



BOMB TECHS WITHOUT BORDERS
ВИБУХОТЕХНІКИ БЕЗ КОРДОНІВ



Chemical Agents and Munitions Encountered in Ukraine

Version 1.0 (31.01.2024)

Chemical Agent: CS (O-chlorobenzylidene malononitrile)			
Persistency: Semi-persistent		Duration of Persistency: approximately an hour to several days, depending on concentration and environment	
Appearance	Form	Color	Odor
	• Powder • Aerosol • Gas/smoke	• Powder - White crystalline • Gas/smoke – colorless or white	• pungent • “peppery”
Decontamination	Eyes	Skin	Equipment
	• Water	• Water • Soap and water	• Water • Soap and water
Expected Effects on Personnel	Light Exposure (Light Concentrations or Open Air)		Heavy Exposure (Heavy Concentrations or Confined Spaces)
	• Temporary burning sensation in eyes • Copious tears • Difficult to open eyes • Temporary irritation to skin • Running nose • Burning sensation in nose and throat • Mild to profuse coughing • Triggering of existing respiratory conditions such as asthma.		• Temporary burning sensation in eyes • Copious tears • Difficult to open eyes • Long-lasting irritation and burning sensation to skin • Running nose • Burning sensation in nose and throat • Severe coughing • Vomiting
Self-aid	• Don protective mask • Remove self from area and move upwind • Decontaminate once source of chemical agent is removed in order to alleviate symptoms faster		• Don protective mask • Remove self from area and move upwind • Vent the enclosed space (open window or vent) if unable to leave • Decontaminate once source of chemical agent is removed in order to alleviate symptoms faster
First Aid	• Assist casualty with donning protective mask • Move the casualty to fresh air • Decontaminate casualty once source of chemical agent is removed in order to alleviate symptoms faster • Further treatment related to exposure is normally not required.		• Assist casualty with donning protective mask • Move the casualty to fresh air • Decontaminate casualty once source of chemical agent is removed in order to alleviate symptoms faster • If symptoms persist after decontamination, seek medical attention.
Notes: CS is commonly the agent referred to when a munition is labeled “riot control” or “irritant”. It has replaced most older, more toxic riot control agents such as CN.			



BOMB TECHS WITHOUT BORDERS
ВИБУХОТЕХНІКИ БЕЗ КОРДОНІВ



Chemical Agent: CN (Chloroacetophenone, 2-Chloroacetophenone)			
Persistency: Semi-persistent		Duration of Persistency: approximately an hour to several days, depending on concentration and environment	
Appearance	Form	Color	Odor
	• Powder • Aerosol • Gas/smoke	• Powder - White crystalline • Gas/smoke – bluish-white	• Apple blossoms • “flowery”
Decontamination	Eyes	Skin	Equipment
	• Water	• Water • Soap and water	• Water • Soap and water
Expected Effects on Personnel	Light Exposure (Light Concentrations or Open Air)		Heavy Exposure (Heavy Concentrations or Confined Spaces)
	• Temporary burning sensation in eyes • Copious tears • Difficult to open eyes • Temporary irritation to skin • Running nose • Burning sensation in nose and throat • Mild to profuse coughing • Triggering of existing respiratory conditions such as asthma.		• Temporary burning sensation in eyes • Copious tears • Difficult to open eyes • Swelling of eyes • Extreme sensitivity to light • Long-lasting irritation and burning sensation to skin, possible blisters. • Running nose • Burning sensation in nose and throat • Vomiting • Severe coughing • Pulmonary edema (fluid in lungs)
Self-aid	• Don protective mask • Remove self from area and move upwind • Decontaminate once source of chemical agent is removed in order to alleviate symptoms faster		• Don protective mask • Remove self from area and move upwind • Vent the enclosed space (open window or vent) if unable to leave • Decontaminate once source of chemical agent is removed in order to alleviate symptoms faster
	• Assist casualty with donning protective mask • Move the casualty to fresh air • Decontaminate casualty once source of chemical agent is removed in order to alleviate symptoms faster • Further treatment related to exposure is normally not required.		• Assist casualty with donning protective mask • Move the casualty to fresh air • Decontaminate casualty once source of chemical agent is removed in order to alleviate symptoms faster • If symptoms persist after decontamination, seek medical
Notes: Considered less effective but more toxic than CS – higher amounts are needed to produce the same effects, but effects may last longer and are more likely to require treatment. Some symptoms, such as coughing and pulmonary edema, may develop up to 24 hours after exposure. Additionally, headaches and mental depression may appear as late effects of CN exposure.			



BOMB TECHS WITHOUT BORDERS
ВИБУХОТЕХНІКИ БЕЗ КОРДОНІВ



K-51 Gas Grenade	Country of Manufacture: russia
Category: Hand Grenade Drone-dropped Munition	Action: Burning
	Fuze: K-510 (3 sec delay)



Type of Chemical Filler: CS	Weight of Chemical Filler: UNK	Explosive Weight: UNK
Diameter: 51mm	Height/Length Without Fuze: UNK	Height/Length With Fuze: 130mm
Notes: Body of the grenade is made of white plastic. Once initiated and burning, the CS agent vents from the bottom of the grenade body.		



RG-60AZ "Dreif-2" Gas Grenade	Country of Manufacture: russia
Category: Hand Grenade Drone-dropped Munition	Action: Bursting
	Fuze: U-517M (4 sec delay)

Type of Chemical Filler: Riot-control/irritant	Weight of Chemical Filler: UNK	Explosive Weight: UNK
Diameter: 60mm	Height/Length Without Fuze: UNK	Height/Length With Fuze: 175mm
Notes: The russians also manufacture a version with black-colored body and white writing, but this is not yet confirmed to be in Ukraine. Exact chemical filler is unconfirmed but believed to be CS or similar.		



BOMB TECHS WITHOUT BORDERS
ВИБУХОТЕХНІКИ БЕЗ КОРДОНІВ



RGR Irritant Grenade	Country of Manufacture: russia
Category: Hand Grenade Drone-dropped Munition	Action: Burning (approximately 14 sec)
	Fuze: U-517M (4 sec delay)



Type of Chemical Filler: CS	Weight of Chemical Filler: UNK	Explosive Weight: UNK
Diameter: 60mm	Height/Length Without Fuze: UNK	Height/Length With Fuze: 175mm
Notes:		



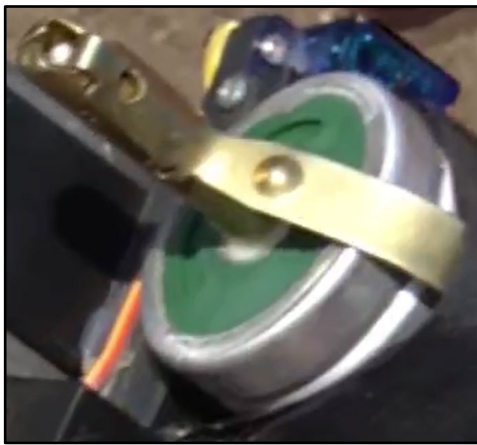
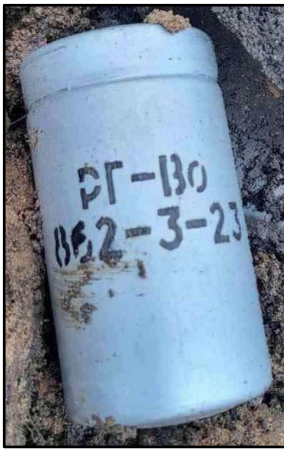
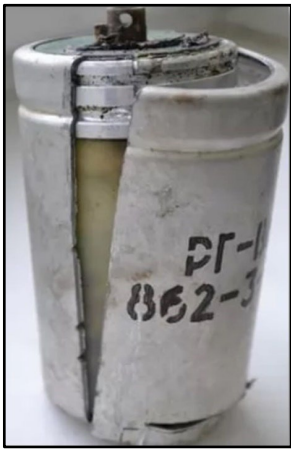
Teren-6 Lachrymatory and Irritant Grenade		Country of Manufacture: Ukraine
Category: Hand Grenade Drone-dropped Munition		Action: Bursting
		Fuze: UNK model (2.5-3.5 sec delay)
Type of Chemical Filler: CS	Weight of Chemical Filler: ~45g	Explosive Weight: UNK
Diameter: 61mm	Height/Length Without Fuze: 145mm	Height/Length With Fuze: 185mm
Notes:		



RGK-60KD Combined Effect Cluster Hand Grenade	Country of Manufacture: russia
Category: Hand Grenade Drone-dropped Munition	Action: Bursting
	Fuze: UNK



Type of Chemical Filler: CS	Weight of Chemical Filler: UNK	Explosive Weight: UNK
Diameter: 58mm	Height/Length Without Fuze: UNK	Height/Length With Fuze: 173mm
Notes: Contains 4 flashbang and 3 irritant elements.		



RG-Vo Gas Grenade		Country of Manufacture: russia	
Category: Hand Grenade Drone-dropped Munition		Action: Burning	
		Fuze: UNK	
Type of Chemical Filler: CN	Weight of Chemical Filler: UNK		Explosive Weight: UNK
Diameter: UNK	Height/Length Without Fuze: UNK		Height/Length With Fuze: UNK
Notes: A similar-looking grenade with red top, instead of green, is also manufactured by Russia. It is believed to be incendiary (thermite).			



BOMB TECHS WITHOUT BORDERS
ВИБУХОТЕХНІКИ БЕЗ КОРДОНІВ



Drofa-PM Flashbang and Irritant Grenade	Country of Manufacture: russia
Category: Hand Grenade Drone-dropped Munition	Action: Bursting
	Fuze: UNK



Type of Chemical Filler: Riot-control/irritant	Weight of Chemical Filler: UNK	Explosive Weight: UNK
Diameter: 64mm	Height/Length Without Fuze: UNK	Height/Length With Fuze: 214mm
Notes: Contains 4 flashbang and 3 irritant elements.		

43mm VGM93.200	Country of Manufacture: russia
Category: Hand Grenade Projected Grenade	Action: Burning (up to 15 sec)
	Fuze: UNK, 5.5-6.5 sec delay



Type of Chemical Filler: CS	Weight of Chemical Filler: 12 grams	Explosive Weight: UNK
Diameter: 43mm	Height/Length Without Fuze: N/A	Height/Length With Fuze: 120mm
Notes: These hand grenades can be fired from the AWGŁ-3, RWGŁ-1 and RWGŁ-3 launchers, but these launchers are not yet confirmed to be in Ukraine.		



BOMB TECHS WITHOUT BORDERS
ВИБУХОТЕХНІКИ БЕЗ КОРДОНІВ



UGŁ-200 and UGŁ-200/1 Gas Grenades		Country of Manufacture: Poland	
Category: Hand Grenade Projected Grenade		Action: Burning (minimum 7 sec)	
		Fuze: UNK (3-6 sec delay)	
Type of Chemical Filler: CN	Weight of Chemical Filler: 195-205 grams		Explosive Weight: UNK
Diameter: ~51mm	Height/Length Without Fuze: N/A		Height/Length With Fuze: ~195mm
Notes: These hand grenades can be fired from the AWGŁ-3, RWGŁ-1 and RWGŁ-3 launchers, but these launchers are not yet confirmed to be in Ukraine.			