

Mab

Fire extinguisher hand grenade 500 ml



FLAMARK®
wins over fire

1. Preface, general statements

Most fires can be stopped if reaction to fire is fast enough, which means, in the initial stage of fire. Quick reaction is the most important matter in fire fighting. Classical, heavy weight fire extinguishers, with complicated handling and activating, which requires reading of long manual, seldom can help to quick reactions. Therefore it is most important to always have at hand one fire extinguisher which is so easy to activate and use, that it provides immediate response and have great extinguishing power along with ecologically features.

Mab fire extinguisher hand grenade meets all this demands and even more.

Mab fire extinguisher hand grenade can also be used for extinguishing of advanced fires, but then it is recommended to dilute hand grenades content in the water with ratio of 1:16 (content of one Mab fire extinguisher hand grenade in ca 8 liters of water).

• *Easy to place and access*

Mab fire extinguisher hand grenade is ready to use extinguisher, designed and intended for use in households, offices, storages, cars, caravans, boats, and other vehicles. It is small (diameter 65 mm, height 198 mm, and can be easily stored at suitable place or fixed by a holder at a significant place, text near to first-aid kit.

• *Instantly usable*

Mab fire extinguisher hand grenade does not require any preparation for use. It just takes and throws in the direction of the roots of fire or solid surface above the root of the fire. Use is mostly intuitive, so operation errors are virtually impossible.

• *Easy to use and maintain*

Mab fire extinguisher hand grenade delivers professional extinguishing technology to non-experts, but it is also used by professional firemen. And especially important, it can be used by child, very old persons and disabled persons. Periodic maintenance or surveillance is unnecessary. Products lifetime and warranty is 5 years from date of production.

• *Safe to use*

Mab fire extinguisher hand grenade can be thrown from safe distance, so fire can be extinguished without any danger to the involved persons, which is especially

important when extinguishing electric installations and devices.

Mab fire extinguisher hand grenade heavily eliminates smoke in area of extinguishing, so if there are any persons in the room, they can breathe without problems.

• *Great extinguishing power and wide scope of operation*

Thanks to its extinguishing agents and extinguishing techniques, Mab fire extinguisher hand grenade, works with great efficiency when extinguishing starting fires, but also when extinguishing large fires.

Mabo fire extinguishing liquid agent forming the protecting thin layer at surface of a burning area, which does not aloud re-ignition.

Furthermore it has wide scope of operation – it extinguishes fires of classes: A, B and C, and fires on electrical installations and devices. So it is not necessary to purchase different fire extinguishers for different kinds of fires.

• *No collateral damages*

There are no any side effects or significant collateral damages for the persons or for the rooms when Mab fire extinguisher hand grenade operates.

• *Eco-friend product*

Mab fire extinguisher hand grenade is an Eco-friend product, which means that it is not toxic or harmful for people, animals, ozone layer or environment, and its content and packaging is easily recyclable and biodegradable. Most of the ingredients are completely natural.

It is suitable for use in natural parks, water intake areas for drinking water, drinking water plants and other nature or water protected areas.



2. Specification

Extinguishing power of Mab fire extinguisher hand grenade for solid – fire class A (wood, paper, textiles...) and liquid substances – fire class B (gasoline, diesel fuel ...) as well as for flammable gases – fire class C, was widely proved in practice in different situations. Fire classification A, B and C, according to EN2:1992 + A1 2004 and EN3-7:2004 + A1 2007.

Mab fire extinguisher hand grenade can be used to extinguish fire at live electrical equipment with voltages up to 1000 Volts if the minimum distance for operator of 1 m is maintained.

3. Technical Data

Diameter:	_____	65 mm
Height:	_____	198 mm
Weight approx.:	_____	500 g
Total volume:	_____	550 ml
Volume (net):	_____	500 ml
Container material:	_____	resin plastics
Extinguishing agent:	_____	Fire extinguishing liquid agent Mab
Extinguishing fire classes:	__	A, B and C
Storage Temperature:	_____	-20 °C to 70 °C
Minimum durability:	_____	5 years
Production date:	_____	Printed at declaration sticker on plastic container

4. Description of function

Extinguishing agent is released by throwing Mab fire extinguisher hand grenade into the fire or by throwing a water solution of content of Mab fire extinguisher hand grenade into the fire.

5. Mode of functioning

Active fire extinguishing agent is water based liquid agent enriched by chemical compounds which removes or blocks the 3 basic fire triangle elements: heat – oxygen – fuel. Mab active liquid saponified the burning fuel, so reignite becomes impossible.

Mab fire fighting mechanisms activates and removes the 3 basic fire triangle elements (Heat – Oxygen – Fuel):

- Mab liquid droplets evaporations process removes heat.
- Mab Inert Steam creating lack of oxygen supply to fuel but in same time the oxygen is not removed for people (operators).
- Mab liquid agent saponifies the burning fuel (surface protecting film is created) and does not allow free radicals and gases to become airborne and bond with oxygen in air.

Detailed description of the action:

A. Rapid cooling down effect – here the liquid droplets cool burning material by rapidly absorbing heat from burning material, turns to inert steam and evaporates.

B. Inert steam – it bounds free burning radicals and toxic gases with Mab Inert Steam, so if there are any persons in the area, they can breathe without problems. That way creates an operator friendly environment, which is especially important effect.

C. Adiabatic cooling process – demonstrate unique effective process which is cooling the air by evaporation of Mab liquid agent. Evaporation is the process by which Mab liquid agent is quickly converted from liquid form to its vaporized form, transferring its liquid mass to the atmosphere and removing heated air away from burning materials. During Mab liquid solutions droplets evaporations, three simultaneous processes are going on:

- Transfer of heat to the Mab liquid droplet surface.
- Transfer of liquid mass from the Mab droplet surface.
- Mab droplets liquid mass with heat becomes airborne steam (effect name: Latent heat of evaporation, which we meet every day in nature: sun-rain-sun).

D. Saponification-Foaming process – Mab liquid agent possesses strong controlled chemical and mechanical processes of forming the protecting thin layer at surface of a burning fuel, which does not allow re-ignition. Mab liquid agent, through mechanical dispersion, mixes large amount of inner gases with liquid, and by the agitation of liquid and inner chemical compounds creates a type of foam similar to the agitation of seawater (Ocean foam) derived from surface to offshore breakdown. Mab liquid agent chemical compounds act as surfactants to lower the surface tension between two liquids, to create protecting thin layer and prevent re-ignition of fuel.

6. Application areas

Mab fire extinguisher hand grenade uses for extinguishing of solids – fire class A (wood, paper, textiles...) and liquids – fire class B (gasoline, diesel fuel ...) as well as for flammable gases – fire class C.

Cooling effect of Mab fire extinguisher hand grenade can be used to cool surfaces and protect from fire, some valuable items, which are not yet affected by fire.

7. Operation

Mab fire extinguisher hand grenade does not require any preparation for use. It just takes and throws in the direction of the roots of fire or solid surface above the root of the fire. Then the grenade bursts and Mab liquid agent extinguishes the fire.

In a case of advanced fire it is recommended to dilute hand grenades content in the water with ratio of 1:16 (content of one Mab fire extinguisher hand grenade in ca 8 liters of water), and then throw the solution in the direction of the roots of fire, which extinguishes the fire. In that case some smaller collateral damages are possible.

8. Storage

Mab fire extinguisher hand grenade should be stored at a temperature between -20 °C and +70 °C. It should be protected against direct sunbeams.

The fire extinguisher should be stored at a dry place, easy to access.

9. Maintenance

Special maintenance or surveillance is not required. The minimal product lifetime is five years from the date of production.

10. Execution and delivery

Mab fire extinguisher hand grenade is designed and delivered in a simple 500 ml biodegradable plastic container, with a screw cap (for the case if content must be diluted in water).

11. Article packing

Article no.	Product - description	Quantity of units	Approximate dimension (L x W x H)	Approximate cube	Approximate shipping weight
M501	Mab – fire extinguishing grenade - Single unit	1	7,9 x 7,9 x 23,3 cm	-	0,5 kg (1.1 lb)
M502	Mab – fire extinguishing grenade - Cardboard	15	40 x 25 x 24 cm	0,024 m ³	12,5 kg (27,5 lb)
M511	Mab – fire extinguishing grenade - Euro Palette	540	120 x 80 x 110,4 cm	1.060 m ³	475 kg (1047,20 lb)

5
years

Certificate of Warranty



12. Miscellaneous

You can watch Mab fire extinguisher hand grenade in action in a video at web address: www.flamark-international.com



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