



LOVEREX



PROPELLANTS





SINCE 1920



## Explosia a.s.

Production of smokeless powders, black powders and explosives in Explosia a.s. has a long tradition. The company was established in 1920 under the name "Czechoslovak Joint-stock Factory for Explosive Materials in Prague". Production plant was erected in Semtín near Pardubice (in 1921). In 1934 the name of the company was changed to Explosia. Later, in 1958, the company merged with its affiliated company Synthesia and other companies to East Bohemian Chemical Works Synthesia n.p. After 1990 Synthesia was divided to parts and one of them, the producer of explosives, was named Explosia again. Explosia joint-stock company was founded in 1998 and in 2002 all shares were transferred to governmental structure. Since 2002 is Explosia a.s. fully owned by government of Czech Republic. The Research Institute of Industrial Chemistry (VÚPCH), as a part of Explosia a.s., can offer know-how in R&D of propellants and explosives. Explosia a.s. produces explosives and powders for commercial and military purposes, combustible 125 mm APFSDS-T tank ammunition, 155 mm bimodular charge system, rocket propellants and black powders.

### Types of propellants

Explosia a.s. produces two basic types of powders – single base powders and double base powders with certain percentage of nitroglycerine. Triple base propellants are also produced with main application for 155 mm ammunition. The powders are produced in the form of flakes, extruded tubular or seven perforated grains or spherical grains. Explosia a. s. produces many different propellants for all commonly used calibers.

#### Single base powders (marking S)

Nitrocellulose is the main component (90–98%) of single base powders. Various additives such as stabilizers, deterrents, flame suppressants and burn rate modifiers are used as well.

The shape of the powder grain is cylindrical, single or multi perforated, or flake. Most single base propellants produced in Explosia a.s. are surface coated to achieve the progressiveness of burning. Single base propellants are used mainly in handguns, anti-aircraft guns, recoilless weapons and howitzers.

#### Double base powders (marking D)

In addition to nitrocellulose powders double base powders contain also nitroglycerine (10–38%). These powders contain also small percentage of stabilizers or other additives as single base powders. Double base powders are of higher energetic value than single base powders. Their calorific value varies between 3 800 and 5 200 kJ/kg, ballistic performance is better. The shape of powder grain is cylindrical, single perforated, spherical or flake.

### Quality assurance



Explosia a. s. guarantees, that each lot of powder will provide the loaded cartridges with required velocity and pressure parameters. To achieve this, the powders produced are subjected to strict quality control. Physical (dimensions, bulk density, water content), chemical (composition, ash, stability) and ballistic parameters are determined with cartridges loaded with powder conditioned for 24 hours at recommended temperatures and  $60 \pm 5\%$  humidity.

Quality management system, as to the extent corresponding with ISO 9001 standard, was introduced in the company in 1998. Since 2015, after successful passing through the re-certification audit, Explosia a.s. has become the holder of the certificate according to standard system ISO 9001: 2015 and in 2004 the holder of certificate of conformity of quality system with AQAP 2110 requirements

### Research and development of propellants

Research is performed in the field of production technologies of smokeless powders, combustible masses, their physical structure, methods of parameters determination, stability problems and analytical procedures for determination of powder composition, processing properties of nitrocellulose etc.

Development work involves solution of propelling charges for small calibre ammunition up to 155 mm, modular charges 155 mm, mortars up to calibre 120 mm, rocket motors up to calibre 122 mm, kinetic energy (KE) ammunition for calibres up to 125 mm, including technology and technological equipment.

Research and development in the field of measuring of ballistic parameters involves measuring in weapons and closed vessels. Development in the field of ballistic simulators includes evaluation and simulation software.

### Packaging

All here stated powders can be packed into:

- Cardboard boxes
- Fibreboard drums
- 500 g or 1000 g containers for reloading purposes

The powders are packed into fibreboard or cardboard drums or boxes with conductive PE-bags. The quantity of powder contained in a drum varies mostly between 8 and 50 kg according to the individual type of powder and the risk connected with its inflammation.

The powders can be packed also into other types of containers (hermetic steel container etc.) This requires an agreement with the producer of the powder. The containers used shall meet the requirements of the rules of transport of dangerous goods.

## SINGLE BASE POWDERS (MARKING S)

PROPELLANTS	RIMFIRE CARTRIDGES	SHOTSHELL	PISTOL AND REVOLVER	RIFLE	AUTOMOTIVE	MILITARY
S011-02						
S015-02						
S020-02						
S022-03						
S022-04						
S030-02						
S032-02						
S035-01						
S040-01						
S050-01						
S053-01						
S060-02						
S062-02						
S065-01						
S070-04						
S070-05						
S070-06						
S071-03						
S082-01						
S101-01						
S102-01						
S102-04						
S102-05						
S104-01						
S105-01						
S105-04						
S501						
S502						
S503						
P501						
S500						

## DOUBLE BASE POWDERS (MARKING D)

PROPELLANTS	RIMFIRE CARTRIDGES	SHOTSHELL	PISTOL AND REVOLVER	RIFLE	AUTOMOTIVE	MILITARY
D010-02						
D010-04						
D013-01						
D032-03						
D036-03						
D036-07						
D036-03						
D037-01						
D037-02						
D039-01						
D040-01						
D060-01						
D063-01						
D063-02						
D063-06						
D063-07						
D073-01						
D073-02						
D073-03						
D073-04						
D073-05						
D073-06						
D083-02						
D083-03						
D100-01						
D100-02						
D103-03						





## S011-01



<b>Type of propellant</b>	<b>single base – tubular</b>
<b>Bulk density approx.</b>	<b>640 g/l</b>
Main application	.45 AUTO
Other caliber application	.38 Special, .32 Auto, .380 ACP 9 mm Luger, 9 mm Makarov



## S015-02



<b>Type of propellant</b>	<b>single base – disc propellant</b>
<b>Bulk density approx.</b>	<b>500 g/l</b>
Main application	Shotgun cartridges with 24–28 g
Other caliber application	.38 Special, .32 Auto, .380 ACP 9 mm Makarov



## S020-02



<b>Type of propellant</b>	<b>single base – tubular</b>
<b>Bulk density approx.</b>	<b>660 g/l</b>
Main application	9 mm Luger
Other caliber application	.38 Special, .32 Auto, .380 ACP 9 mm Browning, 9 mm Makarov



## S030-02



<b>Type of propellant</b>	<b>single base – tubular</b>
<b>Bulk density approx.</b>	<b>600 g/l</b>
Main application	Shotgun cartridges with 26–30 g
Other caliber application	–



## S032-02



<b>Type of propellant</b>	<b>single base – tubular</b>
<b>Bulk density approx.</b>	<b>600 g/l</b>
Main application	Shotgun cartridges with 28–32 g
Other caliber application	–



## S035-01



<b>Type of propellant</b>	<b>single base - flake</b>
<b>Bulk density approx.</b>	<b>500 g/l</b>
Main application	Shotgun cartridges with 28-32 g
Other caliber application	Calibers for 16 and 20
	-



## S040-01



<b>Type of propellant</b>	<b>single base - tubular</b>
<b>Bulk density approx.</b>	<b>820 g/l</b>
Main application	.22 Hornet
Other caliber application	Shotgun cartridges 410
	.30 Carabine



## S053-01



<b>Type of propellant</b>	<b>single base - tubular</b>
<b>Bulk density approx.</b>	<b>815 g/l</b>
Main application	7.62 x 39
Other caliber application	-
	-



## S060-01



<b>Type of propellant</b>	<b>single base - tubular</b>
<b>Bulk density approx.</b>	<b>890 g/l</b>
Main application	.308 Winchester
Other caliber application	8 x 57JS
	7.62 x 54R



## S062-02



<b>Type of propellant</b>	<b>single base - tubular</b>
<b>Bulk density approx.</b>	<b>890 g/l</b>
Main application	8 x 57JS
Other caliber application	.308 Winchester
	.30-06 Springfield



## S065-01



<b>Type of propellant</b>	<b>single base - tubular</b>
<b>Bulk density approx.</b>	<b>850 g/l</b>
Main application	7 x 57 R
Other caliber application	7 x 57, 7 x 64 .30-06 Springfield



## S070-04



<b>Type of propellant</b>	<b>single base - tubular</b>
<b>Bulk density approx.</b>	<b>910 g/l</b>
Main application	.30-06 Springfield
Other caliber application	7 x 64 6.5 x 55 SE



## S070-05



<b>Type of propellant</b>	<b>single base - tubular</b>
<b>Bulk density approx.</b>	<b>910 g/l</b>
Main application	.270 Winchester
Other caliber application	7 x 64 6.5 x 55 SE



## S070-06



<b>Type of propellant</b>	<b>single base - tubular</b>
<b>Bulk density approx.</b>	<b>920 g/l</b>
Main application	.338 Lapua Magnum
Other caliber application	9.3 x 72 R 9.3 x 74 R



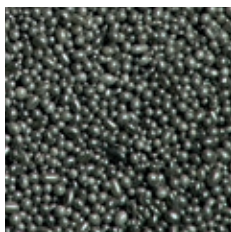
## S071-03



<b>Type of propellant</b>	<b>single base - tubular</b>
<b>Bulk density approx.</b>	<b>910 g/l</b>
Main application	.270 Winchester
Other caliber application	.300 Winchester Magnum -



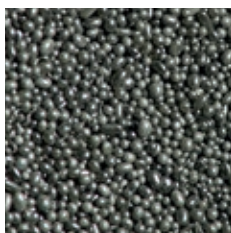
## D010-01



<b>Type of propellant</b>	<b>double base – spherical</b>
<b>Bulk density approx.</b>	<b>880 g/l</b>
Main application	.22 Short
Other caliber application	-



## D010-02



<b>Type of propellant</b>	<b>double base – spherical</b>
<b>Bulk density approx.</b>	<b>880 g/l</b>
Main application	.22 Long Rifle
Other caliber application	-



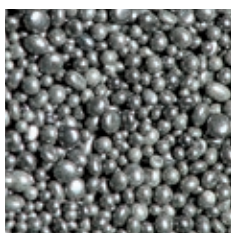
## D010-04



<b>Type of propellant</b>	<b>double base – spherical</b>
<b>Bulk density approx.</b>	<b>880 g/l</b>
Main application	.22 Long Rifle HV
Other caliber application	-



## D032-03



<b>Type of propellant</b>	<b>double base – spherical</b>
<b>Bulk density approx.</b>	<b>650 g/l</b>
Main application	9 mm Luger
Other caliber application	9 mm Browning
	7.62 x 25



## D036-01



<b>Type of propellant</b>	<b>double base – spherical</b>
<b>Bulk density approx.</b>	<b>900 g/l</b>
Main application	.357 Magnum
Other caliber application	10 mm AUTO
	.357 Sig





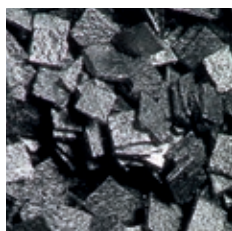
## D036-07



<b>Type of propellant</b>	<b>double base – spherical</b>
<b>Bulk density approx.</b>	<b>900 g/l</b>
Main application	9 mm Luger
Other caliber application	9 mm Browning .40 S&W



## D039-01



<b>Type of propellant</b>	<b>double base – flake</b>
<b>Bulk density approx.</b>	<b>680 g/l</b>
Main application	.40 S&W
Other caliber application	9 mm Luger 9 mm Browning



## D063-01



<b>Type of propellant</b>	<b>double base – spherical</b>
<b>Bulk density approx.</b>	<b>880 g/l</b>
Main application	7.62 x 39
Other caliber application	.300 AAC Blackout -



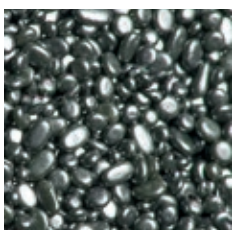
## D063-06



<b>Type of propellant</b>	<b>double base – spherical</b>
<b>Bulk density approx.</b>	<b>880 g/l</b>
Main application	.300 AAC
Other caliber application	.300 AAC Blackout - Subsonic -



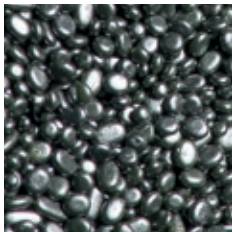
## D073-01



<b>Type of propellant</b>	<b>double base – spherical</b>
<b>Bulk density approx.</b>	<b>900 g/l</b>
Main application	.223 Remington
Other caliber application	.222 Remington .308 Winchester



# D083-01



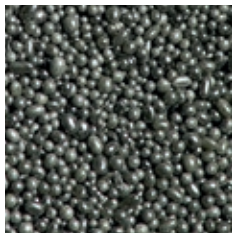
Type of propellant	double base - spherical
Bulk density approx.	900 g/l
Main application	.308 Winchester
Other caliber application	7.62 x 54R .30-06 Springfield



## Special use in production of primers



# S500



Type of propellant	double base - spherical
Bulk density approx.	700 g/l
Main application	primer



SPECIAL USE IN PRODUCTION OF PRIMERS

# Special propellants used in automotive industry



## S501



Type of propellant	single base - tubular
Bulk density approx.	$\pm 950$ g/l
Main application	Safety belt tightener



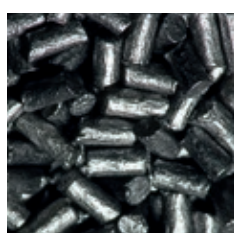
## S502



Type of propellant	single base - tubular
Bulk density approx.	$\pm 950$ g/l
Main application	Safety belt tightener



## S503



Type of propellant	single base - tubular
Bulk density approx.	$\pm 950$ g/l
Main application	Safety belt tightener



## P501



Type of propellant	single base - tubular
Bulk density approx.	$\pm 950$ g/l
Main application	Safety belt tightener





LOVEX



RELOADING CATALOGUE

LOVEX	Accurate	Alliant	Hodgdon	IMR	Norma	PB	Ramshot	RWS	Vectan	Viintavuori	Winchester	
						PCL514						Fast Burning
			Titewad									
D013	Nitro 100				R1						WST	
S011			HP38					P805	Ba10	N310		
S015	Solo 1000	Bullseye	Titegroup	Trail Boss				P801			231	▲
			Clays				Competition				452	
D032	No. 2	Red Dot		Hi-Skor 700X		PCL506				N320	WSL	
S030	Solo 1250	American Select	Clays Intl	PB					AS		473	
S020		Promo		SR7625			Zip			N32C		▲
S035		Green Dot						P804	A1			
D036	No. 5	Unique	Clays Universal					P803			WSF	
		Power Pistol	HS-6			PCL501			Ba9	N330	540	
		Herco	Longshot	SR4756		PCL504	Silhouette		SP8	N340	WAP	▲
									A0	3N37		
				Hi-Skor 800X			True Blue			N350		
		Blue Dot							SP2 Pract.	3N38	571	
D037.1	No. 7	Steel	HS-7							N105		▲
		2400					Enforcer					
D037.2	No. 9				R-123				SP3			
	4100		H110	SR4759				P806				
S040			H4198	IMR4227		PCL512		R910		N110	296	▲
			Li'l Gun						Ba6		680	
D060	5744	410	H4227		200			R901				
S053												
D063	1680	Reloder 7		IMR4198					Tubal 2000	N120		▲
S060	2015					PCL508						
		Reloder 11	Benchmark	IMR3031				R902				
D073.4	2230		H322			PCL507						
D073.5	2460	Reloder 10X	BL(C)-2		201				SP10	N130	748	▲
			H335		202		X-Terminator		Tubal 3000	N133		
	2495							R903				
D073.6	2520			IMR4064					SP9			
S062	4064	Reloder 12	H4895	IMR4895			TAC			N530		▲
										N135		
S065			Varget	IMR4320					SP7			
	2700	Reloder 15	H380		203B	PCL511	Big Game	R907		N140		
			H414							N540	760	▲
S070	4350		H4350		URP			R904	Tubal 5000	N150		
		Reloder 19		IMR4350						N550		
			H450		204		Hunter		SP11		WMR	
			H4831SC	IMR4831					Tubal 7000	N160	785	▲
S071	3100		H4831		MRP			R905		N560		
	MagPro	Reloder 22		IMR7828SSC	MRP(2)				Tubal 8000	N165	WXR	
	H1000	Reloder 25		IMR7828			Magnum					
	8700		Retumbo							N170		Slow Burning
			H870			PCL520			SP13	N570		
			50BMG							24N41		
D100			H5010							20N29		



D013/R\*

(D013-01)



<b>Type of propellant</b>	<b>double base - disc propellant</b>
<b>Bulk density approx.</b>	<b>500 g/l</b>
Main application	Shotgun cartridges with 24-28 g
Other caliber application	.38 Special, .32 Auto, .380 ACP 9 mm Makarov



S011/R\*

(S011-02)



<b>Type of propellant</b>	<b>single base - tubular</b>
<b>Bulk density approx.</b>	<b>640 g/l</b>
Main application	.45 AUTO
Other caliber application	.38 Special, .32 Auto, .380 ACP 9 mm Luger, 9 mm Makarov



S015/R\*

(S015-02)



<b>Type of propellant</b>	<b>single base - disc propellant</b>
<b>Bulk density approx.</b>	<b>500 g/l</b>
Main application	Shotgun cartridges with 24-28 g
Other caliber application	.38 Special, .32 Auto, .380 ACP 9 mm Makarov



D032/R\*

(D032-03)



<b>Type of propellant</b>	<b>double base - spherical</b>
<b>Bulk density approx.</b>	<b>650 g/l</b>
Main application	9 mm Luger
Other caliber application	9 mm Browning, 7.62 x 25 38 Special, .32 Auto, .380 ACP



S020/R\*

(S020-02)



<b>Type of propellant</b>	<b>single base - tubular</b>
<b>Bulk density approx.</b>	<b>660 g/l</b>
Main application	9 mm Luger
Other caliber application	.38 Special, .32 Auto, .380 ACP 9 mm Browning, 9 mm Makarov





D036/R\*

(D036-03)



<b>Type of propellant</b>	<b>double base – spherical</b>
<b>Bulk density approx.</b>	<b>900 g/l</b>
Main application	.357 Mag
Other caliber application	10 mm AUTO, .357 Sig 9 mm Luger



D037.1/R\*

(D037-01)



<b>Type of propellant</b>	<b>double base – spherical</b>
<b>Bulk density approx.</b>	<b>960 g/l</b>
Main application	.357 Magnum
Other caliber application	.40 S&W .44 Remington Magnum



D037.2/R\*

(D037-02)



<b>Type of propellant</b>	<b>double base – spherical</b>
<b>Bulk density approx.</b>	<b>960 g/l</b>
Main application	.44 Remington Magnum
Other caliber application	.357 Magnum .41 Magnum, .458 Casull



S040/R\*

(S040-01)



<b>Type of propellant</b>	<b>single base – tubular</b>
<b>Bulk density approx.</b>	<b>820 g/l</b>
Main application	.22 Hornet
Other caliber application	Shotgun cartridges 410 .30 Carabine



D060/R\*

(D060-01)



<b>Type of propellant</b>	<b>double base – tubular</b>
<b>Bulk density approx.</b>	<b>870 g/l</b>
Main application	45-70 Gow
Other caliber application	.22 Hornet .50-140 Sharps



S053/R\*

(S053-01)



<b>Type of propellant</b>	<b>single base - tubular</b>
<b>Bulk density approx.</b>	<b>815 g/l</b>
Main application	7.62 x 39
Other caliber application	.22 Hornet .222 Remington, .223 Remington



D063/R\*

(D063-02)



<b>Type of propellant</b>	<b>double base - tubular</b>
<b>Bulk density approx.</b>	<b>880 g/l</b>
Main application	7.62 x 39
Other caliber application	.300 AAC Blackout -



D073.4/R\*

(D073-04)

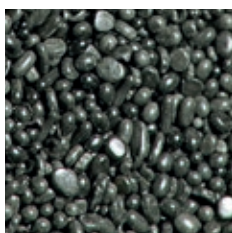


<b>Type of propellant</b>	<b>double base - spherical</b>
<b>Bulk density approx.</b>	<b>900 g/l</b>
Main application	.223 Remington
Other caliber application	.222 Remington .308 Winchester



D073.5/R\*

(D073-05)



<b>Type of propellant</b>	<b>double base - spherical</b>
<b>Bulk density approx.</b>	<b>900 g/l</b>
Main application	.223 Remington
Other caliber application	.308 Winchester, .303 British .30-30 Winchester, .22-250 Remington



S062/R\*

(S062-02)

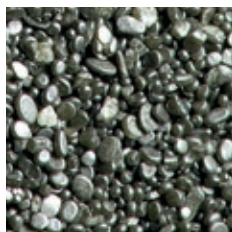


<b>Type of propellant</b>	<b>single base - tubular</b>
<b>Bulk density approx.</b>	<b>890 g/l</b>
Main application	8 x 57JS
Other caliber application	.308 Winchester .30-06 Springfield



D073.6/R\*

(D073-06)



<b>Type of propellant</b>	<b>double base – spherical</b>
<b>Bulk density approx.</b>	<b>900 g/l</b>
Main application	.308 Winchester
Other caliber application	7.62 x 54 R, .30-06 Springfield



S065/R\*

(S065-01)



<b>Type of propellant</b>	<b>single base – tubular</b>
<b>Bulk density approx.</b>	<b>850 g/l</b>
	REACH
Main application	7 x 57 R
Other caliber application	7 x 57, 7 x 64 .30-06 Springfield



S070/R\*

(S070-05)



<b>Type of propellant</b>	<b>single base – tubular</b>
<b>Bulk density approx.</b>	<b>920 g/l</b>
	REACH
Main application	.338 Lapua Magnum
Other caliber application	9.3 x 72 R 9.3 x 74 R



S071/R\*

(S070-03)



<b>Type of propellant</b>	<b>single base – tubular</b>
<b>Bulk density approx.</b>	<b>910 g/l</b>
	REACH
Main application	.270 Winchester
Other caliber application	.300 Winchester Magnum, 8 x 64 7 mm Remington Magnum, .338 Lapua Magnum



D100/R\*

(D100-05)



<b>Type of propellant</b>	<b>double base – spherical</b>
<b>Bulk density approx.</b>	<b>900 g/l</b>
Main application	.50 BMG
Other caliber application	12.7 x 107 –



# Vesuvit

## - Black Powder



### Vesuvit LC-1



Type of propellant	Black powder
Bulk density approx.	850 g/l
Main application	percussion pistols
Other caliber application	-



### Vesuvit LC



Type of propellant	Black powder
Bulk density approx.	900 g/l
Main application	percussion pistols
Other caliber application	percussion muskets



### Vesuvit LC-2



Type of propellant	Black powder
Bulk density approx.	850 g/l
Main application	percussion muskets
Other caliber application	-

## NOTES



## Explosia a.s.

Semtín 107  
530 02 Pardubice  
Czech Republic

phone: +420 466 825 500  
e-mail: [explosia@explosia.cz](mailto:explosia@explosia.cz)

### Propellant Sales Department

phone: +420 466 825 288  
+420 466 825 287  
e-mail: [propellants@explosia.cz](mailto:propellants@explosia.cz)  
[katerina.brychtova@explosia.cz](mailto:katerina.brychtova@explosia.cz)

[www.explosia.cz](http://www.explosia.cz)

