

# Small Caliber Ammunition

## 5.56 x 45 MM M855 ( NATO)



### Purpose

### Characteristics

Case	5.56 mm
Bullet	Rimless
Propellant	Ball powder
Primer	Boxer
Projectile Weight	4.0 gm

### Performance

Muzzle Velocity	910 +- 10 ms( at 25 m from muzzle )
Consistency	165 mm ( at 457 m )
Penetration	Max 3.45 mm mild steel plate at 700 m
Chamber pressure Avg .	342 Mpa

## 5.56 MM BALL Mk N AMMN (SS 109)



#### Purpose

The Cartridge 5.56 mm Ball Mk N is equivalent to 5.56 mm NATO (SS 109) ammunition and are suitable for 5.56 mm standard weapon for firing, which can use 5.56 mm NATO Ammunition or INSAS Ammunition.

#### Characteristics

CARTRIDGE Calibre	5.56 x 45 mm
CARTRIDGE Length	57.4 x 0.6 mm
CASE Type	Rimless, Brass 70:30, Bottle Necked, Boxer
CASE Length	45.0 mm
BULLET Type	Guiding Metal envelope FMJ, Steel Insert and Lead core
BULLET Mass	4.0 gm
PROPELLANT	Ball Powder Double Base (NG & NC)
PRIMER	Lead Styphnate base, Boxer type

#### Performance

Pressure (Radial)	342 Mpa( Avg ) 356 Mpa (Max)
Velocity at 25 m from standard test barrel	910 +- 10 m/s.
Consistency Mean Figure of Merit at 457 m from standard test barrel	16.5 cm or less
Penetration at 700 mtrs	90% of rounds shall penetrate 3.45 mm NATO standard MS Plate to hardness 95-123 VPN
Action time (Hang Fire)	0.003 second max
Extreme Temperature range	-54 to +52 deg C
shelf life	15 Years

#### Packages

20 Cartgs . are packed in a paper Carton and 40 such cartons in one H2A Box, hermetically sealed.

### **5.56 MM BALL MKM NATO AMMN (TYPE M193)**



#### Purpose

The Cartridge 5.56 mm Ball Mk M is equivalent to 5.56 mm NATO (M193) ammunition and are suitable for 5.56 mm standard weapon for firing, which can use 5.56 mm NATO Ammunition or INSAS Ammunition.

#### Characteristics

CARTRIDGE Calibre	5.56 x 45 mm
CARTRIDGE Length	57.4 x0.6 mm
CASE Type	Rimless, Brass 70:30, Bottle Necked, Boxer
CASE Length	45.0 mm
BULLET Type	Guiding Metal envelope FMJ and Lead core
BULLET Mass	3.56 GRAM
PROPELLANT	Ball Powder Double Base (NG & NC)
PRIMER	Lead Styphnate base, Boxer type

#### Performance

BULLET WEIGHT	3.56 gm
BULLET TYPE	Ball
Muzzle velocity at 78feet ( 24 meters )*	964 M/S
Muzzle energy at 78feet ( 24 meters )*	1656 Joules
Maximum average Pressure:	3660 KG/CM2
Maximum average + 3sd Pressure:	4080 KG/CM2
shelf life	12 Years

#### Packages

20 Cartgs . are packed in a paper Carton and 40 such cartons in one H2A Box, hermetically sealed. Box H2A Size- 311 X 156 X 194 mm

### **5.56 TRACER AMMUNITION**



#### Purpose

Cartridge (INSAS) 5.56mm Tracer Ammn is used for location of target/ trajectory, incendiary effect and signalling and is fired from;

1. Semi-automatic INSAS Rifle
2. INSAS LMG.

#### Characteristics

CARTRIDGE Calibre	5.56 x 45 mm
CARTRIDGE Mass	13.00 gm
CARTRIDGE Length	60.00 mm
CASE Type	Rimless, Brass 70:30, Bottle Necked, Boxer
CASE Mass	6.5 gm (Min.)
CASE Length	45.0 mm
BULLET Type	Guiding Metal envelope FMJ, Pyro composition & lead core
BULLET Mass	4.4 gm
BULLET Length	28.8 mm
PROPELLANT Type	Ball Powder
PROPELLANT Mass	1.60 gm
PRIMER Type	Boxer
PRIMER Mass of Comp	0.025 gm

#### Performance

Pressure Average	330 Mpa (Max)
Mean Velocity from 558 mm Barrel at 25 m from muzzle	865 m/s.
Consistency (Mean Figure of Merit at 457 m)	not exceeding 33.0 cm
Extreme temperature performance	-52 to +72 deg C
shelf life	18 years
Matching of trajectory at 457 m	not exceeding 33.0 cm
Tracing Characteristics	Up to 13m-dimzone 125m-
700m bright crimson red trace	

### Packages

20 Cartgs. are packed in one Carton and 40 such cartons in one H2 A Box,hermetically sealed. One carrier size (6 A/L) contains 4 H2A boxes.Box H2A size – 311 x 156 x 194 mmCarrier 6 A/L size – 667 x 327 x 205 mm



### **7.62 x 54 MM R STEEL CORE**

#### Purpose

The 7.62 x 54 MM R Steel Core is a rimmed rifle cartridge. The 7.62 x 54mmR is the one of the oldest cartridge still in regular combat service with several major armed forces in the world. The exterior shape of the case was designed to promote reliable case feeding and extraction in bolt-action rifles and machine guns alike, under challenging conditions.

#### Characteristics

CatridgeCalibre	7.62 mm
Mass fo the Catridge	25.40 gm
Case	Rimmed Brass Bottle necked Boxer
Bullet	Guilding metal envelop steel insert and lead core
Projectile Mass	9.06 gm
Propellant	Ball Powder

#### Performance

Shelf Life	18 Years
Muzzel Velocity	820 to 835 m/s ( from 25 m from muzzel)
Penetration	3.5 mm steel plate at 400 m
Consistency	15 cm or less at 300 m (R-50)

## 7.62 x 51 MM NATO TRACER M-62



#### Purpose

The 7.62 × 51mm NATO Tracer M-62 is a rimless, bottlenecked rifle cartridge. It is a standard for small arms among NATO countries. This tracer Ammunition helps gunner during firing engagements giving full trace of trajectory.

#### Characteristics

Catridge Caliber	7.62 mm
Mass	25.08
Case type	Rimless Bottle necked and Boxer
Bullet	Guilding Metal envelop lead core
Propellant	Ball Powder

Primer	Boxer
Performance	
Shelf Life	10 Years
Muzzle Velocity	817+- 9 m/sec (23.8 m from muzzle)
consistency	Max 38 cm at 550
Tracing Characteristics	upto 13.7 m dimzone 91.4 m-777.2 m bright crimson red trace
serving temperature -40 to +52 deg C	

## 9 MM x 19 MM BALL AMMUNITION



### Purpose

These cartridges are of rimless type and are used with 9 mm pistol or 9 mm Machine Carbine Sten. This cartridge consists of cartridge case, percussion cap, propellant charge and a bullet. This case is of solid drawn brass. At the base of case, a cap chamber with an anvil and two fire holes are formed. A groove is provided on the case for easy extraction of the fired case. The cap is filled with VH2/E1 composition. The cap is secured in the cap chamber and annulus of cap is lacquered to seal the cap and the cap chamber. The bullet is round nosed and consists of Lead-antimony core in an envelope of gilding metal. The cartridge case is tightly coned on to it. The ammunition is optimized to penetrate body armor.. It is widely considered the most popular handgun and submachine gun cartridge due to its low cost and extensive availability.

### Characteristics

Cartridge Caliber	9 mm
Case	Rimless type
Bullet	Guiding Metal envelope Lead core

#### Performance

Self life	7 Years
Muzzle Velocity	397 +- 15 m/sec
Consistency	75.2 mm Mean FoM at 45 m
Chamber pressure Avg.	201 Mpa Max

Packages 35 cartgs. are packed in carton 23 A and such 32 cartons are packed in a H2A box (steel).

## 9 MM BALL AMMUNITION



#### Purpose

These cartridges are of rimless type and are used with 9 mm pistol or 9 mm Machine Carbine Sten. This cartridge consists of cartridge case, percussion cap, propellant charge and a bullet. This case is of solid drawn brass. At the base of case, a cap chamber with an anvil and two fire holes are formed. A groove is provided on the case for easy extraction of the fired case. The cap is filled with VH2/E1 composition. The cap is secured in the cap chamber and annulus of cap is lacquered to seal the cap and the cap chamber. The bullet is round nosed and consists of Lead-antimony core in an envelope of gilding metal. The cartridge case is tightly coned on to it. The ammunition is optimized to penetrate body armor.. It is widely considered the most popular handgun and submachine gun cartridge due to its low cost and extensive availability.

#### Characteristics

Cartridge Caliber	9 mm
Case	Rimless Brass 70:30
Bullet	Guiding Metal envelope Lead core
Propellant	NC 688



Primer	Berdan with VH2/E1 composition
--------	--------------------------------

Performance

Self life	7 Years
Consistency	75.2 mm Mean FoM at 45 m
Chamber pressure Avg.	201 Mpa Max

## CARTRIDGE SA 9 mm BALL



Purpose

These cartridges are of rimless type and are used with 9 mm pistol or 9 mm Machine Carbine Sten. This cartridge consists of cartridge case, percussion cap, propellant charge and a bullet. This case is of solid drawn brass. At the base of case, a cap chamber with an anvil and two fire holes are formed. A groove is provided on the case for easy extraction of the fired case. The cap is filled with VH2/E1 composition. The cap is secured in the cap chamber and annulus of cap is lacquered to seal the cap and the cap chamber. The bullet is round nosed and consists of Lead-antimony core in an envelope of gilding metal. The cartridge case is tightly coned on to it.

Characteristics

Total length of Ammunition	H-29.69 mm
Total mass of Ammunition	L-28.91 mm
Maximum diameter	11.94g +- 0.65 g
Explosive filling in case	9.96 mm
Cap Composition	0.450 g (approx) propellant SPA-2 or propellant NC-688

Performance

Mean velocity at 18 m. from muzzle	397 +- 15m/s
Accuracy	75.2 mm Mean Figure of Merit at 45 m
Pressure	Mean 201 Mpa Individual 215 Mpa No single round should exceed 216 Mpa.

shelf life

7 years

#### Packages

35 cartgs. are packed in carton 23 A and such 32 cartons are packed in a H2A box (steel)

Overall dimensions Box H2A

Length (approx. ) – 311 mm

Width (approx. ) – 156 mm

Height (approx. ) – 194 mm and such four boxes are packed in steel carrier 6A/L.

## **CARTG 14.5 MM APIT**



#### Purpose

This is a machine gun ammunition of Russian origin. The complete round, resembling and ordinary SAA cartridge, is of rimless type. The Ammunition is fired from a KPBT Machine Gun which is mounted on Armoured Personnel Carrier SKOT and 6TP – 60A6 both of USSR origin. These AP carriers are amphibious wheeled vehicles designed for infantry transportation. They are armed with one Gun Machine KPBT (using 14.5mm Ammunition) and one Gun Machine PKT (using 7.62 mm ammunition) both mounted on the turret of the carrier. Complete round consists of Cartridge Case, Primer KB-25 propellant charge and projectile.

The 14.5 mm ammunition fired against:

1. Armoured cars, trucks and inflammable targets.
2. On groups of personnel and motorized infantry unit.

The ammunition is of two types:

1. Cartridge SA 14.5 mm. b 3 Trc (AP/I Tracer)
2. Cartridge Sa 14.5 mm 6 32rc (AP/I)
3. On targets such as men, snipers, emplacements etc. when they are beyond the range of PKT machine gun.

### Characteristics

Mass of complete round	187± 3 gm
Length	154.5 - 155.89 mm
Mass of Projectile	59.3 to 61.3 gms.
Chargemass	30.650 gms
Velocity	995 - 1025 m/s

### Performance

Penetration	Penetrated 40 mm armour plate at 91.00 m at normal angle.
Incendiary functioning	Satisfactory functioning at a distance of 137 m against 9 mm mild steel plate at 60 degree angle.
Accuracy	43.5 cm (Mean figure of merit at 547.0 m)
Tracer	Dark ignition. Reddish trace. Traced up to 1645m.
Pressure	3300 - 3500 Kg/cm <sup>2</sup>
Consistency	20 cm
Shelf life	10 years

### Packages

60 rounds are to be packed into a H2A Steel Box. Packing Box size – 311 x 156 x 196 mm  
Gross Weight – 15.2 Kg (approx.)  
Net Weight – 11.22 Kg

## **CATRIDGE 0.22” BALL ( LONG RANGE )**



### Purpose

Cartridge 0.22” Ball ( Long Range ) is a long-established variety of .22 caliber rimfire ammunition. Ammunition produced in .22 Long Rifle is effective at short ranges has little recoil and economic to purchase thus making it ideal for training, recreational shooting, small-game hunting and among others.

### Characteristics

Cartridge Caliber	0.22"
-------------------	-------

Cartridge Length	25 mm approx
Cartridge Mass	3.370 gm
Case	Rimless Brass 70:30 Bottle Necked
Bullet	Guiding Metal envelope Lead Core
Propellant	3N 36
Primer	RIM FIRED
Projectile Weight	2.6 gm

#### Performance

Self life	10 Years
Consistency	Min 95 % within 3/4" dia( 19 mm ) circle Mean Figure of Merit at 23 m.
Chamber Pressure	22 Mpa Maximum

## CARTRIDGE SA 12 BORE 70MM "ASTRAM"



#### Purpose

This ammunition is fired from a 70 mm Chamber 12 Bore Gun. This cartridge is an improvement on our existing popular brand "Special" Paper cartridges in so far as their construction and performance characteristics are concerned. The body is made up of high density polyethylene plastic tubes, bi-axially oriented, to withstand higher pressures and achieve higher velocity in place of paper crimson. The use of LDPE Power Piston with pouch in place of paper air-cushion as used in "Special" cartridges, not only provides better gas sealing but also results in achievement of higher accuracy in firing giving a very good pattern of shots. The cartridges use non-corrosive caps

along with tubular anvils which eliminates occurrence of misfires. The use of smokeless propellant power give no smoke after firing and the use of hardened lead shots give a good impact on the target. The above improved characteristics make these cartridges suitable not only for use in general hunting, etc. but also for “competition shooting”. Our “Astram” cartridges have already found great favour with many renowned shooters in the competition shooting games.

#### Characteristics

Total length of finished ammunition after filling	58 mm
Total length of empty case	70 mm
Total mass of the ammunition	47 g
Composition of the primer	A1 mixture
Charge mass of the composition	23 to 29 mg
Type of propellant	smokeless
Charge mass of the propellant	1.7 to 1.9 g
Mass of the projectile (lead shots)	32 g
Type of lead shots	Chilled
Hardness of lead shots	15 to 18 VPN
Range of shot size presently manufactured	From Biggest no.1

#### Performance

Velocity	350 $\pm$ 15.2 m/s at 9 m
Accuracy (Accuracy of hit of Pellets within 76.2 cm circle on target placed at 27.4 m distance from the muzzle.) without choke barrel 56%	with choke barrel 90% Cylinder
Pressure (Maximum permissible)	3.5 TSI/ 54.0 Mpa
shelf life	Maximum 5 years

#### Packages

Cartridges are packed in multi-coloured and attractive laminated cartons. 25 cartridges are packed in one carton. A lot of 20 cartons holding 500 cartridges or a lot of 10 cartons holding 250 cartridges are first put in polythene bags and then heat sealed to avoid ingress of moisture. These polythene bags with 50 or 25 cartons are then packed in wooden boxes or pre-printed corrugated fibre board boxes respectively and duly strapped with steel or plastic tapes. The packing is quite secure and lasting.

## **CARTRIDGE SA 12 BORE ANTIRIOT**



### Purpose

The ammunition can be fired from Pump Action / 70mm / 65mm Chamber 12 Bore Gun . It is used for riot control through use of a rubber projectile.

### Characteristics

Total length of finished ammunition after filling	64 mm
Total length of empty case	70 mm
Total mass of the ammunition	24 g
Composition of the primer	A1 Mixture
Charge mass of the composition	23 to 29 mg
Type of propellant	smokeless
Charge mass of the propellant	1.2 to 1.4 g
Mass of the projectile	10.4 ± 0.02 g
Length of Projectile	35 ± 0.02 mm
Velocity at 9m from the muzzle	265 ± 15 m/s
Energy imparts at 50 m	80 Joule
Pressure	2.5 TSI at 1 inch
Accuracy	100% shots should hit on the target 1.5 m x 1.5 m at a distance 27.4 m from the muzzle

### Performance

shelf life	Maximum 5 years
------------	-----------------

### Packages

Cartridges are packed in multi-coloured and attractive laminated cartons. 25 cartridges are packed in one carton. A lot of 20 cartons holding 500 cartridges or a lot of 10 cartons holding 250 cartridges are first put in polythene bags and then heat sealed to avoid ingress of moisture. These polythene bags with 50 or 25 cartons are then packed in wooden boxes or pre-printed corrugated fibre board boxes respectively and duly strapped with steel or plastic tapes. The packing is quite secure and lasting.

## 20 MM AMR TP



### Purpose

Cartridge 20 mm AMR TP is used in Anti Material Rifle (AMR) weapon. It is used for Training and Practice Purposes.

### Characteristics

Extraction of Projectile	4.0 to 9.0 KN
Mass of Projectile	110 +- 3 gm
Weight of complete Round	206 +- 6 gm
Length of the Round	146.6 +- 1.0 mm

### Performance

Muzzle Velocity	720 +- 20 m/s
Pressure	275 Mpa
Range	1500 metres
Weight of round	210 +- 3 kg

## 20 MM AMR TPT



#### Purpose

Cartridge 20 mm AMR TP is used in Anti Material Rifle (AMR) weapon. It is designed to provide tracing capabilities to the Anti Material Rifle (AMR) weaponry. The Tracer gives visibility of trajectory.

#### Characteristics

Extraction of Projectile	4.0 to 9.0 KN
Mass of Projectile	110 +- 3 gm
Weight of complete Round	206 +- 6 gm
Length of the Round	146.6 +- 1.0 mm

#### Performance

Muzzle Velocity	720 +- 20 m/s
Pressure	275 Mpa
Range	1500 metres
Tracer timing	> 2 sec

### Cartridge 20 mm AMR SAPHEI





### Purpose

Cartridge 20 mm AMR SAPHEI is used in Anti Material Rifle (AMR) weapon. It is used against high value targets at extended ranges which include vRadar installations communication equipments parked aircraft and fuel storage facilities. This Ammunition has mechanical impact fuze( Basesfuze ).

### Characteristics

Extraction of Projectile	4.0 to 9.0 KN
Mass of Projectile	104.5 +- 5 gm
Weight of complete Round	200 +- 10 gm
Length of the Round	146.6+- 1.0 mm

### Performance

Muzzle Velocity	720 +- 20 m/s
Pressure	275 Mpa
Range	1500 metres
Arming delay	> 8 m
Penetration	15 mm Armour plate at 100 m
Weight of round	210+- 3 kg