluid Desensitized Detonator

Austin Powder Company



CONSTRUCTION FEATURES

A-161	
Detonator Length	53 mm / 2.1 “
Base Charge	6.2 grains **HNS** (0.402 gram)
No-Fire Current (approx.) (Based on a constant voltage for 1 minute)	0.2 amperes
All-Fire Current (approx.)	0.8 amperes
Minimum Firing Current (approx.)	0.5 amperes
51 to 60 Ohm Resistance	API 51 Ohm
High Temperature Performance	**1 hour at 460 ºF**
Electrostatic Sensitivity Energy Value (Double leg to shell capacitor discharge energy level)	**781 mJ**

- **Desensitized in Fluid After 5 Minutes**
- **HNS Explosive Base Load — 6.2 Grains**
- **Rated to 460 ºF for 1 hour**

- **Teflon Insulated 22 Gauge Copper Leg Wires - Four Feet**
- **Molded Rubber Plug**
- **Aluminum Shell with Two Fluid Holes**
- **Aluminum Tape Covering Fluid Holes**

DO NOT REMOVE TAPE UNTIL IMMEDIATELY PRIOR TO USE !

P.I.B. A-161/0302

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Fax 216-464-4418

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Overbreak Control Products

Detonator Sensitive Emulsion

DESCRIPTION

Emuline® and Red-D Lite-E™ are explosive products especially designed for controlled blasting applications requiring de-coupling of the explosive charge such as pre-splitting, trim blasting or smoothwall technique.

BENEFITS

- Emuline is a continuous length of emulsion packaged in tough film cartridges with an attached line of detonating cord. The continuous length can be easily cut to desired length.
- Red-D Lite-E is an emulsion packaged in rigid paper cartridges with couplers that quickly connect together.



PROPERTIES

Product	Density [g/cc]	Pressure [kb]	Water Resistance	VOD	
				[ft/s]	[m/s]
Emuline	1.05	57	Excellent	14,000	4,270
Red-D Lite-E	1.06	58	Excellent	15,000	4,570

PRIMING

Emuline: Use a high strength detonator (Rock*Star®, Shock*Star® or equivalent) or A-Cord™ (25 gr/ft) detonating cord secured to the product's attached detonating cord.

Red-D Lite-E: Use a high strength detonator (Rock*Star, Shock*Star or equivalent). If product temperature is below 20° F (-6° C), prime with a minimum of a Gold Nugget™ (8 gm) cast booster. This product is not designed for use with any strength of detonating cord.

Overbreak Control Products

PACKAGING

Product	Cartridge Size		Cartridge Weight		Case Quantity 50 lb / 22.5 kg	
	[in]	[mm]	[lb/ft]	[kg/m]	[ft]	[m]
Emuline	⅞ x 16	22 x 400	0.31	0.47	160 ± 6	48.8 ± 1.8
Emuline	1 ¼ x 16	32 x 400	0.59	0.88	85 ± 3	25.9 ± 0.9

Product	Cartridge Size		Cartridge Weight		Case Quantity 50 lb / 22.5 kg
	[in]	[mm]	[lb/ft]	[kg/m]	[Ctg]
Red-D Lite-E	⅞ x 24	22 x 600	0.30	0.43	83

Note: All dimensions and weights are nominal.

For more information and service locations in your area, please contact:

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Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
One year from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Explosive, Blasting, Type E
Class & Division: 1.1D
ID Number: UN0241

DOT REFERENCE NUMBER
EX-9305177 (Emuline)
EX-1993050177 (Red-D Lite-E)

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[1/2/02 | 12/01/16]

Permissible Products

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

MSHA Approved Explosives for Underground Coal and "Gassy" Mines.

DESCRIPTION

Austin Powder Company has developed a variety of permissible products to meet virtually every application. Each of these products offer superior performance and are approved for use in underground coal mines or where a permissible explosive is desired.

Coalmex ™ is a detonator sensitive emulsion explosive with a paste like consistency packaged in plastic film cartridges.

Red-D Gel-B ™ is a high velocity and energy dynamite designed for blasting hard coal and difficult rock applications, such as overcasts and undercasts.

Rockbuster II ™ is a non-incendive sheathed explosive approved by MSHA for unconfined blasting of large boulders and rock slabs in underground coal mines.

BENEFITS

Coalmex

- All Purpose emulsion explosive for blasting coal, partings, rock binders and overcasts.
- Resistant to dynamic pre-compression.

Red-D Gel-B

- High density and velocity dynamite.
- Dependable under extreme conditions.
- Delivers high energy for difficult blasting.



Rockbuster II

- Completely enclosed unit does not require drilling or stemming.
- Easy to handle, prime and place.
- Flexible package conforms to the surface.
- Saves money by reducing longwall downtime.

PROPERTIES

Product	Density [g/cc]	RBS‡	Water Resistance	VOD	
				[ft/s]	[m/s]
Coalmex	1.12	130	Excellent	16,800	5,120
Red-D Gel-B	1.35	166	Excellent	16,000	4,876
Rockbuster	NA	NA	Excellent	15,750	4,800

‡ *Energy is calculated using TIGER, a thermo-dynamic computer code used by Austin Powder Company. Other computer codes may give different values. ANFO = 100 @ 0.82 g/cc.*

PRIMING

Coalmex: Use a permissible high-strength detonator (Coalmine Delay or equivalent).
Red-D Gel-B: Use a permissible high-strength detonator (Coalmine Delay or equivalent).
Rockbuster II: Must be primed with a Rockbuster Special instantaneous electric detonator.

Permissible Products

PACKAGING

Product	Cartridge Size		Case Count 50 lb / 20 kg
	[in]	[mm]	
Coalmex	1 ¼ x 16	32 x 400	60
	1 ½ x 16	38 x 400	48
Red-D Gel-B	1 ¼ x 8	32 x 200	88
	1 ¼ x 16	32 x 400	44
Rockbuster II	13 x 8.5 x 3.5	330 x 215 x 89	4

Note: All dimensions and weights are nominal.

For more information and service locations in your area, please contact:

Austin Powder Company
25800 Science Park Drive
Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

DOT REFERENCE NUMBER

Coalmex (EX-1993050177)
Red-D Gel-B (EX-9303286)
Rockbuster II (EX-9303286)

STORAGE

Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE

One year from date of manufacture under good storage conditions.

UN CLASSIFICATION

Coalmex
Shipping Name: Explosive, Blasting, Type E
Class & Division: 1.1D
ID Number: UN0241

Red-D Gel-B
Shipping Name: Explosive, Blasting, Type A
Class & Division: 1.1D
ID Number: UN0081

Rockbuster
Shipping Name: Rockbuster II
Class & Division: 1.1D
ID Number: UN0081

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AUSTIN POWDER

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Red-D Prime™

Detonator Sensitive Emulsion

DESCRIPTION

Red-D Prime is a detonator sensitive emulsion explosive with a putty like texture packaged in plastic film or rigid paper tube cartridges for priming small to medium diameter blast holes.

BENEFITS

- Resistant to dynamic pre-compression
- Good detonation pressure
- Economical primer for:
  - Austinite® Series (ANFO, WR-300)
  - Hydromite® Advance (repumpable bulk emulsion)
  - Hydromite 600 & 880 Series (med. dia. cartridges)



PROPERTIES

Density [g/cc]	Pressure [kb]	Water Resistance	VOD	
			[ft/s]	[m/s]
1.15	91	Excellent	18,500	5,640

PRIMING

Use a high strength detonator (Rock*Star®, Shock*Star® or equivalent). If product temperature is below 0°F (-17°C), prime with a minimum of a Gold Nugget™ (8 gm) cast booster. This product is not designed for use with any strength of detonating cord.

Red-D Prime

PACKAGING

Cartridge Style	Cartridge Size		Cartridge Weight		Case Count 50 lb / 22.5 kg
	[in]	[mm]	[lb]	[kg]	
Plastic Film Or Rigid Paper Tube	1 ¼ x 8	32 x 200	0.42	0.19	118
	1 ½ x 8	38 x 200	0.58	0.26	86
	1 ¾ x 8	44 x 200	0.83	0.38	60
	2 x 8	50 x 200	1.04	0.47	48
	3 x 8	75 x 200	2.2	1.0	23

Note: All dimensions and weights are nominal.

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Cleveland, Ohio, USA 44122

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Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
One year from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Explosive, Blasting, Type E
Class & Division: 1.1D
ID Number: UN0241

DOT REFERENCE NUMBER
EX-1993050177

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[1/2/02 | 12/01/16]

Rock★Star® Detonators

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Electric Millisecond and Long Period Delay Detonators

DESCRIPTION

Rock★Star electric detonators are designed to provide the precise control necessary to produce accurate and consistent blasting results in a variety of blasting applications in the mining, quarrying and construction industries.

BENEFITS

- 900 mg RDX and/or PETN base charge far exceeds the standard #8 strength detonator.
- Industries strongest aluminum shell reduces the possibility of water hammer effect.
- HDPE insulation for added protection from extraneous currents.
- Wide selection of delay intervals provide greater flexibility in blast design.



Electrical Data	
No Fire Current	0.25 amps
All Fire Current	1.00 amps
Series Ignition Current	1.50 amps
No Fire Impulse	2.5 mJ/ohms
All Fire Impulse	5.5 mJ/ohms
Electrostatic Sensitivity	
Double Wire to Shell	10 kV/300 pF/15 mJ
Pin to Pin	10 kV/300 pF/15 mJ

Properties & Packaging

Rock★Star MS Delay Sequence													
Delay #	0	1	2	3	4	5	6	7	8	9	10	11	12
MS Time	0	25	50	75	100	125	150	175	200	225	250	275	300
Delay #	13	14	15	16	17	18	19	20	22	24	26	28	30
MS Time	325	350	375	400	425	450	475	500	600	700	800	900	1000

Length	**[ft]**	16	20	24	30	40	60	80
	[m]	4.9	6.1	7.3	9.1	12.2	18.3	24.4
Total Resistance [Ω]*		1.6	1.78	1.9	1.65	1.85	2.25	2.7

** Includes fusehead resistance of 0.9 +/- 0.1 Ω.*

Rock★Star Detonators

Rock★Star LP Delay Sequence *														
Delay #	0	1	2	3	4	5	6	7	8	9	10	11	12	13
MS Time	0	50	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500

* Available in 20' length only

Rock★Star MS and LP Packaging						
Length		**Case Weight**		**Case Count**	**NEQ per Case [gr]**	**Wire Configuration**
[ft]	**[m]**	**[lb]**	**[kg]**			
16	4.9	6.1	2.8	40	40	Short Fold
20	6.1	6.6	3.0	40	40	Short Fold
24	7.3	5.5	2.5	40	40	Short Fold
30	9.1	6.6	3.0	15	15	Long Fold
40	12.2	6.6	3.0	15	15	Long Fold
60	18.3	6.6	3.0	10	10	Long Fold
80	24.4	7.7	3.5	10	10	Long Fold

** All Rock ★Star 24' (7.3 m) and less, have 22 AWG (0.6 mm) copper wire.*
*** All Rock ★Star 30' (9.1 m) and more, have 20 AWG (0.8 mm) copper wire.*

Case Dimension: 11 ¼" x 7 5/8" x 5"
286mmx x194mm x 127mm

Rock★Star MS and LP Recommended Firing Current				
Circuit Type	**Single Detonator**	**Single Series**	**Parallel Series**	**Parallel**
DC [Amps]	0.5	1.5	1.5	1.0–10.0/Detonator
AC [Amps]	0.5	2.0	2.0	1.0–10.0/Detonator

For more information and service locations in your area, please contact Austin Powder Company's headquarters:

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25800 Science Park Drive
Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE

Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE

For optimum accuracy, use within five years from date of manufacture under good storage conditions.

UN CLASSIFICATION

Shipping Name: Detonators, Electric
Class & Division: 1.4B
ID Number: UN 0255

DOT REFERENCE NUMBER

EX-2014020188

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[1/2/02 | 3/07/17]

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Seis-Gel™

60% High Velocity Seismic Dynamite

DESCRIPTION

Seis-Gel is a high velocity, 60% seismic explosive. The special formulation of this nitroglycerin based product assures reliable detonation after prolonged immersion under high hydrostatic pressures. Seis-Gel is characterized by high velocity and consistent performance under severe winter conditions or in hot, humid areas.

BENEFITS

- Detonates consistently to produce a sharp pulse of seismic energy.
- Available in plastic threaded cartridges or paper shell.
- Ideal for deep hole work and prolonged sleep time.



PROPERTIES

Density [g/cc]	Pressure [kb]	Water Resistance	VOD	
			[ft/s]	[m/s]
1.5	115	Excellent	20,000	6,100

PRIMING

Use a high-strength detonator (Seismic*Star ESP™ or equivalent).

Seis-Gel

PACKAGING

Cartridge Style	Cartridge Size [in]	Cartridge Size [mm]	Case Count	Case Weight
Paper Shell	*	51 x ¼ kg	80	20 kg
Paper Shell	*	51 x ½ kg	40	20 kg
Paper Shell	*	51 x 1 kg	20	20 kg
Paper Shell	*	51 x 2 kg	10	20 kg
Plastic Threaded Cartridge	2 ¼ x 1 lb	*	50	50 lb
Plastic Threaded Cartridge	2 ¼ x 2 ½ lb	*	20	50 lb
Plastic Threaded Cartridge	2 ¼ x 5 lb	*	10	50 lb
Plastic Threaded Cartridge	*	60 x ½ kg	40	20 lb
Plastic Threaded Cartridge	*	60 x 1 kg	20	20 lb
Plastic Threaded Cartridge	*	60 x 2 kg	10	20 lb

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Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
Two years from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Explosive, Blasting, Type A
Class & Division: 1.1D
ID Number: UN 0081

DOT REFERENCE NUMBER
EX-1984110031

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[1/2/02 | 12/01/16]

Seismic Detonating Cord

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

The Industry's Premium Line of Seismic Detonating Cord

DESCRIPTION

Austin Powder manufacturers a wide variety of detonating cord to meet the requirements of the seismic industry. Detonating cord is used to initiate detonator sensitive seismic explosives. Detonating cord is also used to provide a path of initiation for non-electric initiation. Detonating cord has a core of PETN (pentaerythritol tetranitrate) encased in multiple polypropylene yarns, over-extruded with a polyethylene jacket and high strength textile yarns.

BENEFITS

- Water and abrasion resistant.
- High tensile strength.
- Color coded for easy identification.
- Electronically & mechanically inspected.
- Insensitive to extraneous current.
- Assures reliable non-electric initiation.
- Ideally suited for use with 3-D Star SSD.



TYPICAL USES

Lite Line® : Downline under all but the most severe conditions.

A-Cord™ : Small, medium and large hole downlines.

50 Reinforced™ : Excellent general purpose detonating cord for reliable blast initiation under virtually all conditions.

All detonating cords are available with "FS" (Flash Suppressant outer jacket) upon request.

Seismic Detonating Cord

PROPERTIES & PACKAGING

Product Name*	Grain Load		Outside Diameter [in]	Tensile Strength [lb]	Case Count	Weight [lb]	Color
	[gr/ft]	[g/m]					
Lite Line	15	3.2	0.155 +/- 0.015	230	(2) 2000' Spools	30	Pink
A-Cord	25	5.3	0.165 +/- 0.015	230	(2) 1000' Spools	22	Green
50 Reinforced	50	10.6	0.197 +/- 0.015	200	(2) 1000' Spools	30	Yellow

** Available in other sizes upon request.*

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Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
Five years from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Cord, Detonating
Class & Division: 1.1D
ID Number: UN 0065

DOT REFERENCE NUMBER
EX-9303282

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[1/2/02 | 12/01/16]

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Seisprime™

High-Density Molecular Explosive

DESCRIPTION

Seisprime is formulated of a composite of high density, high velocity molecular explosives. Seisprime is engineered to produce over 240 kilo bars of detonation pressure. The rigid threaded plastic Seisprime cartridge is designed to accept an anchor point or top anchor, and is provided with two detonator wells. Seisprime has the longest "sleep time" of any commercial seismic explosive. The formulation suits the requirements of mini-hole, as well as deep hole seismic exploration. Use a high-strength Seismic detonator of 720mg PETN or greater for reliable initiation.

BENEFITS

- 24,500 fps detonation velocity produces excellent seismic pulse images.
- Formulated to achieve a higher detonation temperature and lower post detonation gas production than standard seismic Pentolite, Dynamites or Emulsions.
- Does not contain nitroglycerine or perchlorates.
- Full function reliability in all typical geophysical hole depths/water conditions.



Velocity of Detonation (mps / fps)	Detonation Pressure* (kilo bars)	Total Gas Generation* (liters / kg)	Energy* (MJ/kg)	Density (grams/cc)	Water Resistance
7,538 / 24,500	240	619	6.33	1.73	Excellent

*Detonation pressure, total gas generation and energy values are calculated using Tiger ™, a well established thermodynamic computer code. Other computer codes may give different values.

Seisprime

PACKAGING

Product (kg / lbs.)	Cartridge Size** (mm / in.)	Quantity per case	Case Weigh (kg / lbs.)	Case Size (cm / inches)
Seisprime (0.5 / 1.1)	57 / 2 ¼	40	21.5 / 47.4 lb	32.4 x 44.4 x 29.8 12 ¾ x 17 ½ x 11 ¾
Seisprime (1.0 / 2.2)	57 / 2 ¼	20	21.5 / 47.4 lb	32.4 x 44.4 x 29.8 12 ¾ x 17 ½ x 11 ¾
Seisprime (2.0 / 4.4)	57 / 2 ¼	10	21.5 / 47.4 lb	33 x 78.1 x 11.7 13 x 30 ¾ x 4 ⅝
Seisprime (2.5 / 5.5)	57 / 2 ¼	10	25.9 / 57.0 lb	33 x 78.1 x 11.7 13 x 30 ¾ x 4 ⅝

**Available in other sizes upon request.*

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Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
Indefinite from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Boosters
Class & Division: 1.1D
ID Number: UN 0042

DOT REFERENCE NUMBER
EX-1993030285

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[12/01/16]

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Shock★Star® Dual-Delays

Non-Electric, Millisecond Delay Detonators

DESCRIPTION

Shock★Star Dual-Delays combine In-Hole Delays and Quick-Relay Connectors in one product. This combination offers convenience for storage and inventorying of one product instead of two and often reduces space requirements for transportation. Connecting of blast patterns is generally faster with Dual-Delays as fewer connections are required in total. Additionally, fewer individual products used in the blast pattern reduces clutter at connection points and makes visual inspections easier. For millisecond delay blasting, Dual-Delays are available in a variety of delay configurations.

BENEFITS

- 900 mg base charge of PETN to ensure strong initiation energy under even the most extreme conditions (in-hole detonator only).
- Delay composition encased in a zinc jacket to prevent performance loss due to transient pressure from nearby detonating holes.
- Equipped with a tear-proof color-coded delay tag that lists DSC, delay time, delay period and length of the detonator.
- Manufactured with bright yellow shock tube for high visibility.
- Surface connector has eight tube capacity and is color-coded to surface delay time.



Shock★Star Dual-Delays

LENGTH, DELAY & PACKAGING

Dual-Delay Detonators (DDD)				
Length (ft)	Length (m)	Coil Style	Quantity	NEQ Grams
12	3.7	Fast 8	70	105
16	4.9	Fast 8	70	105
20	6.1	Fast 8	60	90
24	7.3	Fast 8	60	90
30 *	9.2	Fast 8	60	90
40	12.2	Fast 8	50	75
50	15.3	Fast 8	40	60
60 *	18.3	Fast 8	40	60
80	24.4	Fast 8 X	30	45
100	30.5	Fast 8 X	20	30
120	36.6	Fast 8 X	20	30
140	42.7	Fast 8 X	20	30
160	48.8	Spool	8	12
225	68.6	Spool	8	12
*NOTE: For 30 Ft and 60 Ft Detonators produced after 10-3-2011				
30	*9.2*	*Fast 8*	*50*	*75*
60	*18.3*	*Fast 8*	*30*	*45*

Available Delay Configurations		
17/350	25/350	42/350
17/375	25/375	42/375
17/450	25/450	42/450
17/475	25/475	42/475
17/500	25/500	42/500
17/700	25/700	42/700
Long Period (LP) – 200/5000		

For more information and service locations in your area, please contact Austin Powder Company's headquarters:

Austin Powder Company
25800 Science Park Drive
Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE

Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE

For optimum accuracy, use within three years from date of manufacture under good storage conditions.

UN CLASSIFICATION

Shipping Name: Detonator Assemblies, Non-Electric
Class & Division: 1.4B
ID Number: UN 0361

DOT REFERENCE NUMBERS

EX-2012070728
EX-2012081112

All Shock★Star non-electric detonators are manufactured by Austin Star Detonator Co., Brownsville, TX.

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[1/2/02 | 06/02/17]

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Shock★Star® LP Detonators

Non-Electric, Long Period Delay Detonators

DESCRIPTION

Shock★Star long period detonator products include LP In-Hole Delays and LP Dual-Delay Detonators.

Shock★Star LP In-Hole Delays are available in a sequence of 26 whole number periods from instantaneous (0 ms) to 9600 ms. Austin's LP delay sequence is appropriate for applications such as tunneling and shaft or raise mining where long delays are required between holes to allow for movement of broken rock. They are designed to be used as down-hole detonators for the initiation of cast boosters, high explosives or pneumatically loaded AN/FO. In-Hole delays come equipped with a T-Connector for compatibility with detonating cord initiation.

Shock★Star LP Dual-Delays with the 200/5000 ms configuration are designed to allow the efficiency of dual-delay detonators to be used in LP delay applications. They achieve high inventory efficiency by replacing an entire series of delay detonators with a single product. Dual-Delays are equipped with the patented eight tube capacity Quick-Relay Connector with a white colored end cap for better visibility in low light workplaces.

BENEFITS

- 900 mg base charge of PETN to ensure strong initiation energy under even the most extreme conditions (down-hole detonator only).
- Delay composition encased in a zinc jacket to prevent performance loss due to transient pressure from nearby detonating holes.
- Equipped with a tear-proof delay tag that lists DSC, delay time, delay period and length of the detonator.
- Manufactured with bright yellow shock tubing for high visibility.
- Surface connector has eight tube capacity and is color-coded to surface delay time.



LP In-Hole Delays



LP Dual-Delays

Shock★Star
LP Detonators

LENGTH, DELAY & PACKAGING

LP IN-HOLE DELAYS LP - IHD				
Length (ft)	Length (m)	Coil Style	Quantity	NEQ Grams
8	2.4	Lariat	180	180
12	3.7	Lariat	150	150
16	4.9	Lariat	120	120
20	6.1	Lariat	120	120
24	7.3	Lariat	80	80
LP DUAL-DELAYS LP-DDD				
Length (ft)	Length (m)	Coil Style	Quantity	NEQ Grams
12	3.7	Fast 8	70	105
16	4.9	Fast 8	70	105
24	7.3	Fast 8	60	90

Available Periods – MS Delays					
Period#	0	1	2	3	4
Delay, ms	0	200	400	600	800
Period#	5	6	7	8	9
Delay, ms	1000	1200	1400	1600	1800
Period#	10	11	12	13	14
Delay, ms	2000	2500	3000	3500	4000
Period#	15	16	17	18	19
Delay, ms	4500	5000	5500	6000	6500
Period#	20	21	22	23	24
Delay, ms	7000	7500	8000	8500	9000
Period#	25				
Delay, ms	9600				
LP – Dual Delay	200ms / 5000ms				



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Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
For optimum accuracy, use within one year from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Detonator Assemblies, Non-Electric
Class & Division: 1.1B LP IHD / 1.4B LP- DDD
ID Number: UN 0360

DOT REFERENCE NUMBER
EX-2012070727
EX-2012070728
EX-2012081113
EX-2012081112

All Shock★Star non-electric detonators are manufactured by Austin Star Detonator Co., Brownsville, TX.

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[1/2/02 | 06/02/17]

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Shock★Star®
MS Detonators

Non-Electric, Millisecond Delay Detonators

DESCRIPTION

Shock★Star MS Series In-Hole Delays are available in a sequence of 31 whole number periods from instantaneous (0 ms) to 1000 ms. They are designed to be used as down-hole detonators for the initiation of cast boosters, high explosives or pneumatically loaded ANFO. In-Hole Delays come equipped with a T-Connector for compatibility with detonating cord initiation or can be initiated by an electric or non-electric detonator or approved shock tube starter device.

BENEFITS

- 900 mg base charge of PETN to ensure strong initiation energy under even the most extreme conditions.
- Delay composition encased in a zinc jacket to prevent performance loss due to transient pressure from nearby detonating holes.
- Equipped with a tear-proof delay tag that lists DSC, delay time, delay period and length of the detonator.
- Manufactured with bright yellow shock tubing for high visibility.



Shock★Star MS Detonators

LENGTH, DELAY & PACKAGING

IN-HOLE MS DETONATORS				
Length		Coil Style	Quantity	NEQ Grams
(ft)	(m)			
12	3.7	Fast 8	70	70
16	4.9	Fast 8	70	70
20	6.1	Fast 8	60	60
30	9.2	Fast 8	60	60
40	12.2	Fast 8	50	50
50	15.3	Fast 8	40	40
60	18.3	Fast 8	40	40
80	24.4	Fast 8X	30	30
100	30.5	Fast 8X	20	20
120	36.6	Fast 8X	20	20
130	39.7	Spool	10	10
150	45.8	Spool	10	10
160	48.8	Spool	10	10
180	54.9	Spool	10	10
200	61.0	Spool	10	10

Available Periods – MS Delays

Period#	0	1	2	3	4	5
Delay (ms)	0	25	50	75	100	125
Period#	6	7	8	9	10	11
Delay (ms)	150	175	200	225	250	275
Period#	12	13	14	15	16	17
Delay (ms)	300	325	350	375	400	425
Period#	18	19	20	22	24	26
Delay (ms)	450	475	500	600	700	800
Period#	28	30				
Delay (ms)	900	1000				

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Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE

Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE

For optimum accuracy, use within three years from date of manufacture under good storage conditions.

UN CLASSIFICATION

Shipping Name: Detonator Assemblies, Non-Electric
Class & Division: 1.1B, 1.4B (depending on case count)
ID Number: UN 0361

DOT REFERENCE NUMBER

EX-2012070727
EX-2012081113

All Shock★Star non-electric detonators are manufactured by Austin Star Detonator Co., Brownsville, TX.

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[1/2/02 | 06/02/17]

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Shock★Star® Signal Transmission Lines

Shock Tube Products for Non-Electric Lead-in from Blaster's Initiation Point to Blast Site

DESCRIPTION

Shock★Star Signal Transmission Line products include Lead-In-Line, Quick★Start and STD (shock tube with detonator).

Shock★Star Lead-In-Line is used to allow a completely non-electric blasting system from the Blaster's point of initiation all the way through the blast. Lead-In-Line is available as 200, 500, 1000 or 2,500 ft spools to permit a single splice free signal line between the Blaster and the blast pattern. Polyethylene splicers are included with each case of Lead-In-Line for connecting the shock tube's open end to a non-electric detonator used for starting the blast.

Shock★Star Quick★Start is equipped with a Quick Relay Connector detonator for convenient splice-free starting at the first hole in a shock tube blast pattern.

Shock★Star STDs are used for starting detonating cord trunklines. Quick★Start STDs are available in 200, 500, 1,000 and 2,500 ft lengths.

BENEFITS

- Constructed from Austin's three layered shock tube with a white colored jacket for good visibility and differentiation from delay detonator assemblies.
- Initiate consistently and silently at 6,200 ft/s (1,900 m/s)
- Packaged on sturdy spools for durability during shipping and multiple uses.



Lead In Line



STD

Shock★Star Signal Transmission Lines

PACKAGING

→ Q Quick★Start (200 mg)		★ STD – (450 mg)		
Length		Coil Style	Quantity	NEQ Grams
(ft)	(m)			
200	61.0	Spool	8	14
500	152.5	Spool	4	13
1000	305.0	Spool	2	12
2500	762.5	Spool	2	28
Lead – In - Line - LIL				
Length		Coil Style	Quantity	NEQ Grams
(ft)	(m)			
200	61.0	Spool	8	4
500	152.5	Spool	4	11
1000	305.0	Spool	2	11
2500	762.5	Spool	2	27



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Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE

Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE

For optimum accuracy, use within five years from date of manufacture under good storage conditions.

UN CLASSIFICATION

Shipping Name:
Articles, Explosive, n.o.s. (Lead-In-Line)
Detonator Assemblies, Non-Electric (STD)
Class & Division:
1.4S (Lead-in-Line)
1.4B (STD)
ID Number:
UN 0349 (Lead-In-Line)
UN 0361 (STD)

DOT REFERENCE NUMBER

EX-2004040259 (200-1000 ft spool Lead-In-Line)
EX-1994040156 (2,500 ft. spool Lead-In-Line)
EX-2012091493 (QRC, Quick★Start)
EX-2001030064 (STD, QRC)

All Shock★Star non-electric detonators are manufactured by Austin Star Detonator Co., Brownsville, TX.

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AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Shock★Star® Surface Connectors

Non-Electric, Millisecond Delay Detonators for Inter-Deck, Inter-hole or Inter-row Connections

DESCRIPTION

Shock★Star Surface Connectors include Quick-Relay Connectors and Surface Delay Connectors.

Shock★Star Quick-Relay Connectors are especially designed for the initiation of other shock tube detonators as a delay between holes or decks within a hole. Quick-Relay Connectors are equipped with connector blocks able to contain 8 outgoing shock tubes yet have a lowered base charge to reduce noise levels and shrapnel cut-off concerns. These detonators are available in 9 delays from instantaneous (0 ms) to 200 ms. **(Quick-Relay Connectors should never be used to attempt initiation of detonating cord)**

Shock★Star Surface Delay Connectors are powerful, versatile detonators designed for compatibility with both shock tube and detonating cord initiation systems. Connector blocks are able to hold up to 8 outgoing shock tubes or initiate 10 to 200 grain detonating cord. These detonators are available in 8 delays from instantaneous (0 ms) to 200 ms.

BENEFITS

- Connector blocks color-coded to the delay time of the detonator.
- Equipped with a tear-proof delay tag that lists DSC, delay time and length of the detonator as well as being color coded to match the connector block.
- Manufactured with red shock tubing for easy differentiation from down-hole detonators when visually inspecting a connected blast pattern.



Quick-Relay Connector
(Shock tube ONLY)



Surface Delay Connector
(Shock tube and Detonating Cord compatible)

Shock★Star
Surface Connectors

LENGTH, DELAY & PACKAGING

Quick Relay Connectors QRC & SDC				
Length (ft)	Length (m)	Coil Style	Quantity	NEQ Grams
12	3.7	Lariat	100	50
20	6.1	Lariat	100	50
30	9.2	Lariat	80	40
40	12.2	Lariat	60	30
50	15.3	Lariat	40	20
60	18.3	Lariat	40	20

H-PAK Optional Packaging				
Length (ft)	Length (m)	Coil Style	Quantity	NEQ Grams
12	3.7	Lariat	15	7.5
20	6.1	Lariat	15	7.5
30	9.2	Lariat	10	5
40	12.2	Lariat	10	5
50	15.3	Lariat	10	5
60	18.3	Lariat	10	5

Quick Relay Color Codes	
9 ms	Green
17 ms	Yellow
25 ms	Red
33 ms	Orange
42 ms	White
67 ms	Light Blue
100 ms	Purple
200 ms	Black

Quick Relay Connector Available Delays			
9 ms	17 ms	25 ms	33 ms
42 ms	67 ms	100 ms	200 ms

Surface Delay Available Delays			
9 ms	17 ms	25 ms	42 ms
67 ms	100 ms	200 ms	

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Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
For optimum accuracy, use within three years from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Detonator Assemblies, Non-Electric
Class & Division: 1.4B
ID Number: UN 0361

DOT REFERENCE NUMBERS
EX-2014080651

All Shock★Star non-electric detonators are manufactured by Austin Star Detonator Co., Brownsville, TX.

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[1/2/02] [4/03/17]

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Static★Star

Electric Seismic Detonator for the Geophysical Industry

DESCRIPTION

The Static★Star detonator is specifically designed for the harsh conditions encountered in a modern 3-D seismic survey. The two part pressed fit sealing plug, combined with a newly designed adhesion compound, ensures protection from the environment of salt and brackish waters for extended periods of time. With the largest base charge in the industry, Static★Star electric detonators will initiate all detonator sensitive seismic explosives.



BENEFITS

- 900 mg RDX and/or PETN base charge far exceeds the standard #8 strength detonator.
- Designed for extended sleep time in salt / brackish water use.
- Consistent break time when firing with 3-10 amperes DC current.
- No fire current of 0.45 amperes for extra protection from electrostatic discharge.
- Two part sealing plug for protection from water.
- Resistant to temperature extremes from -40°F / -40°C to 150°F / 66°C.
- # 20 AWG, high abrasion resistant, Yellow HDPE insulated wire.
- Protected primary explosive charge.

Static★Star

Properties & Packaging

Length		Ohms Resistance (Ω)	Case Count	Case Weight		NEQ per Case (gr)	Wire Configuration
Ft	Mt			Lbs	Kg		
12	3.7	0.84	20	5.3	2.4	20	Figure 8
24	7.3	1.08	20	5.7	2.6	20	Figure 8
35	10.7	1.31	15	5.7	2.6	15	Figure 8
45	13.7	1.50	10	4.5	2.1	10	Figure 8
55	16.8	1.72	10	5.4	2.5	10	Figure 8
65	19.8	1.92	10	6.3	2.9	10	Figure 8
85	25.9	2.33	10	8.8	4.0	10	Spooled
100	30.5	2.64	10	10.2	4.6	10	Spooled
120	36.6	3.05	10	11.6	5.2	10	Spooled
140	42.7	3.46	3	5.1	11.2	3	Spooled
160	48.8	3.87	3	5.7	12.6	3	Spooled
200	61.0	4.69	3	6.8	14.9	3	Spooled

*Other lengths available upon request

Case Dimension: 11 ¼" x 7 5/8" x 5"
286mmx x194mm x 127mm

Electrical Data*	
No Fire Current	0.45 amps
All Fire Current	1.50 amps
Series Ignition Current	6.00 amps
No Fire Impulse	8 mJ/ohms
All Fire Impulse	16 mJ/ohms
Electrostatic Sensitivity	
Double Wire to Shell	20 kV/500 pF/100 mJ
Pin to Pin	10kV/500 pF/25mJ

*Meets or exceeds the IAGC and CAGC Recommended Product Testing Methods and Specifications for Conventional Bridge-wire type Electric Seismic Detonators for Use in Seismic Operations

STORAGE

Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE

For optimum accuracy, use within five years from date of manufacture under good storage conditions.

DOT REFERENCE NUMBER

EX-2014020188

UN CLASSIFICATION

Shipping Name: Detonators, Electric
Class & Division: 1.4B
ID Number: UN 0255

For more information and service locations in your area, please contact Austin Powder Company's headquarters:

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[02/22/06] / [03/07/17]

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Trenchprime®

High-Density Explosive for priming Pipeline, Trenching, Underwater and other severe blasting applications.

DESCRIPTION

Trenchprime Cast Boosters are high-density molecular explosives designed to produce high detonation pressures for optimum initiation of blasting agents. Trenchprime is specifically designed to accomadate detonators up to 4" (101.5mm) in length. The Trenchprime family of cast boosters is designed to be initiated by non-electric, electric and electronic detonators that are classified as a minimum of #8 strength (450mg or greater PETN) base charge.

BENEFITS

- Trenchprime Cast Boosters detonate in excess of 24,000 ft/sec (7,380 m/sec).
- Over 230 kb of detonation pressure ensures optimum steady state velocity for blasting agents.
- Excellent shelf life, highly resistant to water and oil.
- Optimized initiation energy for all booster sensitive explosives



SAFETY

Trenchprime Cast Boosters are manufactured with molecular explosives consisting of PETN and TNT, both of which are sensitive to severe impact, heat or friction. As with all explosives, Trenchprime must be transported, stored and handled with care. Avoid any impact with solid surfaces.

Trenchprime Cast Boosters

DIMENSIONS & TYPICAL USES

Product Name	Weight		Outside Diameter		Length		Units Per Case	Typical Uses
	[oz]	[g]	[in]	[mm]	[in]	[mm]	Units	
Trenchprime 33	5.3	151	1.43	36.0	4.50	114	64	Priming blasting agents in holes of 1.5 “diameter or larger.
Trenchprime 50	8	227	1.70	43.0	4.5	114	64	Priming blasting agents in holes of 2 “diameter or larger.
Trenchprime 75	12	340	2.05	52.0	4.6	117	49	Priming blasting agents in holes of 3.0” diameter or larger.
Trenchprime 100	16	454	2.33	59.0	4.50	114	36	Priming blasting agents in holes of 4” diameter or larger

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Cleveland, Ohio, USA 44122

Phone: 1-800-321-0752
Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
Five years from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Boosters
Class & Division: 1.1D
ID Number: UN 0042

DOT REFERENCE NUMBER
EX-1993030285

IN CASE OF EMERGENCY CALL
CHEMTREC 1-800-424-9300
Maritime 1-703-527-3887
International: dial access code + 00-1-703-527-3887

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[5/16/17]

Trenchpro®

AUSTIN POWDER

A TRADITION OF SAFETY, STRENGTH AND SERVICE.

Booster Sensitive Bulk Emulsion for Pipelines, Trenches, Underwater and other severe blasting applications.

DESCRIPTION

Trenchpro bulk emulsion is specifically formulated to provide maximum energy and resistance to transient shock pressure in Pipeline, Trenching, Underwater and other severe blasting applications.

BENEFITS

- 100% borehole coupling and high energy produce the maximum performance for each blast hole.
- Bulk delivery improves efficiency in the time required to load blast patterns.
- Completely water resistance, load from bottom to displace water in holes.
- Excellent water resistance and superior resistance to dynamic pre-compression assures performance even in the most difficult geologies and blast patterns.

PROPERTIES

Product	Density [g/cc]	RBS	VOD*		Fume Class	Minimum Diameter	
			[ft/s]	[m/s]		[in]	[mm]
Trenchpro	1.20	117	17,800	5,400	1	1 ¾ “	44

PRIMING

Trenchpro is a booster sensitive explosive and must be in direct contact with an appropriately sized Trenchprime® or equivalent cast booster. Use with detonating cord is not recommended.

Trenchpro



For more information and service locations in your area, please contact Austin Powder Company's headquarters:

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Fax: 1-216-464-4418
Web: www.austinpowder.com
Email: info@austinpowder.com

STORAGE
Store in accordance with all applicable local, state, provincial and federal laws.

SHELF LIFE
Six months from date of manufacture under good storage conditions.

UN CLASSIFICATION
Shipping Name: Explosive, Blasting, Type E
Class & Division: 1.5D
ID Number: UN 0332

DOT REFERENCE NUMBER
EX-2008120354

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[1/2/02 | 5/16/17]