Sloboda

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AMMUNITION 76 mm

(for 76 mm mountain gun M48 B-1)

ROUND 76 mm WITH PROJECTILE HE M70 AND VARIABLE PROPELLANT CHARGE M70

The round 76 mm is separate loaded, with a high-explosive projectile M70 and a variable propellant charge M70.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles.

The projectile is filled with TNT explosive.

A fuze UTI M68P1 is screwed on the projectile.

The variable propellant charge M70 is initiated by a gun primer KT M71.

Calibre (mm)	76
Projectile muzzle velocity (m/s)	398
Mean maximum pressure of powder gases (bar)	≤ 2011
Maximum range (m)	8750
Projectile length, with fuze (mm)	345
Projectile mass, tabular (kg)	6.2
Explosive charge mass (kg)	0.61
Cartridge case length (mm)	385.3
Cartridge case mass (kg)	1.7
Propellant charge mass (kg)	0.38
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 76 mm

(for 76 mm mountain gun M48 B-1)

ROUND 76 mm WITH SMOKE PROJECTILE M60 AND VARIABLE PROPELLANT CHARGE M70

The round 76 mm is separate loaded, with a smoke projectile M60 and a variable propellant charge M70.

It is intended for creating smoke screen on the battlefield.

The projectile is filled with white phosphorus.

A fuze UTI M68P1 is screwed on the projectile.

The variable propellant charge M70 is initiated by a gun primer KT M71.

Calibre (mm)	76
Projectile muzzle velocity (m/s)	398
Mean maximum pressure of powder gases (bar)	≤ 2011
Maximum range (m)	8750
Projectile length, with fuze (mm)	345
Projectile mass, tabular (kg)	6.2
White phosphorus mass (kg)	0.53
Cartridge case length (mm)	385.3
Cartridge case mass (kg)	1.7
Propellant charge mass (kg)	0.38
Operating temperature (°C)	-30 ÷ +50

Sloboda

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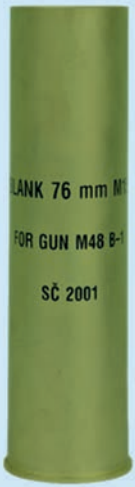
AMMUNITION 76 mm

(for 76 mm mountain gun M48 B-1)



ROUND 76 mm BLANK (SALUTE)

The round 76 mm BLANK (SALUTE) is intended for live fire simulation during manoeuvres, exercises and tactical operations.

It is used for gun salute.

The round consists of a cartridge case 76 mm M48 B-1 filled with propellant charge with igniter and a gun primer KT M71.

Calibre (mm)	76
Round length (mm)	max 320
Round mass (kg)	2
Muzzle safety (m)	min 100
Noise level (dB)	min 120
Powder	NC-01
Propellant charge mass (g)	120
Igniter (black powder N°7) mass (g)	30
Cartridge case mass (kg)	1.56
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 76 mm

(for 76 mm gun M42 - ZIS-3)

ROUND 76 mm WITH PROJECTILE HE M70 AND VARIABLE PROPELLANT CHARGE M70

The round 76 mm is separate loaded, with a high-explosive projectile M70 and a variable propellant charge M70.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles.

The projectile is filled with TNT explosive.

A fuze UTI M68P1 is screwed on the projectile.

The variable propellant charge M70 is initiated by a gun primer KT M71.

Calibre (mm)	76
Projectile muzzle velocity (m/s)	484
Mean maximum pressure of powder gases (bar)	≤ 1844
Maximum range (m)	10000
Projectile length, with fuze (mm)	345
Projectile mass, tabular (kg)	6.2
Explosive charge mass (kg)	0.61
Cartridge case length (mm)	385.3
Cartridge case mass (kg)	1.7
Propellant charge mass (kg)	0.466
Operating temperature (°C)	-30 ÷ +50

Sloboda

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AMMUNITION 76 mm

(for 76 mm gun M42 - ZIS-3)

ROUND 76 mm WITH SMOKE PROJECTILE M60 AND VARIABLE PROPELLANT CHARGE M70

The round 76 mm is separate loaded, with a smoke projectile M60 and a variable propellant charge M70.

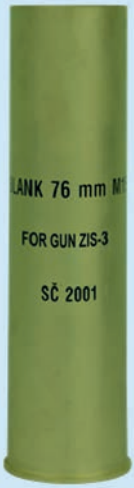
It is intended for creating smoke screen on the battlefield.

The projectile is filled with white phosphorus.

A fuze UTI M68P1 is screwed on the projectile.

The variable propellant charge M70 is initiated by a gun primer KT M71.

Calibre (mm)	76
Projectile muzzle velocity (m/s)	484
Mean maximum pressure of powder gases (bar)	≤ 1844
Maximum range (m)	10000
Projectile length, with fuze (mm)	345
Projectile mass, tabular (kg)	6.2
White phosphorus mass (kg)	0.53
Cartridge case length (mm)	385.3
Cartridge case mass (kg)	1.7
Propellant charge mass (kg)	0.466
Operating temperature (°C)	-30 ÷ +50



AMMUNITION 76 mm

(for 76 mm gun M42 - ZIS-3)

ROUND 76 mm BLANK (SALUTE)

The round 76 mm BLANK (SALUTE) is intended for live fire simulation during manoeuvres, exercises and tactical operations.

It is used for gun salute.

The round consists of a cartridge case 76 mm M72P1 filled with propellant charge with igniter and a gun primer KT M71.

Calibre (mm)	76
Round length (mm)	max 320
Round mass (kg)	1.91
Muzzle safety (m)	min 100
Noise level (dB)	min 120
Powder	NC-01
Propellant charge mass (g)	120
Igniter (black powder N°7) mass (g)	30
Cartridge case mass (kg)	1.56
Operating temperature (°C)	-30 ÷ +50

Sloboda

AMMUNITION 100 mm

(for 100 mm tank gun D-10 on tank T-55, 100 mm self-propelled gun M44, 100 mm coastal gun M87)

ROUND 100 mm FIXED WITH PROJECTILE HE M63P2 AND FULL PROPELLANT CHARGE

The round 100 mm consists of an assembled brass cartridge case and a high-explosive projectile.

The projectile is filled with HAL-20 explosive.

A fuze UTIU M72B1 is screwed on the projectile.

The round is intended for direct and indirect firing on the personnel, light fortifications and unarmored and lightly armored vehicles.

Calibre (mm)	100
Projectile muzzle velocity (m/s)	900
Mean maximum pressure of powder gases (bar)	2942
Round length, with fuze (mm)	1095
Projectile length, with fuze (mm)	490
Cartridge case length (mm)	695
Round mass (kg)	30
Projectile mass (kg)	15.6
Propellant charge mass (kg)	5.5
Explosive charge mass (kg)	1.58
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 100 mm

(for 100 mm antitank guns T-12 and MT-12)

ROUND 100 mm FIXED WITH PROJECTILE HE M82 AND FULL PROPELLANT CHARGE

The round 100 mm is fixed, with a high-explosive projectile 100 mm M82 (filled with TNT).

The round consists of an assembled steel cartridge case and a high-explosive projectile.

A fuze UTIU M85P1 and a tracer N° 12 are screwed into the projectile.

The round is intended for direct and indirect firing of personnel, light fortifications and unarmored and lightly armored vehicles.

Calibre (mm)	100
Projectile muzzle velocity (m/s)	700
Mean maximum pressure of powder gases (bar)	1864
Round length, with fuze (mm)	1283
Projectile length, with fuze (mm)	674
Cartridge case length (mm)	913
Round mass (kg)	28.7
Projectile mass (kg)	16.7
Empty steel cartridge case mass (kg)	8.2
Explosive charge mass (kg)	2.2
Propellant charge mass (kg)	4.6
Tracer burning time (s)	4
Operating temperature (°C)	-30 ÷ +50

Sloboda

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AMMUNITION 100 mm

(for 100 mm antitank guns T-12 and MT-12)

ROUND 100 mm FIXED WITH HEAT-T M15

The round 100 mm is fixed, with 100 mm HEAT-T M15 projectile (filled with FO-4.5S explosive).

The round consists of an assembled steel cartridge case and a high-explosive antitank tracer (HEAT-T) projectile.

A fuze UT-PE M87P1 and a tracer № 12 are screwed into the projectile.

The 100 mm round is intended for antitank combat and demolition of facilities.

Calibre (mm)	100
Projectile muzzle velocity (m/s)	1075
Mean maximum pressure of powder gases (bar)	2157
Round length, with fuze (mm)	1284
Projectile length, with fuze (mm)	581
Cartridge case length (mm)	913
Round mass (kg)	22.5
Projectile mass (kg)	9.5
Empty steel cartridge case mass (kg)	8.2
Explosive charge mass (kg)	1
Propellant charge mass (kg)	4.6
Tracer burning time (s)	4
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 105 mm

(for 105 mm howitzers M56 and M2A1)

ROUND 105 mm WITH PROJECTILE HE M1 AND PROPELLANT CHARGE M2

The round 105 mm is separate loaded, with a high-explosive projectile M1 and a propellant charge M2.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles.

The projectile is filled with TNT explosive.

A fuze UTIU M02P1 is screwed on the projectile.

The full propellant charge M2 is in a brass cartridge case 105 mm M14 and is initiated by a gun primer KT M28A2.

Calibre (mm)	105
Projectile muzzle velocity (m/s)	491 (for M56), 472 (for M2A1)
Mean maximum pressure of powder gases (bar)	≤ 2305
Maximum range (m)	11600 (for M56), 11200 (for M2A1)
Projectile length, with fuze (mm)	496
Projectile mass, tabular (kg)	14.9
Explosive charge mass (kg)	2.11
Cartridge case length (mm)	371.856
Propellant charge mass (kg)	1.3
Operating temperature (°C)	-30 ÷ +50

Sloboda

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AMMUNITION 105 mm

(for 105 mm howitzer M56)

ROUND 105 mm WITH PROJECTILE HEER-BT M15 AND FULL VARIABLE PROPELLANT CHARGE M15A

The round 105 mm is separate loaded, with a high-explosive projectile M15 and a full variable propellant charge M15A.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles.

The projectile is filled with TNT explosive.

A fuze UTIU M02 is screwed on the projectile.

The full variable propellant charge M15A is in a brass cartridge case 105 mm M14 and is initiated by a gun primer KT M02.

Calibre (mm)	105
Projectile muzzle velocity (m/s)	645
Mean maximum pressure of powder gases (bar)	≤ 2500
Maximum range (m)	14500
Projectile length, with fuze (mm)	566.6
Projectile mass, tabular (kg)	13
Explosive charge mass (kg)	2.2
Cartridge case length (mm)	371.856
Propellant charge mass (kg)	2.3
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 105 mm

(for 105 mm howitzer M56)

ROUND 105 mm WITH PROJECTILE HEER-BB M15 AND FULL PROPELLANT CHARGE M15A

The round 105 mm is separate loaded, with a high-explosive projectile M15 and a full propellant charge M15A without increment charge.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles.

The projectile is filled with TNT explosive.

A fuze UTIU M02 is screwed on the projectile.

The full propellant charge M15A, without increment charge, is in a brass cartridge case 105 mm M14 and is initiated by a gun primer KT M02.

Calibre (mm)	105
Projectile muzzle velocity (m/s)	610
Mean maximum pressure of powder gases (bar)	≤ 2650
Maximum range (m)	16500
Projectile length, with fuze (mm)	565.7
Projectile mass, tabular (kg)	14.07
Explosive charge mass (kg)	2.2
Cartridge case length (mm)	371.856
Propelant charge mass (kg)	2.105
Operating temperature (°C)	-30 ÷ +50

Sloboda

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AMMUNITION 105 mm

(for 105 mm howitzers M56 and M2A1)

ROUND 105 mm WITH SMOKE PROJECTILE WP M60 AND PROPELLANT CHARGE M2

The round 105 mm is separate loaded, with a smoke projectile M60 and a propellant charge M2.

It is intended for creating smoke screen on the battlefield.

The projectile is filled with white phosphorus.

A fuze UTIU M02P1 is screwed on the projectile.

The full propellant charge M2 is in a brass cartridge case 105 mm M14 and is initiated by a gun primer KT M28A2.

Calibre (mm)	105
Projectile muzzle velocity (m/s)	491 (for M56), 472 (for M2A1)
Mean maximum pressure of powder gases (bar)	≤ 2305
Maximum range (m)	11600 (for M56), 11200 (for M2A1)
Projectile length, with fuze (mm)	496
Projectile mass, tabular (kg)	15.8
White phosphorus mass (kg)	1.7
Cartridge case length (mm)	371.856
Propellant charge mass (kg)	1.3
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 105 mm

(for 105 mm howitzers M56 and M2A1)

ROUND 105 mm WITH ILLUMINATING PROJECTILE M314A4 AND PROPELLANT CHARGE M2

The round 105 mm is separate loaded, with an illuminating projectile M314A4 and a propellant charge M2.

It is intended for illuminating the battlefield.

The projectile is assembled with an illuminating torch.

A fuze UTE M10 is screwed on the projectile and is timed with setter before firing the projectile.

The propellant charge M2 is in a brass cartridge case 105 mm M14 and is initiated by a gun primer KT M28A2.

Calibre (mm)	105
Projectile muzzle velocity (m/s)	461 (for M56), 443 (for M2A1)
Mean maximum pressure of powder gases (bar)	≤ 2305
Maximum range of illumination (m)	9200 (for M56), 9300 (for M2A1)
Projectile length, with fuze (mm)	487.8
Projectile mass, tabular (kg)	16.6
Flare composition mass (kg)	0.76
Light intensity (cd)	min 400000
Torch burning time (s)	min 30
Propelant charge mass (kg)	1.3
Operating temperature (°C)	-30 ÷ +50

Sloboda

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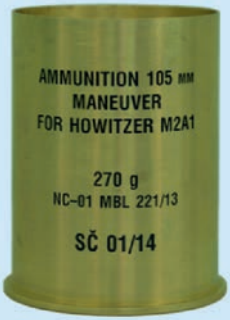
AMMUNITION 105 mm

(for 105 mm howitzers M56 and M2A1)



ROUND 105 mm BLANK (SALUTE)

The round 105 mm BLANK (SALUTE) is intended for simulation of live firing during manoeuvres, exercises and tactical operations.

It is used for gun salute.

The round consists of a cartridge case 105 mm SALUTE filled with propellant charge with igniter and a gun primer KT M1.

Calibre (mm)	105
Round length (mm)	max 153
Round mass (kg)	2.4
Muzzle safety (m)	min 100
Noise level (dB)	min 100
Powder	NC-01
Propellant charge mass (g)	270
Igniter (black powder N°7) mass (g)	50
Operating temperature (°C)	-30 ÷ +50

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AMMUNITION 105 mm

(for 105 mm howitzer M56/33)

ROUND 105 mm WITH PROJECTILE HE M1 AND PROPELLANT CHARGE M2

The round 105 mm is separate loaded, with a high-explosive projectile M1 and a propellant charge M2.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles.

The projectile is filled with TNT explosive.

The fuze UTIU M02P1 is screwed on the projectile.

The full propellant charge M2 is in a brass cartridge case 105 mm M14 and is initiated by a gun primer KT M28A2.

Calibre (mm)	105
Projectile muzzle velocity (m/s)	507
Mean maximum pressure of powder gases (bar)	≤ 2305
Maximum range (m)	11900
Projectile length, with fuze (mm)	496
Projectile mass, tabular (kg)	14.9
Explosive charge mass (kg)	2.11
Cartridge case length (mm)	371.856
Propellant charge mass (kg)	1.3
Operating temperature (°C)	-30 ÷ +50

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AMMUNITION 105 mm

(for 105 mm howitzer M56/33)

ROUND 105 mm WITH SMOKE PROJECTILE WP M60 AND PROPELLANT CHARGE M2

The round 105 mm is separate loaded, with a smoke projectile M60 and a propellant charge M2.

It is intended for creating smoke screen on the battlefield.

The projectile is filled with white phosphorus.

A fuze UTIU M02P1 is screwed on the projectile.

The full propellant charge M2 is in a brass cartridge case 105 mm M14 and is initiated by gun primer KT M28A2.

Calibre (mm)	105
Projectile muzzle velocity (m/s)	507
Mean maximum pressure of powder gases (bar)	≤ 2305
Maximum range (m)	11900
Projectile length, with fuze (mm)	496
Projectile mass, tabular (kg)	15.8
White phosphorus mass (kg)	1.7
Cartridge case length (mm)	371.856
Propellant charge mass (kg)	1.3
Operating temperature (°C)	-30 ÷ +50

75

AMMUNITION 105 mm

(for 105 mm howitzer M56/33)

ROUND 105 mm WITH PROJECTILE HEER-BT M15 AND FULL VARIABLE PROPELLANT CHARGE M15

The round 105 mm is separate loaded, with a high-explosive projectile M15 and a full variable propellant charge M15.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles.

The projectile is filled with TNT explosive.

A fuze UTIU M02 is screwed on the projectile.

The full variable propellant charge M15 is in a brass cartridge case 105 mm M14 and is initiated by a gun primer KT M02.

Calibre (mm)	105
Projectile muzzle velocity (m/s)	675
Mean maximum pressure of powder gases (bar)	≤ 2500
Maximum range (m)	15000
Projectile length, with fuze (mm)	566.6
Projectile mass, tabular (kg)	13
Explosive charge mass (kg)	2.2
Cartridge case length (mm)	371.856
Propellant charge mass (kg)	2.3
Operating temperature (°C)	-30 ÷ +50

75

AMMUNITION 105 mm

(for 105 mm howitzer M56/33)

ROUND 105 mm WITH PROJECTILE HEER-BB M15 AND FULL PROPELLANT CHARGE M15

The round 105 mm is separate loaded, with a high-explosive projectile M15 and a full propellant charge M15.

It is intended for the destruction of personnel, light fortifications, unarmored and lightlly armored vehicles.

The projectile is filled with TNT explosive.

The fuze UTIU M02 is screwed on the projectile.

The full propellant charge M15 is in a brass cartridge case 105 mm M14 and is initiated by gun primer KT M02.

Calibre (mm)	105
Projectile muzzle velocity (m/s)	670
Mean maximum pressure of powder gases (bar)	≤ 2650
Maximum range (m)	18000
Projectile length, with fuze (mm)	565.7
Projectile mass, tabular (kg)	14.07
Explosive charge mass (kg)	2.2
Cartridge case length (mm)	371.856
Propellant charge mass (kg)	2.2
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 122 mm

(for 122 mm howitzers D-30, D-30J and SP 2S1)

ROUND 122 mm WITH PROJECTILE HE 462A1 AND FULL PROPELLANT CHARGE M78

The round 122 mm is separate loaded, with a high-explosive projectile 462A1 and a full propellant charge M78.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles.

The projectile is filled with TNT explosive.

A fuze UTIU M72B1 is screwed on the projectile.

The full propellant charge M78 is in a steel cartridge case 122 mm M78 or a brass cartridge case 122 mm M19 and is initiated by a gun primer KT M71.

Calibre (mm)	122
Projectile muzzle velocity (m/s)	690
Mean maximum pressure of powder gases (bar)	≤ 2450
Maximum range (m)	15000
Projectile length, with fuze (mm)	max 565
Projectile mass, tabular (kg)	21.76
Explosive charge mass (kg)	3.6
Cartridge case length (mm)	447
Cartridge case 122 mm mass (kg)	3.66 (for M78), 4.06 (for M19)
Propellant charge mass (kg)	3.8
Operating temperature (°C)	-30 ÷ +50

Sloboda

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AMMUNITION 122 mm

(for 122 mm howitzers D-30, D-30J and SP 2S1)

ROUND 122 mm WITH PROJECTILE HE 462A1 AND REDUCED VARIABLE PROPELLANT CHARGE M78

The round 122 mm is separate loaded, with a high-explosive projectile 462A1 and a reduced variable propellant charge M78.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles.

The projectile is filled with TNT explosive.

A fuze UTIU M72B1 is screwed on the projectile.

The reduced variable propellant charge M78 is in a steel cartridge case 122 mm M78 or a brass cartridge case 122 mm M19 and is initiated by a gun primer KT M71.

Calibre (mm)	122
Projectile muzzle velocity (m/s)	565
Mean maximum pressure of powder gases (bar)	≤ 2450
Maximum range (m)	12800
Projectile length, with fuze (mm)	max 565
Projectile mass, tabular (kg)	21.76
Explosive charge mass (kg)	3.6
Cartridge case length (mm)	447
Cartridge case 122 mm mass (kg)	3.66 (for M78), 4.06 (for M19)
Propellant charge mass (kg)	2.6
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 122 mm

(for 122 mm howitzers D-30, D-30J and SP 2S1)

ROUND 122 mm WITH PROJECTILE HEER M10 AND FULL VARIABLE PROPELLANT CHARGE M10

The round 122 mm is separate loaded, with a high-explosive projectile M10 and a full variable propellant charge M10.

It is intended for destruction or neutralization of personnel, light fortifications, unarmored and lightly armored vehicles, artillery and rocket batteries on location, command positions, towing convoys at rest or in motion.

The projectile is filled with HAL-20 and a fuze UTIU M02P1 is screwed on the projectile.

The full variable propellant charge M10 (it consists of a base charge M10 and an increment charge M10) is in a steel cartridge case 122 mm M78 and is initiated by a gun primer KT M71.

Calibre (mm)	122
Projectile muzzle velocity (m/s)	745
Mean maximum pressure of powder gases (bar)	≤ 2450
Maximum range (m)	18300
Projectile length, with fuze (mm)	max 658
Projectile mass, tabular (kg)	20.2
Explosive charge mass (kg)	3.78
Cartridge case length (mm)	447
Cartridge case mass (kg)	3.66
Propellant charge mass (kg)	4.16
Operating temperature (°C)	-30 ÷ +50

75

AMMUNITION 122 mm

(for 122 mm howitzers D-30, D-30J and SP 2S1)

ROUND 122 mm WITH PROJECTILE HEER-BB M10 AND BASE PROPELLANT CHARGE M10

The round 122 mm is separate loaded, with a high-explosive projectile M10 (of extended range, with base-bleed mechanism) and a base propellant charge M10.

It is intended for destruction or neutralization of personnel, light fortifications, unarmored and lightly armored vehicles, artillery and rocket batteries on location, command positions, towing convoys at rest or in motion.

The projectile is filled with HAL-20 and a fuze UTIU M02P1 is screwed on the projectile.

The base propellant charge M10 is in a steel cartridge case 122 mm M78 and is initiated by a gun primer KT M71.

Calibre (mm)	122
Projectile muzzle velocity (m/s)	715
Mean maximum pressure of powder gases (bar)	≤ 2450
Maximum range (m)	21100
Projectile length, with fuze (mm)	max 658
Projectile mass, tabular (kg)	21.7
Explosive charge mass (kg)	3.78
Cartridge case length (mm)	447
Cartridge case mass (kg)	3.66
Propellant charge mass (kg)	3.95
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 122 mm

(for 122 mm howitzers D-30, D-30J and SP 2S1)

ROUND 122 mm WITH PROJECTILE WP M60 AND FULL PROPELLANT CHARGE M78

The round 122 mm is separate loaded, with a smoke projectile M60 and a full propellant charge M78.

It is intended for creating smoke screen on the battlefield.

The projectile is filled with white phosphorus.

A fuze UTIU M72B1 is screwed on the projectile.

The full propellant charge M78 is in a steel cartridge case 122 mm M78 or a brass cartridge case 122 mm M19 and is initiated by a gun primer KT M71.

Calibre (mm)	122
Projectile muzzle velocity (m/s)	690
Mean maximum pressure of powder gases (bar)	≤ 2450
Maximum range (m)	15000
Projectile length, with fuze (mm)	max 565
Projectile mass, tabular (kg)	21.76
White phosphorus mass (kg)	2.95
Cartridge case length (mm)	447
Cartridge case 122 mm mass (kg)	3.66 (for M78), 4.06 (for M19)
Propellant charge mass (kg)	3.8
Operating temperature (°C)	-30 ÷ +50

Sloboda

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AMMUNITION 122 mm

(for 122 mm howitzers D-30, D-30J and SP 2S1)

ROUND 122 mm WITH PROJECTILE WP M60 AND REDUCED VARIABLE PROPELLANT CHARGE M78

The round 122 mm is separate loaded, with a smoke projectile M60 and a reduced variable propellant charge M78.

It is intended for creating smoke screen on the battlefield.

The projectile is filled with white phosphorus.

A fuze UTIU M72B1 is screwed on the projectile.

The reduced variable propellant charge M78 is in a steel cartridge case 122 mm M78 or a brass cartridge case 122 mm M19 and is initiated by a gun primer KT M71.

Calibre (mm)	122
Projectile muzzle velocity (m/s)	565
Mean maximum pressure of powder gases (bar)	≤ 2450
Maximum range (m)	12800
Projectile length, with fuze (mm)	max 565
Projectile mass, tabular (kg)	21.76
White phosphorus mass (kg)	2.95
Cartridge case length (mm)	447
Cartridge case 122 mm mass (kg)	3.66 (for M78), 4.06 (for M19)
Propellant charge mass (kg)	2.6
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 122 mm

(for 122 mm howitzers D-30, D-30J and SP 2S1)

ROUND 122 mm WITH ILLUMINATING PROJECTILE S-463 AND FULL PROPELLANT CHARGE M78

The round 122 mm is separate loaded, with an illuminating projectile S-463 and a full propellant charge M78.

It is intended for illuminating the battlefield.

The projectile is assembled with an illuminating torch.

A fuze UTE M10 is screwed on the projectile and is timed with UTIF device (setter) before firing the projectile.

The full propellant charge M78 is in a steel cartridge case 122 mm M78 or a brass cartridge case 122 mm M19 and is initiated by a gun primer KT M71.

Calibre (mm)	122
Projectile muzzle velocity (m/s)	687
Mean maximum pressure of powder gases (bar)	≤ 2450
Maximum range of illumination (m)	15200
Projectile length, with fuze (mm)	max 516
Projectile mass, tabular (kg)	22.175
Light intensity (cd)	min 700000
Torch burning time (s)	min 55
Propellant charge mass (kg)	3.8
Cartridge case 122 mm mass (kg)	3.66 (for M78), 4.06 (for M19)
Operating temperature (°C)	-30 ÷ +50

75

AMMUNITION 122 mm

(for 122 mm howitzers D-30, D-30J and SP 2S1)

ROUND 122 mm WITH ILLUMINATING PROJECTILE S-463 AND REDUCED VARIABLE PROPELLANT CHARGE M78

The round 122 mm is separate loaded, with an illuminating projectile S-463 and a reduced variable propellant charge M78.

It is intended for illuminating the battlefield.

The projectile is assembled with an illuminating torch.

A fuze UTE M10 is screwed on the projectile and is timed with UTIF device (setter) before firing the projectile.

The reduced variable propellant charge M78 is in a steel cartridge case 122 mm M78 or a brass cartridge case 122 mm M19 and is initiated by a gun primer KT M71.

Calibre (mm)	122
Projectile muzzle velocity (m/s)	562
Mean maximum pressure of powder gases (bar)	≤ 2450
Maximum range of illumination (m)	12400
Projectile length, with fuze (mm)	max 516
Projectile mass, tabular (kg)	22.175
Light intensity (cd)	min 700000
Torch burning time (s)	min 55
Propellant charge mass (kg)	2.6
Cartridge case 122 mm mass (kg)	3.66 (for M78), 4.06 (for M19)
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 122 mm

(for 122 mm howitzers D-30, D-30J and SP 2S1)

ROUND 122 mm BLANK (SALUTE)

The round 122 mm BLANK (SALUTE) is intended for simulation of live firing during manoeuvres, exercises and tactical operations.

It is used for gun salute.

The round consists of a cartridge case 122 mm M78 filled with propellant charge with igniter and a gun primer KT M71.

Calibre (mm)	122
Round length (kg)	max 447
Round mass (kg)	4.41
Muzzle safety (m)	min 100
Noise level (dB)	min 100
Powder	NC-01
Propellant charge mass (g)	350
Igniter (black powder N°7) mass (g)	50
Cartridge case mass (kg)	3.66
Operating temperature (°C)	-30 ÷ +50

75

AMMUNITION 125 mm

(for 125 mm gun D-81 on tanks M84 or T-72)

ROUND 125 mm WITH PROJECTILE HE M86P2

The round 125 mm is separately loaded, with a high-explosive projectile M86P2 and a base propellant charge M88.

It is intended for direct and indirect firing of personnel, light fortifications, non-armored or lightly armored vehicles.

The projectile is assembled with HAL-20 explosive.

A fuze UTIU M85P1 is screwed on the projectile and it can be adjusted to superquick or delay action.

The base propellant charge M88 is with a combustible sabot and a short steel cartridge case and is activated by an electro-shock primer KT-EU M84.

Calibre (mm)	125
Projectile muzzle velocity (m/s)	850
Mean maximum pressure of powder gases (bar)	≤ 3432
Maximum range (m)	12200
Projectile length, with fuze (mm)	674
Projectile mass, tabular (kg)	23
Explosive charge mass (kg)	3.28
Base propellant charge mass (kg)	9.5
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 125 mm

(for 125 mm gun D-81 on tanks M84 or T-72)

ROUND 125 mm WITH SUBCALIBER PROJECTILE APFSDS-T M88

The round 125 mm is separately loaded, with a subcaliber-tracer projectile APFSDS-T M88 with core and a base propellant charge M88.

It is intended for actions against tanks, self-propelled artillery weapons and other armored targets.

A tracer № 13 is screwed on the projectile.

The base propellant charge M88 is with a combustible sabot and a short steel cartridge case and is activated by an electro-shock primer KT-EU M84.

Calibre (mm)	125
Projectile muzzle velocity (m/s)	1785
Mean maximum pressure of powder gases (bar)	≤ 4590
Maximum effective range (m)	4000
Projectile length (mm)	591
Bullet mass, tabular (kg)	5.86
Projectile mass, tabular (kg)	3.807
Projectile penetration (mm)	254
Increment charge mass (kg)	4.14
Tracer burning time (s)	2
Base propellant charge mass (kg)	9.5
Operating temperature (°C)	-30 ÷ +50

Sloboda

75

AMMUNITION 125 mm

**(for 125 mm gun D-81
on tanks M84 or T-72)**

ROUND 125 mm WITH PROJECTILE HEAT-T M88P1

The round 125 mm is separately loaded, with a projectile HEAT-T M88P1 and a base propellant charge M88.

It is intended for antitank combat and demolition of buildings.

The projectile is assembled with FO-4.5 explosive.

A fuze UT-PE M87P1 (upper and lower), which is mechanical and piezoelectric, and a tracer N° 12 are screwed on the projectile.

The base propellant charge M88 is with a combustible sabot and a short steel cartridge case and is activated by an electro-shock primer KT-EU M84.

Calibre (mm)	125
Projectile muzzle velocity (m/s)	905
Mean maximum pressure of powder gases (bar)	≤ 2942
Maximum effective range (m)	4000
Projectile length, with fuze (mm)	678
Projectile mass, tabular (kg)	19
Explosive charge mass (kg)	≈ 2
Projectile penetration (mm)	400
Tracer burning time (s)	4
Base propellant charge mass (kg)	9.5
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 125 mm

(for 125 mm gun D-81 on tanks M84 or T-72)

ROUND 125 mm WITH TRAINING PROJECTILE HEAT-T M17

The round 125 mm with training projectile HEAT-T M17 is intended for conducting training for antiarmor combat by direct firing from a tank gun 125 mm.

A tracer N° 12 is screwed on the projectile.

The base propellant charge M88 is with a combustible sabot and a short steel cartridge case and is activated by electro-impact primer KT-EU M84.

Calibre (mm)	125
Projectile muzzle velocity (m/s)	905
Mean maximum pressure of powder gases (bar)	≤ 2942
Maximum effective range (m)	4000
Projectile length (mm)	678
Projectile mass, tabular (kg)	19
Tracer burning time (s)	4
Base propellant charge mass (kg)	9.5
Operating temperature (°C)	-30 ÷ +50

75

AMMUNITION 130 mm

(for 130 mm gun M46)

ROUND 130 mm WITH PROJECTILE HE M79 AND FULL VARIABLE PROPELLANT CHARGE M46

The round 130 mm is separately loaded, with a high-explosive projectile M79 and a full variable propellant charge M46.

It is intended for destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is assembled with TNT explosive.

A fuze UTIU M72B1 is screwed on the projectile and it can be adjusted to superquick or delay action.

The full variable propellant charge M46 is activated by a gun primer KT M71.

Calibre (mm)	130
Projectile muzzle velocity (m/s)	930
Mean maximum pressure of powder gases (bar)	≤ 3090
Maximum range (m)	27400
Projectile length, with fuze (mm)	674
Projectile mass, tabular (kg)	33.4
Explosive charge mass (kg)	3.67
Cartridge case length (mm)	846
Cartridge case mass (kg)	11.35
Propellant charge mass (kg)	13.5
Operating temperature (°C)	-30 ÷ +50

75

AMMUNITION 130 mm

(for 130 mm gun M46)

ROUND 130 mm WITH PROJECTILE HE M79 AND REDUCED VARIABLE PROPELLANT CHARGE M46

The round 130 mm is separately loaded, with a high-explosive projectile M79 and a reduced variable propellant charge M46.

It is intended for destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is assembled with TNT explosive.

A fuze UTIU M72B1 is screwed on the projectile and it can be adjusted to superquick or delay action.

The reduced variable propellant charge M46 is activated by a gun primer KT M71.

Calibre (mm)	130
Projectile muzzle velocity (m/s)	705
Mean maximum pressure of powder gases (bar)	≤ 2648
Maximum range (m)	19000
Projectile length, with fuze (mm)	674
Projectile mass, tabular (kg)	33.4
Explosive charge mass (kg)	3.67
Cartridge case length (mm)	846
Cartridge case mass (kg)	11.35
Propellant charge mass (kg)	6.75
Operating temperature (°C)	-30 ÷ +50

Sloboda

75

AMMUNITION 130 mm

(for 130 mm gun M46)

ROUND 130 mm WITH PROJECTILE HE M93 WITH BASE-BLEED AND FULL PROPELLANT CHARGE M93A

The round 130 mm is separately loaded, with a high-explosive projectile M93 with base-bleed and a full propellant charge M93A.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is assembled with TNT explosive.

A fuze UTIU M72B1 is screwed on the projectile and it can be adjusted to superquick or delay action.

The full propellant charge M93A is activated by a gun primer KT M71.

Calibre (mm)	130
Projectile muzzle velocity (m/s)	885
Mean maximum pressure of powder gases (bar)	≤ 3080
Maximum range (m)	31100
Projectile length, with fuze (mm)	≈ 756
Projectile mass (kg)	36.95
Explosive charge mass (kg)	≈ 3.64
Cartridge case length (mm)	846
Cartridge case mass (kg)	11.35
Propellant charge mass (kg)	12.6
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 152 mm

(for 152 mm gun-howitzer D-20 and 152 mm gun-howitzer M1937)

ROUND 152 mm WITH PROJECTILE HE M88 AND FULL VARIABLE PROPELLANT CHARGE M77

The round 152 mm is separately loaded, with a high-explosive projectile M88 and a full variable propellant charge M77.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is assembled with TNT.

A fuze UTIU M72B1 is screwed on the projectile and it can be adjusted to instant or delay action,.

The full variable propellant charge M77 is activated by a gun primer KT M71.

Calibre (mm)	152
Projectile muzzle velocity (m/s)	655
Mean maximum pressure of powder gases (bar)	≤ 2305
Maximum range (m)	17400
Projectile length, with fuze (mm)	max 710
Projectile mass, tabular (kg)	43.56
Explosive charge mass (kg)	5.94
Cartridge case length (mm)	max 547.5
Cartridge case mass (kg)	7.5
Propellant charge mass (kg)	8.57
Operating temperature (°C)	-30 ÷ +50

Sloboda

75

AMMUNITION 152 mm

(for 152 mm gun-howitzer D-20 and 152 mm gun-howitzer M1937)

ROUND 152 mm WITH PROJECTILE HE M88 AND REDUCED VARIABLE PROPELLANT CHARGE M77

The round 152 mm is separately loaded, with a high-explosive projectile M88 and a reduced variable propellant charge M77.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is assembled with TNT.

A fuze UTIU M72B1 is screwed on the projectile and it can be adjusted to instant or delay action.

The reduced variable propellant charge M77 is activated by a gun primer KT M71.

Calibre (mm)	152
Projectile muzzle velocity (m/s)	511
Mean maximum pressure of powder gases (bar)	≤ 2059
Maximum range (m)	13400
Projectile length, with fuze (mm)	max 710
Projectile mass, tabular (kg)	43.56
Explosive charge mass (kg)	5.94
Cartridge case length (mm)	max 547.5
Cartridge case mass (kg)	7.5
Propellant charge mass (kg)	4.19
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 155 mm

(for 155 mm howitzers M109/M126A1, M109A1/M185 and M198/M199)

ROUND 155 mm WITH PROJECTILE HE M107 AND PROPELLANT CHARGE M3A1

The round 155 mm is separate loaded, with a high-explosive projectile M107 and a propellant charge M3A1.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is filled with TNT explosive.

A fuze UTIU M02P1 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge M3A1 is activated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	375 (M109/M126A1), 375 (M109A1/M185), 380 (M198/M199)
Mean maximum pressure of powder gases (bar)	≤ 1593 (M109/M126A1), ≤ 1062 (M109A1/M185)
Maximum range (m)	9803 (M109/M126A1), 9800 (M109A1/M185), 9800 (M198/M199)
Projectile length, with fuze (mm)	702
Projectile mass, tabular (kg)	43.1
Explosive charge mass (kg)	6.72
Propellant charge mass (kg)	2.68
Operating temperature (°C)	-30 ÷ +50

75

AMMUNITION 155 mm

(for 155 mm howitzers M109/M126A1, M109A1/M185 and M198/M199)

ROUND 155 mm WITH PROJECTILE HE M107 AND PROPELLANT CHARGE M4A2

The round 155 mm is separate loaded, with a high-explosive projectile M107 and a propellant charge M4A2.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is filled with TNT explosive.

A fuze UTIU M02P1 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge M4A2 is activated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	562 (M109/M126A1), 565 (M109A1/M185), 574 (M198/M199)
Mean maximum pressure of powder gases (bar)	≤ 2495 (M109/M126A1), ≤ 1730 (M109A1/M185)
Maximum range (m)	14600 (M109/M126A1), 14800 (M109A1/M185), 15030 (M198/M199)
Projectile length, with fuze (mm)	702
Projectile mass, tabular (kg)	43.1
Explosive charge mass (kg)	6.72
Propellant charge mass (kg)	6.4
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 155 mm

(for 155 mm howitzers M109A1/M185 and M198/M199)

ROUND 155 mm WITH PROJECTILE HE M107 AND PROPELLANT CHARGE M119A1

The round 155 mm is separate loaded, with a high-explosive projectile M107 and a propellant charge M119A1.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is filled with TNT explosive.

A fuze UTIU M02P1 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge M119A1 is activated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	684 (M109A1/M185), 690 (M198/M199)
Mean maximum pressure of powder gases (bar)	≤ 2060 (M109A1/M185), ≤ 2170 (M198/M199)
Maximum range (m)	18100 (M109A1/M185), 18270 (M198/M199)
Projectile length, with fuze (mm)	702
Projectile mass, tabular (kg)	43.1
Explosive charge mass (kg)	6.72
Propellant charge mass (kg)	9
Operating temperature (°C)	-30 ÷ +50

ARTILLERY RESOURCES

75

AMMUNITION 155 mm

(for 155 mm howitzers M109/M126A1, M109A1/M185 and M198/M199)

ROUND 155 mm WITH PROJECTILE WP M110A2 AND PROPELLANT CHARGE M3A1

The round 155 mm is separate loaded, with a projectile WP M110A2 and a propellant charge M3A1.

It is intended to create smoke screen on the battlefield with white phosphorus.

The projectile is filled with white phosphorus.

A fuze UTIU M02P1 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge M3A1 is initiated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	374.9 (M109/M126A1), 374.9 (M109A1/M185), 380.1
Mean maximum pressure of powder gases (bar)	≤ 1593 (M109/M126A1), ≤ 1062 (M109A1/M185)
Maximum range (m)	9800 (M109/M126A1), 9800 (M109A1/M185), 9800 (M198/M199)
Projectile length, with fuze (mm)	702.5
Projectile mass, tabular (kg)	44.17
White phosphorus mass (kg)	7.1
Propellant charge mass (kg)	2.68
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 155 mm

(for 155 mm howitzers M109/M126A1, M109A1/M185 and M198/M199)

ROUND 155 mm WITH PROJECTILE WP M110A2 AND PROPELLANT CHARGE M4A2

The round 155 mm is separate loaded, with a projectile WP M110A2 and a propellant charge M4A2.

It is intended to create smoke screen on the battlefield with white phosphorus.

The projectile is filled with white phosphorus.

A fuze UTIU M02P1 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge M4A2 is activated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	562.4 (M109/M126A1), 565.4 (M109A1/M185), 574.3
Mean maximum pressure of powder gases (bar)	≤ 2495 (M109/M126A1), ≤ 1730 (M109A1/M185)
Maximum range (m)	14600 (M109/M126A1), 14800 (M109A1/M185), 14800
Projectile length, with fuze (mm)	702.5
Projectile mass, tabular (kg)	44.17
White phosphorus mass (kg)	7.1
Propellant charge mass (kg)	6.4
Operating temperature (°C)	-30 ÷ +50

75

AMMUNITION 155 mm

(for 155 mm howitzers M109A1/M185 and M198/M199)

ROUND 155 mm WITH PROJECTILE WP M110A2 AND PROPELLANT CHARGE M119A1

The round 155 mm is separate loaded, with a projectile WP M110A2 and a propellant charge M119A1.

It is intended to create smoke screen on the battlefield with white phosphorus.

The projectile is filled with white phosphorus.

A fuze UTIU M02P1 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge M119A1 is activated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	684 (M109A1/M185), 690 (M198/M199)
Mean maximum pressure of powder gases (bar)	≤ 2060 (M109A1/M185), ≤ 2170 (M198/M199)
Maximum range (m)	18100 (M109A1/M185), 18270 (M198/M199)
Projectile length, with fuze (mm)	702.5
Projectile mass, tabular (kg)	44.17
White phosphorus mass (kg)	7.1
Propellant charge mass (kg)	9
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 155 mm

(for 155 mm howitzers M109/M126A1, M109A1/M185 and M198/M199)

ROUND 155 mm WITH ILLUMINATING PROJECTILE M485A2 AND PROPELLANT CHARGE M3A1

The round 155 mm is separate loaded, with an illuminating projectile M485A2 and a propellant charge M3A1.

It is intended for illuminating the battlefield.

The projectile is assembled with an illuminating torch.

An electronic time fuze UTE M10 is screwed on the projectile and it is timed with UTIF device (setter) before firing the projectile.

The propellant charge M3A1 is initiated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	385 (M109/M126A1), 381.7 (M109A1/M185), 380.1 (M198/M199)
Mean maximum pressure of powder gases (bar)	≤ 1593 (M109/M126A1), ≤ 1062 (M109A1/M185)
Maximum range of illumination (m)	9000 (M109/M126A1), 9000 (M109A1/M185), 10300 (M198/M199)
Projectile length, with fuze (mm)	701
Projectile mass, tabular (kg)	41.8
Illuminating composition mass (kg)	2.63
Light intensity (cd)	1000000
Torch burning time (s)	≈ 120
Propellant charge mass (kg)	2.68
Operating temperature (°C)	-30 ÷ +50

75

AMMUNITION 155 mm

(for 155 mm howitzers M109/M126A1, M109A1/M185 and M198/M199)

ROUND 155 mm WITH ILLUMINATING PROJECTILE M485A2 AND PROPELLANT CHARGE M4A2

The round 155 mm is separate loaded, with an illuminating projectile M485A2 and a propellant charge M4A2.

It is intended for illuminating the battlefield.

The projectile is assembled with an illuminating torch.

An electronic time fuze UTE M10 is screwed on the projectile and it is timed with UTIF device (setter) before firing the projectile.

The propellant charge M4A2 is initiated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	576.5 (M109/M126A1), 576.5 (M109A1/M185), 574.3 (M198/M199)
Mean maximum pressure of powder gases (bar)	≤ 2495 (M109/M126A1), ≤ 1730 (M109A1/M185)
Maximum range of illumination (m)	14000 (M109/M126A1), 14000 (M109A1/M185), 14500 (M198/M199)
Projectile length, with fuze (mm)	701
Projectile mass, tabular (kg)	41.8
Illuminating composition mass (kg)	2.63
Light intensity (cd)	1000000
Torch burning time (s)	≈ 120
Propellant charge mass (kg)	6.4
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 155 mm

(for 155 mm howitzers M109A1/M185 and M198/M199)

ROUND 155 mm WITH ILLUMINATING PROJECTILE M485A2 AND PROPELLANT CHARGE M119A1

The round 155 mm is separate loaded, with an illuminating projectile M485A2 and a propellant charge M119A1.

It is intended for illuminating the battlefield.

The projectile is assembled with an illuminating torch.

An electronic time fuze UTE M10 is screwed on the projectile and it is timed with UTIF device (setter) before firing the projectile.

The propellant charge M119A1 is initiated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	697 (M109A1/M185), 684 (M198/M199)
Mean maximum pressure of powder gases (bar)	≤ 2060 (M109A1/M185), ≤ 2170 (M198/M199)
Maximum range of illumination (m)	17500 (M109A1/M185), 18400 (M198/M199)
Projectile length, with fuze (mm)	701
Projectile mass, tabular (kg)	41.8
Illuminating composition mass (kg)	2.63
Light intensity (cd)	1000000
Torch burning time (s)	≈ 120
Propellant charge mass (kg)	9
Operating temperature (°C)	-30 ÷ +50

Sloboda

75

AMMUNITION 155 mm

(for 155 mm self-propelled gun-howitzer NORA-B52 M15)

ROUND 155 mm WITH PROJECTILE HE M101 AND PROPELLANT CHARGE MC ZONE 9

The round 155 mm is separate loaded, with a high-explosive projectile M101 and a propellant charge MC zone 9.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is assembled with TNT.

A fuze UTIU M02P1 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge MC zone 9 is initiated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	840
Mean maximum pressure of powder gases (bar)	≤ 2500
Maximum range (m)	23000
Projectile length, with fuze (mm)	702
Projectile mass, tabular (kg)	43.25
Explosive charge mass (kg)	6.9
Propellant charge mass (kg)	14
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 155 mm

(for 155 mm self-propelled gun-howitzer NORA-B52 M15)

ROUND 155 mm WITH PROJECTILE HE M107 AND PROPELLANT CHARGE MC ZONE 8

The round 155 mm is separate loaded, with a high-explosive projectile M107 and a propellant charge MC zone 8.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is assembled with TNT.

A fuze UTIU M02P1 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge MC zone 8 is initiated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	690
Mean maximum pressure of powder gases (bar)	≤ 1900
Maximum range (m)	18400
Projectile length, with fuze (mm)	702
Projectile mass, tabular (kg)	43.1
Explosive charge mass (kg)	6.72
Propellant charge mass (kg)	9.4
Operating temperature (°C)	-30 ÷ +50

Sloboda

75

AMMUNITION 155 mm

(for 155 mm self-propelled gun-howitzer NORA-B52 M15)

ROUND 155 mm WITH PROJECTILE HEER-BT M19 AND PROPELLANT CHARGE MC ZONE 9

The round 155 mm is separate loaded, with a high-explosive extended range projectile M19 with boat tail and a propellant charge MC zone 9.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is assembled with TNT.

A fuze UTIU M02P1 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge MC zone 9 is initiated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	840
Mean maximum pressure of powder gases (bar)	≤ 2700
Maximum range (m)	25600
Projectile length, with fuze (mm)	937.28
Projectile mass, tabular (kg)	43.8
Explosive charge mass (kg)	9.7
Propellant charge mass (kg)	14
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 155 mm

(for 155 mm self-propelled gun-howitzer NORA-B52 M15)

ROUND 155 mm WITH PROJECTILE HEER-BT M19 AND PROPELLANT CHARGE MC ZONE 10

The round 155 mm is separate loaded, with a high-explosive extended range projectile M19 with boat tail and a propellant charge MC zone 10.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is assembled with TNT.

A fuze UTIU M02P1 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge MC zone 10 is initiated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	930
Mean maximum pressure of powder gases (bar)	≤ 3300
Maximum range (m)	29000
Projectile length, with fuze (mm)	937.28
Projectile mass, tabular (kg)	43.8
Explosive charge mass (kg)	9.7
Propellant charge mass (kg)	17
Operating temperature (°C)	-30 ÷ +50

75

AMMUNITION 155 mm

(for 155 mm self-propelled gun-howitzer NORA-B52 M15)

ROUND 155 mm WITH PROJECTILE HEER-BB M19 AND PROPELLANT CHARGE MC ZONE 9

The round 155 mm is separate loaded, with a high-explosive extended range projectile with base-bleed mechanism M19 and a propellant charge MC zone 9.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is assembled with TNT.

A fuze UTIU M02P1 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge MC zone 9 is initiated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	825
Mean maximum pressure of powder gases (bar)	≤ 2700
Maximum range (m)	31000
Projectile length, with fuze (mm)	937.28
Projectile mass, tabular (kg)	47.1
Explosive charge mass (kg)	9.7
Propellant charge mass (kg)	14
Operating temperature (°C)	-30 ÷ +50

Sloboda

ARTILLERY RESOURCES

75

AMMUNITION 155 mm

(for 155 mm self-propelled gun-howitzer NORA-B52 M15)

ROUND 155 mm WITH PROJECTILE HEER-BB M19 AND PROPELLANT CHARGE MC ZONE 10

The round 155 mm is separate loaded, with a high-explosive extended range projectile with base-bleed mechanism M19 and a propellant charge MC zone 10.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is assembled with TNT.

A fuze UTIU M02P1 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge MC zone 10 is initiated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	925
Mean maximum pressure of powder gases (bar)	≤ 3300
Maximum range (m)	38000
Projectile length, with fuze (mm)	937.28
Projectile mass, tabular (kg)	47.1
Explosive charge mass (kg)	9.7
Propellant charge mass (kg)	17
Operating temperature (°C)	-30 ÷ +50

75

AMMUNITION 155 mm

(for 155 mm self-propelled gun-howitzer NORA-B52 M15)

ROUND 155 mm WITH PROJECTILE HE ERFB M03 AND PROPELLANT CHARGE MC ZONE 9

The round 155 mm is separate loaded, with a high-explosive extended range projectile M03 with boat tail and a propellant charge MC zone 9.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is assembled with TNT.

A fuze UTIU M02P1 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge MC zone 9 is initiated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	820
Mean maximum pressure of powder gases (bar)	≤ 2700
Maximum range (m)	26600
Projectile length, with fuze (mm)	937.28
Projectile mass, tabular (kg)	45.5
Explosive charge mass (kg)	8.1
Propellant charge mass (kg)	14
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 155 mm

(for 155 mm self-propelled gun-howitzer NORA-B52 M15)

ROUND 155 mm WITH PROJECTILE HE ERFB M03 AND PROPELLANT CHARGE MC ZONE 10

The round 155 mm is separate loaded, with a high-explosive extended range projectile M03 with boat tail and a propellant charge MC zone 10.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is assembled with TNT.

A fuze UTIU M02P1 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge MC zone 10 is initiated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	920
Mean maximum pressure of powder gases (bar)	≤ 2700
Maximum range (m)	32200
Projectile length, with fuze (mm)	937.28
Projectile mass, tabular (kg)	45.5
Explosive charge mass (kg)	8.1
Propellant charge mass (kg)	17
Operating temperature (°C)	-30 ÷ +50

75

AMMUNITION 155 mm

(for 155 mm self-propelled gun-howitzer NORA-B52 M15)

ROUND 155 mm WITH PROJECTILE HE ERFB-BB M03 AND PROPELLANT CHARGE MC ZONE 9

The round 155 mm is separate loaded, with a high-explosive extended range projectile with base-bleed mechanism M03 and a propellant charge MC zone 9.

It is intended for the destruction of personnel, light fortifications, unarmored and light-armored vehicles, etc.

The projectile is assembled with TNT.

A fuze UTIU M02P1 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge MC zone 9 is initiated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	820
Mean maximum pressure of powder gases (bar)	≤ 2700
Maximum range (m)	31600
Projectile length, with fuze (mm)	937.28
Projectile mass, tabular (kg)	47.6
Explosive charge mass (kg)	8.1
Propellant charge mass (kg)	14
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 155 mm

(for 155 mm self-propelled gun-howitzer NORA-B52 M15)

ROUND 155 mm WITH PROJECTILE HE ERFB-BB M03 AND PROPELLANT CHARGE MC ZONE 10

The round 155 mm is separate loaded, with a high-explosive extended range projectile with base-bleed mechanism M03 and a propellant charge MC zone 10.

It is intended for the destruction of personnel, light fortifications, unarmored and lightly armored vehicles, etc.

The projectile is assembled with TNT.

A fuze UTIU M02P1 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge MC zone 10 is initiated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	925
Mean maximum pressure of powder gases (bar)	≤ 3300
Maximum range (m)	41000
Projectile length, with fuze (mm)	937.28
Projectile mass, tabular (kg)	47.6
Explosive charge mass (kg)	8.1
Propellant charge mass (kg)	17
Operating temperature (°C)	-30 ÷ +50

75

AMMUNITION 155 mm

(for 155 mm self-propelled gun-howitzer NORA-B52 M15)

ROUND 155 mm WITH PROJECTILE ERFB WP M09 AND PROPELLANT CHARGE MC ZONE 9

The round 155 mm is separate loaded, with an extended range projectile WP M09 and a propellant charge MC zone 9.

It is intended for creating smoke screen on the battlefield with white phosphorus.

The projectile is filled with white phosphorus.

A fuze UTIU M02 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge MC zone 9 is initiated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	820
Mean maximum pressure of powder gases (bar)	≤ 2700
Maximum range (m)	26600
Projectile length, with fuze (mm)	937.28
Projectile mass, tabular (kg)	45.5
White phosphorus mass (kg)	8.7
Propellant charge mass (kg)	14
Operating temperature (°C)	-30 ÷ +50

AMMUNITION 155 mm

(for 155 mm self-propelled gun-howitzer NORA-B52 M15)

ROUND 155 mm WITH PROJECTILE ERFB WP M09 AND PROPELLANT CHARGE MC ZONE 10

The round 155 mm is separate loaded, with an extended range projectile WP M09 and a propellant charge MC zone 10.

It is intended for creating smoke screen on the battlefield with white phosphorus.

The projectile is filled with white phosphorus.

A fuze UTIU M02 is screwed on the projectile and it can be set to superquick or delay action.

The propellant charge MC zone 10 is initiated by a gun primer KT M82P2.

Calibre (mm)	155
Projectile muzzle velocity (m/s)	920
Mean maximum pressure of powder gases (bar)	≤ 3300
Maximum range (m)	32200
Projectile length, with fuze (mm)	937.28
Projectile mass, tabular (kg)	45.5
White phosphorus mass (kg)	8.7
Propellant charge mass (kg)	17
Operating temperature (°C)	-30 ÷ +50

Sloboda

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FUZES

FUZE UTI M68P1

The fuze UTI M68P1 is superquick-inertia fuze.
It is intended for the assembling the HE projectiles in caliber 76 mm.
The fuze with cap is safe for firing in snow and rain.
It is safe in all conditions of transportation and handling.

Action type	superquick
Total height of fuze (mm)	≈ 102.4
Depth of fuze intrusion (mm)	max 56.55
Muzzle safety (m)	min 10
Ready to act - armed (m)	max 140
Safety - mechanical, centrifugal, pyrotechnic (ms)	100 ÷ 200
Arming during axial acceleration (m/s^2)	24000 ÷ 230000
Rotation (min^{-1})	min 3100
Fuze mass (kg)	0.358
Operating temperature (°C)	-30 ÷ +50

FUZE UTIU M85P1

The fuze UTIU M85P1 is mechanical, point-detonating fuze located at the nose, with superquick, inertia and delay action.

It is intended for the assembling the HE non-rotating projectiles in calibers 100 mm, 115 mm and 125 mm for 100 mm antitank guns T-12 or MT-12 and for tank guns 115 mm or 125 mm D-81.

It can be set at superquick and delay action.

The fuze with cap is safe for firing in snow and rain.

It is safe in all conditions of transportation and handling.

Action type (setting)	superquick, delay
Total height of fuze (mm)	max 105.71
Depth of fuze intrusion (mm)	max 46.8
Delay time - delay action (ms)	27 ÷ 55
Muzzle safety (m)	min 10
Ready to act - armed (m)	max 100
Safety - mechanical, pyrotechnic (ms)	100 ÷ 200
Arming during axial acceleration (m/s^2)	min 30000 to max 230000
Fuze mass (kg)	0.41
Operating temperature (°C)	-30 ÷ +50

Sloboda

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FUZES

FUZE UTIU M72B1

The fuze UTIU M72B1 is mechanical, point-detonating fuze located at the nose, with superquick, inertia and delay action (it can be set at superquick and delay action).

It is intended for the assembling the HE projectiles in calibers 85 mm, 100 mm, 122 mm, 130 mm and 152 mm for guns and howitzers.

The fuze with cap is safe for firing in snow and rain.

It is safe in all conditions of transportation and handling.

Action type (setting)	superquick, delay
Total height of fuze (mm)	max 105.71
Depth of fuze intrusion (mm)	max 46.8
Delay time - delay action (ms)	20 ÷ 50
Muzzle safety (m)	min 10
Ready to act - armed (m)	max 200
Safety - mechanical, centrifugal, pyrotechnic (ms)	100 ÷ 200
Arming during axial acceleration (m/s^2)	24000 ÷ 230000
Rotation (min^{-1})	min 3100
Muzzle velocity (m/s)	max 1100
Fuze mass (kg)	0.42
Operating temperature (°C)	-30 ÷ +50

FUZE UTIU M72B2

The fuze UTIU M72B2 is mechanical, point-detonating fuze located at the nose, with superquick, inertia and delay action (it can be set at superquick and delay action).

It is intended for the assembling the HE projectiles in calibers 85 mm, 100 mm, 122 mm, 130 mm and 152 mm for guns and howitzers.

The fuze with cap is safe for firing in snow and rain.

It is safe in all conditions of transportation and handling.

Action type (setting)	superquick, delay
Total height of fuze (mm)	max 105.71
Depth of fuze intrusion (mm)	max 46.8
Delay time - delay action (ms)	20 ÷ 50
Muzzle safety (m)	min 50
Ready to act - armed (m)	max 300
Safety - mechanical, centrifugal, pyrotechnic (ms)	200 ÷ 250
Arming during axial acceleration (m/s^2)	24000 ÷ 230000
Rotation (min^{-1})	min 3100
Muzzle velocity (m/s)	max 1100
Fuze mass (kg)	0.42
Operating temperature (°C)	-30 ÷ +50

Sloboda

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FUZES

FUZE UTIU M72B3

The fuze UTIU M72B3 is mechanical, point-detonating fuze located at the nose, with superquick, inertia and delay action (it can be set at superquick and delay action).

It is intended for the assembling the HE projectiles with and without base-bleed in calibers 85 mm, 100 mm, 122 mm, 130 mm and 152 mm for guns and howitzers.

The fuze with cap is safe for firing in snow and rain.

It is safe in all conditions of transportation and handling.

Action type (setting)	superquick, delay
Total height of fuze (mm)	max 105.71
Depth of fuze intrusion (mm)	max 46.8
Delay time - delay action (ms)	20 ÷ 50
Muzzle safety (m)	min 10
Ready to act - armed (m)	max 200
Safety - mechanical, centrifugal, pyrotechnic (ms)	100 ÷ 200
Arming during axial acceleration (m/s^2)	24000 ÷ 230000
Rotation (min^{-1})	min 3100
Muzzle velocity (m/s)	max 1100
Fuze mass (kg)	0.42
Operating temperature (°C)	-30 ÷ +50

FUZE UTIU M02

The fuze UTIU M02, with superquick, inertia and delay action, is mechanical, point-detonating fuze located at the nose.

It is intended for the assembling HE projectiles 105 mm HE ER M02 and 105 mm HE ER-BB M02.

It can be set at superquick and delay action.

The fuze is safe for firing in rain and snow.

It is safe in all conditions of transportation and handling.

Action type (setting)	superquick, delay
Total height of fuze (mm)	max 153.33
Depth of fuze intrusion (mm)	max 56.13
Delay time - delay action (ms)	20 ÷ 50
Muzzle safety (m)	min 40
Ready to act - armed (m)	max 150
Safety - mechanical, centrifugal, pyrotechnic (ms)	100 ÷ 200
Arming during axial acceleration (m/s^2)	24000 ÷ 230000
Rotation (min^{-1})	min 3100
Fuze mass (kg)	0.57
Operating temperature (°C)	-30 ÷ +50

Sloboda

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FUZES

FUZE UTIU M02P1

The fuze UTIU M02P1, with superquick, inertia and delay action, is mechanical, point detonating fuze located at the nose.

It is intended for the assembling the HE projectiles with and without base-bleed in calibers 105 mm, 122 mm (with special adapter) and 155 mm for guns and howitzers.

It can be set at superquick and delay action.

The fuze is safe for firing in rain and snow.

It is safe in all conditions of transportation and handling.

Action type (setting)	superquick, delay
Total height of fuze (mm)	max 153.33
Depth of fuze intrusion (mm)	max 56.13
Delay time - delay action (ms)	20 ÷ 50
Muzzle safety (m)	min 10
Ready to act - armed (m)	max 200
Safety - mechanical, centrifugal, pyrotechnic (ms)	100 ÷ 200
Arming during axial acceleration (m/s^2)	24000 ÷ 230000
Rotation (min^{-1})	min 3100
Fuze mass (kg)	0.81
Operating temperature (°C)	-30 ÷ +50

75

FUZES

FUZE UT-PE M69

The fuze UT-PE M69 is located at the nose and it is impact piezoelectric fuze with superquick action.

It is intended for assembling projectiles HEAT Shell 90 mm M74, 100 mm M69 and 100 mm M88.

The fuze has an interrupted explosive train and the electrical detonator in short circuit.

It is safe in all conditions of transportation and handling.

Action type	superquick
Total fuze height (mm)	max 101.36
Depth of fuze intrusion (mm)	max 44.38
Muzzle safety (m)	min 2.5
Ready to act - armed (m)	40
Axial acceleration (m/s^2)	max 250000
Fuze mass (kg)	0.191
Operating temperature (°C)	-30 ÷ +50

75

FUZES

FUZE UT-PE M87P1

The fuze UT-PE M87P1 is superquick and piezoelectric.

It is intended for assembling the HEAT projectiles of calibers 100 mm, 122 mm and 125 mm, firing from antitank gun 100 mm T-12, howitzer 122 mm D-30, self-propelled howitzer 122 mm 2S1 and tank gun 125 mm D-81.

The fuze is bipartite, impact and it has superquick action.

It consists of an upper and a lower fuze.

The fuze is safe in all conditions of transportation, storage and handling.

Action type	superquick
Muzzle safety (m)	min 2.5
Ready to act - armed (m)	20
Arming during axial acceleration (m/s^2)	min 36000
Upper fuze (piezoelectric generator) mass (g)	85
Lower fuze mass (g)	170
Operating temperature (°C)	-30 ÷ +50

FUZE UTE M03

The fuze UTE M03 is intended for assembling artillery projectiles 105 mm and 155 mm of special purpose (illuminating, smoke with HC containers, propaganda, etc) with 2"-12UNS-1A thread, for howitzers in calibers 105 mm and 155 mm.

The fuze is electronic and it is located at the nose.

It possesses timing function as well as secondary contact function.

The time is set with a button and is shown on the display.

The fuze is protected from intended and unintended eletromagnetic interferences.

It is safe in all conditions of transportation, storage and usage.

Action type	timing, secondary contact
Time setting, with button and display (s)	3.2 ÷ 199.9 (pitch of 0.1, accuracy of ± 0.05)
Total fuze height (mm)	max 134.1
Depth of fuze intrusion (mm)	max 38.2
Muzzle safety (m)	mechanical: min 400 calibers, electronic: min 3 s per firing
Arming during axial acceleration (m/s^2)	24000 ÷ 250000
Rotation (min^{-1})	2000 ÷ 25000
Muzzle velocity (m/s)	max 1100
Fuze mass (kg)	0.6
Operating temperature (°C)	-30 ÷ +50

Sloboda

75

FUZES

FUZE UTE M03A1

The fuze UTE M03A1 is intended for assembling 105 mm and 155 mm timed artillery projectiles (high-explosive, smoke with white phosphorus, etc) with 2"-12UNS-1A thread.

The fuze is electronic and it is located at the nose.

It possesses timing function as well as secondary contact function.

The time is set with a button and it is shown on the display.

The fuze is protected from intended and unintended eletromagnetic interferences.

It is safe in all conditions of transportation, storage and usage.

Action type	timing, secondary contact
Time setting, with button and display (s)	3.2 ÷ 199.9 (pitch of 0.1, accuracy of ± 0.05)
Total fuze height (mm)	max 152.03
Depth of fuze intrusion (mm)	max 56.13
Muzzle safety (m)	mechanical: min 400 calibers, electronic: min 3 s per firing
Arming during axial acceleration (m/s^2)	24000 ÷ 250000
Rotation (min^{-1})	2000 ÷ 25000
Muzzle velocity (m/s)	max 1100
Fuze mass (kg)	0.65
Operating temperature (°C)	-30 ÷ +50

FUZE UTE M10

The fuze UTE M10 is intended for assembling artillery projectiles 105 mm and 155 mm of special purpose (illuminating, smoke with HC containers, propaganda, etc) with 2"-12UNS-1A thread, for howitzers in calibers 105 mm and 155 mm.

The fuze is electronic and it is located at the nose.

It possesses timing function as well as secondary contact function.

The time setting is wireless, with setter (device for time setting and function selection).

The fuze is protected from intended and unintended eletromagnetic interferences.

It is safe in all conditions of transportation, storage and usage.

Action type	timing, secondary contact
Time setting, with setter (s)	3.2 ÷ 199.9 (pitch of 0.1, accuracy of ± 0.05)
Total fuze height (mm)	max 133.7
Depth of fuze intrusion (mm)	max 38.2
Muzzle safety (m)	mechanical: min 400 calibers, electronic: min 3 s per firing
Arming during axial acceleration (m/s^2)	20000 ÷ 250000
Rotation (min^{-1})	2000 ÷ 25000
Fuze mass (kg)	0.77
Operating temperature (°C)	-30 ÷ +50

Sloboda

75

FUZES

FUZE UTE M10A1

The fuze UTE M10A1 is intended for assembling artillery timed projectiles (high-explosive, smoke, etc) with a 2"-12UNS-1A thread, for all calibers from 76 to 203 mm.

The fuze is electronic and it is located at the nose.

It possesses time function as well as secondary contact function.

The time setting is wireless with setter (device for time setting and function selection).

The fuze is protected from intended and unintended eletromagnetic interferences.

It is safe in all conditions of transportation, storage and usage.

Action type	timing, secondary contact
Time setting, with setter (s)	3.2 ÷ 199.9 (pitch of 0.1, accuracy of ± 0.05)
Total fuze height (mm)	max 151.6
Depth of fuze intrusion (mm)	max 56.1
Muzzle safety (m)	mechanical: min 400 calibers, electronic: min 3 s per firing
Arming during axial acceleration (m/s^2)	20000 ÷ 250000
Rotation (min^{-1})	2000 ÷ 25000
Fuze mass (kg)	0.82
Operating temperature (°C)	-30 ÷ +50

75

FUZES

FUZE UB M16

The fuze UB M16 is electronic and it is located at the nose.
It possesses proximity function as well as secondary contact-superquick function.
It is intended for assembling artillery high-explosive projectiles from 105 to 155 mm with 2"-12UNS-1A thread.
The proximity action is based on the Doppler effect of radio waves.
The fuze possesses blocking function (active during the last 2.5 seconds of flight).
The flight duration is given with setter (device for time setting and function selection) and the fuze has possibility of setting up levels of sensitivity for the proximity function with the setter.
The fuze is protected from intended and unintended eletromagnetic interferences.
It is safe in all transportation conditions as well as in all conditions of storage and use.

Action type	proximity, secondary contact
Height of proximity action (m)	10 ± 8
Total fuze height (mm)	max 151.6
Depth of fuze intrusion (mm)	max 56.1
Muzzle safety (m)	mechanical: min 400 calibers, electronic: blocking action
Arming during axial acceleration (m/s^2)	20000 ÷ 250000
Rotation (min^{-1})	2000 ÷ 25000
Muzzle velocity (m/s)	max 1100
Fuze mass (kg)	0.825
Operating temperature (°C)	-30 ÷ +50

Sloboda

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FUZES

FUZE UMF M16

The fuze is electronic, located at the nose, multifunctional and it is intended for assembling artillery HE projectiles of calibers from 105 to 155 mm with 2"-12UNS-1A thread.
The selection of fuze action (proximity, timing or superquick) is wireless, with the setter.
The default setting of the fuze is with proximity action (based on the Doppler effect).
The fuze has a possibility of setting up levels of sensitivity for the proximity function.
UMF M16 also possesses a blocking action (it is active during the last 2.5 s of flight).
The fuze is protected from intended and unintended eletromagnetic interferences.
It is safe in all transportation conditions as well as in all conditions of storage and use.

Action type	proximity, timing, superquick impact
Function (action) selection	with setter
Total fuze height (mm)	max 151.6
Depth of fuze intrusion (mm)	max 56.1
Muzzle safety (m)	mechanical: min 400 calibers, electronic: min 3 s per firing
Arming during axial acceleration (m/s^2)	20000 ÷ 250000
Rotation (min^{-1})	2000 ÷ 25000
Muzzle velocity (m/s)	max 1100
Height of proximity action (m)	10 ± 8
Time setting, with setting device (s)	3.2 ÷ 199.9 (pitch of 0.1, accuracy of ± 0.05)
Fuze mass (kg)	0.825
Operating temperature (°C)	-30 ÷ +50

UTIF

The UTIF is an autonomous electronic device intended for time setting and function selection of electronic fuzes UMF M16, UB M16, UTE M10A1 and UTE M10.

It provides:

- *selection and display of function (proximity, time, superquick) and last entered time,*
- *selection and display of time setting when the time function of fuze is selected,*
- *wireless entering of the selected data in the fuze,*
- *wireless reading of the entered data from the fuze.*

Function selection	proximity, time, superquick impact
Entering/reading	wireless
Indication of proper entering/reading	light and sound
Indication of improper entering/reading	light and sound
Power supply	battery of primary type
Nominal battery voltage (V)	3.6
Capacity (Ah)	5.8 (1000 cycles of entering)
Time setting, using device (s)	3.2 ÷ 199.9 (pitch of 0.1, accuracy of ± 0.05)
Device mass (kg)	0.6
Operating temperature (°C)	-30 ÷ +50

Sloboda

75

GUN PRIMERS

GUN PRIMER KT M28A2

The gun primer KT M28A2 is intended for initiating the propellant charge M2 assembled into the cartridge case 105 mm M14 and is used for 105 mm HE M1, 105 mm WP M60 and 105 mm ILL M314A4 rounds.

The gun primer is made of brass, with holes for igniting the propellant charge (black powder N°1).

It is activated by the strike of the firing pin.

The gun primer is airtight and safe in all conditions of transportation, storage and usage.

Primer type	percussion, mechanical
Minimum conditions for action (J)	1.121
Mean working pressure of powder gases (bar)	2305
Gun primer height (mm)	max 260.6
Primer rim diameter (mm)	Ø15.75
Primer diameter, where it is pressed into the cartridge case (mm)	Ø14.071
Powder	black powder N°1
Powder mass (g)	19.4
Primer mass (g)	140
Operating temperature (°C)	-30 ÷ +50

75

GUN PRIMERS

GUN PRIMER KT M28P1

The gun primer KT M28P1 is intended for initiating the propellant charge M2 assembled in the cartridge case 105 mm M10 (cartridge case 105 mm M14 with thread) and is used with the round 105 mm HE M1, 105 mm WP M60 and 105 mm ILL M314A4.

It is made of brass with holes for initiating the propellant charge (black powder N°1).

The primer is activated by the strike of the firing pin.

The primer is airtight and safe in any type of transportation, storage and usage.

Primer type	percussion, mechanical
Minimal conditions for action (J)	1.121
Mean operating pressure of powder gases (bar)	2305
Primer height (mm)	max 260.6
Diameter of primer rim (mm)	Ø20
Thread	SpW 5/8" - 18 2A
Powder	black powder N°1
Powder mass (g)	19.4
Primer mass (g)	140
Operating temperature (°C)	-30 ÷ +50

Sloboda

75

GUN PRIMERS

GUN PRIMER KT M82P2

The gun primer KT M82P2 is intended for assembling 155 mm ammunition, without the cartridge case, for self-propelled gun-howitzer NORA-B52 M15 and for initiating the propellant charge, as well as for other 155 mm arms.

The primer is made of brass.

Before the firing, it is placed into the firing mechanism's stock in the breech block out of which it is, durign the firing, automatically driven into the primer bearing, in which the ignition of the primer is being performed.

The primer is activated by the strike of the firing pin.

It is water-resistant and safe in all conditions of transportation, storage and usage.

Primer type	percussion, mechanical
Minimum energy needed for activation (J)	1.04
Maximum energy needed for non-activation (J)	0.29
Maximum pressure of powder gasses (bar)	< 3500
Primer height (mm)	max 49.8
Primer diameter (mm)	Ø15.15
Powder	black powder N°7
Powder mass (g)	1.4
Primer mass (g)	33
Operating temperature (°C)	-30 ÷ +50

75

GUN PRIMERS

GUN PRIMER KT M71

The gun primer KT M71 is intended for initiating the propellant charge of ammunition in calibers:

- *57 mm, for antiaircraft gun S-60,*
- *76 mm, for mountain gun M48 B-1 and gun M42 (ZIS-3),*
- *85 mm, for antiaircraft gun M39/42 or M39/44,*
- *100 mm, for gun D-10 and antitank gun T-12,*
- *122 mm, for howitzer D-30 and M38,*
- *130 mm, for gun M46,*
- *152 mm, for gun-howitzer D-20 and M37.*

The primer is airtight and safe in all conditions of transportation, storage and use.

Primer type	percussion
Minimal conditions for action - impact energy (J)	2.065
Primer height (mm)	max 23.9
Primer diameter (mm)	max Ø30
Thread	SpW 27.178 x 14 pitches
Powder	black powder N°7
Powder mass (g)	2
Primer mass (g)	85
Operating temperature (°C)	-30 ÷ +50

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GUN PRIMERS

GUN PRIMER KT-EU M84

The gun primer KT-EU M84 is electro-percussion and it is intended for initiating of base propellant charge M88 which is introduced into the ammunition 125 mm for 125 mm gun on the tank M84 or T-72.

The gun primer is airtight and safe in all conditions of transportation, storage and usage.

Primer type	electro-percussion
Minimum conditions for action - impact energy (J)	2.1
Voltage and time of action of the current pulse (V/s)	20/0.004
Electrical resistance of the circuit (Ω)	1 ÷ 3.6
Primer height (mm)	max 24
Primer diameter (mm)	max Ø30
Thread (mm)	SpW 27.178 x 14 pitches
Powder	black powder N°7
Powder mass (g)	1.35
Primer mass (g)	85
Operating temperature (°C)	-30 ÷ +50

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GUN PRIMERS

GUN PRIMER KT M1

The gun primer KT M1 is intended for initiating the propellant charge BLANK (SALUTE) assembled in the cartridge case 105 mm SALUTE and is used with 105 mm BLANK (SALUTE) rounds.

It is also intended for assembling the ammunition for antiaircraft guns 40 mm.

The primer is made of brass, with holes for igniting the powder charge (black powder N°1).

It is activated by the strike of the firing pin.

The primer is airtight and safe in all conditions of transportation, storage and usage.

Primer type	percussion, mechanical
Minimal conditions for action (J)	1.121
Primer height (mm)	max 94.24
Diameter of primer rim (mm)	Ø15.75
Primer diameter, where it is pressed into the cartridge case (mm)	Ø14.071
Powder	black powder N°1
Powder mass (g)	6.3
Primer mass (g)	69
Operating temperature (°C)	-30 ÷ +50

Sloboda

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GUN PRIMERS

GUN PRIMER KT M02

The gun primer KT M02 is intended for initiating the variable propellant charge M15 and the full propellant charge M15 assembled in the cartridge case 105 mm M14 and is used for 105 mm HE ER-BT M15 round and 105 mm HE ER-BB M15 round.

It is made of brass, with holes for igniting the propellant charge (black powder N°1).

It is assembled by pressing into the cartridge case 105 mm M14.

It is activated by the strike of the firing pin.

The gun primer is airtight and safe in all conditions of transportation, storage and usage.

Primer type	percussion, mechanical
Minimum conditions for action (J)	1.121
Mean working pressure of powder gases (bar)	2650
Primer height (mm)	max 290
Primer rim diameter (mm)	Ø15.75
Primer diameter, where it is pressed into the cartridge case (mm)	Ø14.071
Powder	black powder N°1
Powder mass (g)	23.6
Primer mass (g)	155
Operating temperature (°C)	-30 ÷ +50