

JSC “Cheboksary Production Association n.a. V.I. Chapaev”
invites you to cooperation

**Fire extinguishing
aerosol
generators**



JSC “Cheboksary Production Association n.a. V.I. Chapaev”



Multi-industry production association
producing about **1000** names of various kinds of products

Eighty-year experience and good reputation in industrial markets, the quality management system meets international standards

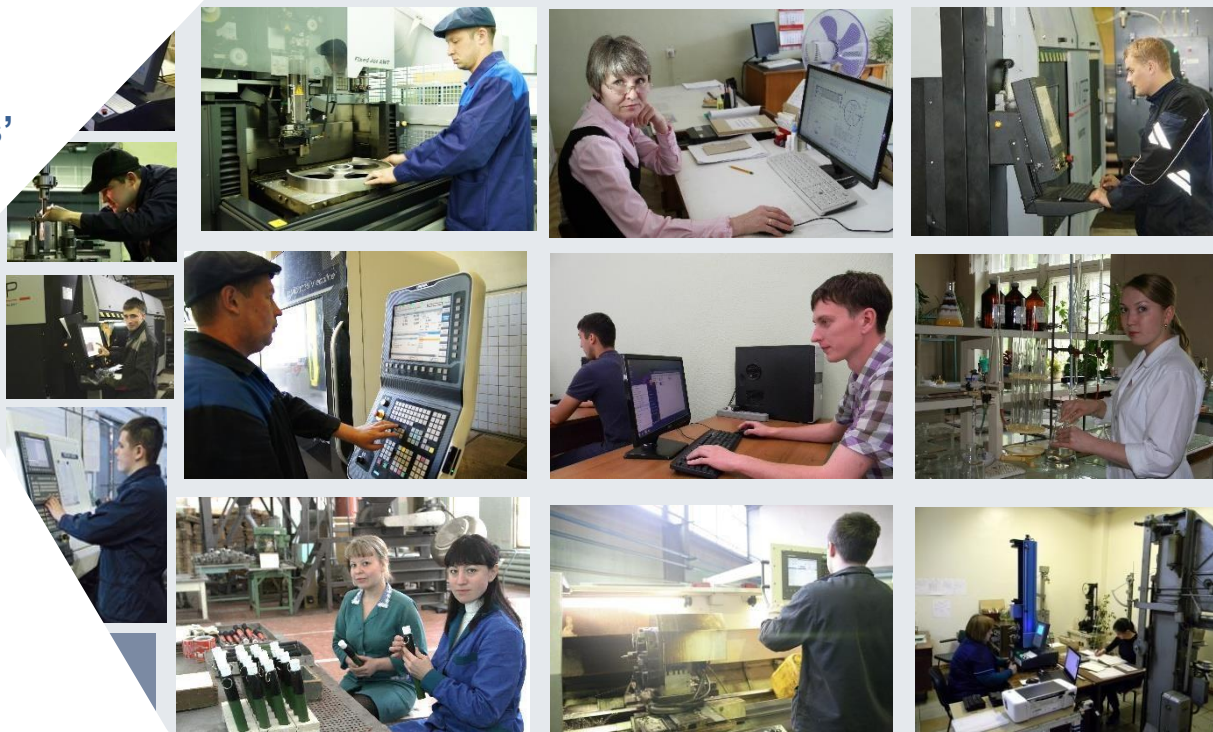
The annual turnover of capital is more than **5** milliard rubles



JSC "Cheboksary production association n.a. V.I. Chapaev" Highly developed production infrastructure and unique technologies

More than **2300** top-class specialists of high level work at orders for various branches of industry and agriculture, development, state institutions and corporations, ensuring the state security.

The whole complex of many years' experience, unique technology competences, and following modern trends is the main pledge of the association reliability.





JSC «Cheboksary Production Association n.a. V.I. Chapaev» 20 years of successful work in the market of fire extinguishing means.

**One of long-term tendencies of the multi-industry association is
production of manual and stationary generators of
aerosol fire extinguishing,
which are designed for operational application by
liquidation fire of «A», «B», «C», «E» classes in
conditionally hermetic rooms.**

**In contrast to our competitors the company has
its own production of aerosol charges
to make aerosol fire extinguishing generators.**

**Experience and high professional skill of the engineers
and other technical workers of the company
allow to perform development and introduction of new
long-term technologies, enhance parameters and consumer's
qualities of production in accordance with modern market
demands.**



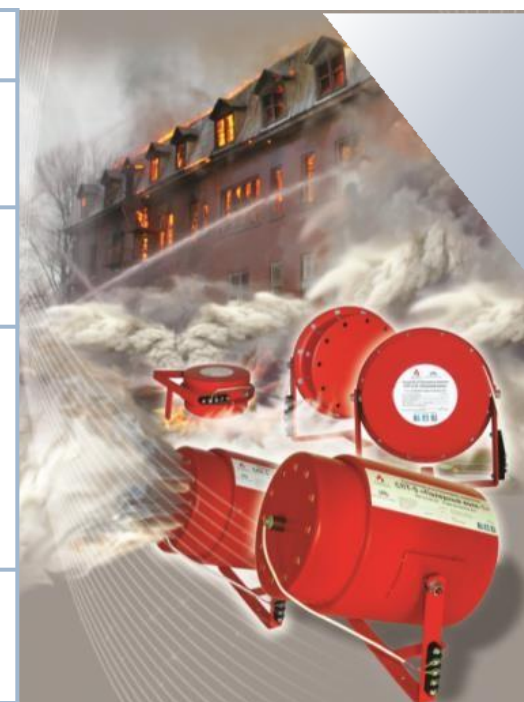


Aerosol generators are one of the most effective and long-term means of fire extinguishing

The process of fire extinguishing using fire extinguishing aerosol consists of inhibiting (deceleration and retardation) of the burning chemical reaction in the flame zone with gradual decreasing heat producing in the fire center and temperature in the gas medium volume.

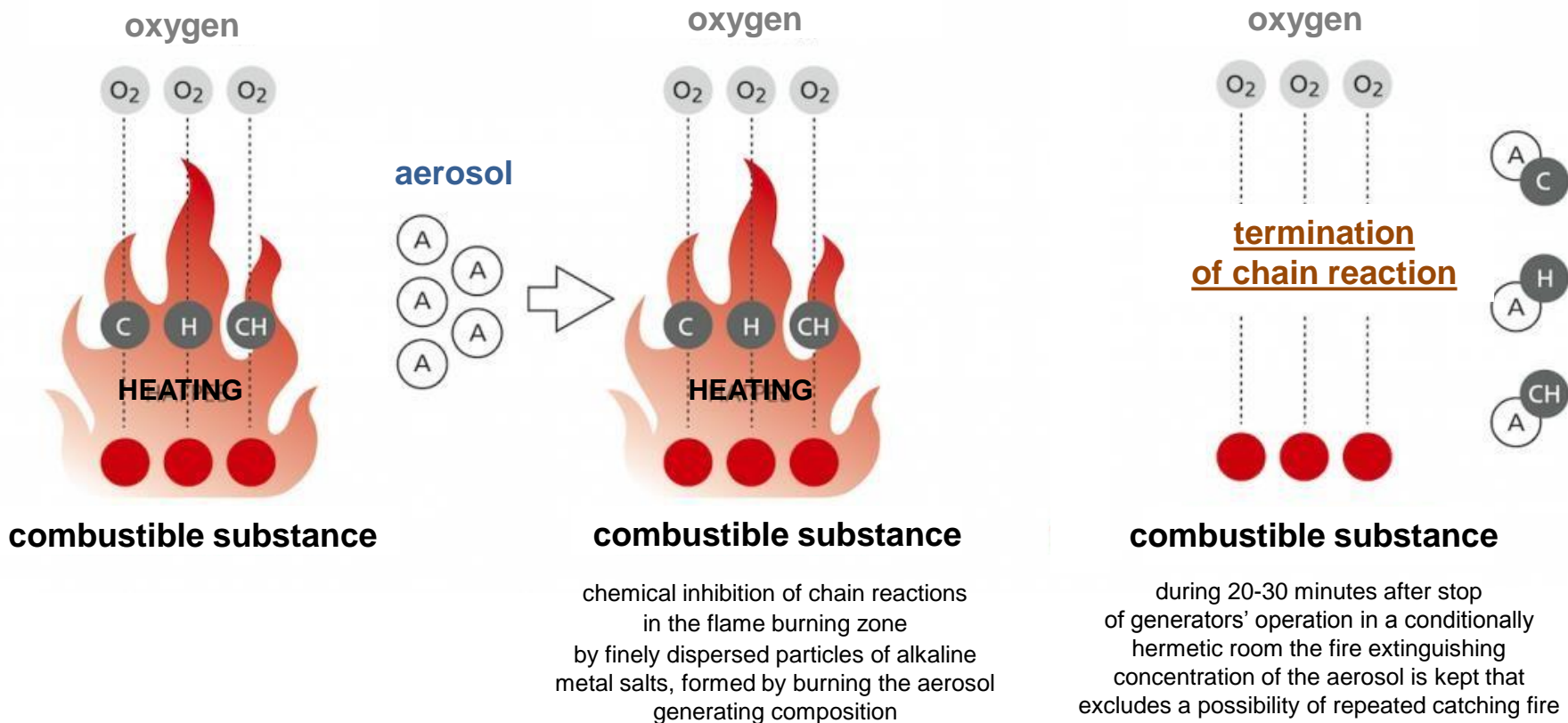
Table to compare parameters of aerosol and gas compositions used by volume fire extinguishing

	Aerosol	Gas		
		Carbonic acid CO ₂	Cooling agents	Inert gas
Fire extinguishing concentration, kg/m ³	0,055 – 0,075	0,6 – 0,7	0,22 – 0,37	0,6 – 0,8
Volume of hermetic room, protected by 1 kg of fire extinguishing medium, m ³	17 – 25	1,25 – 1,7	2,7 – 4,5	0,25 – 1,7
Operation temperature + / - °C	-55 / +60	-35 / +50	-50 / +50	-50 / +50





Principle of operation of aerosol fire extinguishing systems





Aerosol fire extinguishing systems have a series of advantages in the segment of volume fire extinguishing

Fire extinguishing means	Influence on human being	Influence on property	Influence on environment	Protection cost of 100 square meters, thousand of rubles	Rating of attraction according to expert estimation
Aerosol	Can be used in the human being presence at allowable concentrations and by observance of precautionary measures	Does no harm	Safe for environment (does not destroy the ozone layer)	20-35	8
Powder	Exert direct inhalation influence	Are forbidden in rooms with systems of anti-smoke ventilation	Safe	20-35	8
Water, fine sprayed water, and foam	Special means of protection are needed	Causes property damages, corrosion of metal parts, and failure of electronic devices	Sediment is difficult to remove, the foam is poisonous	Water: 70-100 Foam: 50-80	6
Carbonic acid, CO₂	At fire extinguishing concentration is very dangerous for human beings	The condensate being created may damage electronic devices	Exhaust of CO₂ by fire extinguishing is much more than exhaust from other sources	From 180	7
Inert gases	Can cause breach of supplying brain with oxygen	No harm	No harm	From 180	7
Cooling agents	Are forbidden to apply in human being presence	No harm	Dangerous	From 180	5



The main advantages of aerosol generators before conventional means of fire extinguishing:







- long lifetime (up to 10 years)
- they can operate in temperature range from - 50°C to +50°C with air relative humidity up to 95%
- they keep capacity for work by condition of vibration
- they are safe for environment
- they are not toxic which decreases to a considerable extent the risk of poisoning personnel by fire extinguishing
- they are chemically neutral
- they do not require re-charging
- they do not damage property. Vapor flows form a film on the surface of things which is impenetrable for fire. The film is erased effectively by usual cleaning means





JSC "Cheboksary production association n.a. V.I. Chapaev" Model line of aerosol fire extinguishing generators

The line of aerosol volume fire extinguishing means is developed and applied in industry.

Manual devices of aerosol fire extinguishing		Portable generator	Generators of fire extinguishing aerosol		
"Strazhnik-3"	"Strazhnik-4"	GPTA-30N	GPTA-65N	GPTA-65E	GPTA-300
					
Conditionally hermetic protected volume, cubic meters					
1.5	6	42	84	84	300
Working time, s					
65-85	35	30-35	30-35	30-35	180

Generators of fire extinguishing aerosol consist of hard aerosol creating charge, which is put into metal housing equipped with a cooling system and a starting unit.



Application of aerosol fire extinguishing generators



For localization and liquidation of burning:



**hard substances and materials (class A),
hard substances which burn without
smoldering (subclass A2)**



**highly inflammable and combustible liquids
(class B)**



**fire (catching fire) by highly inflammable and
combustible liquids at the initial stage and
developed fire (open burning)**



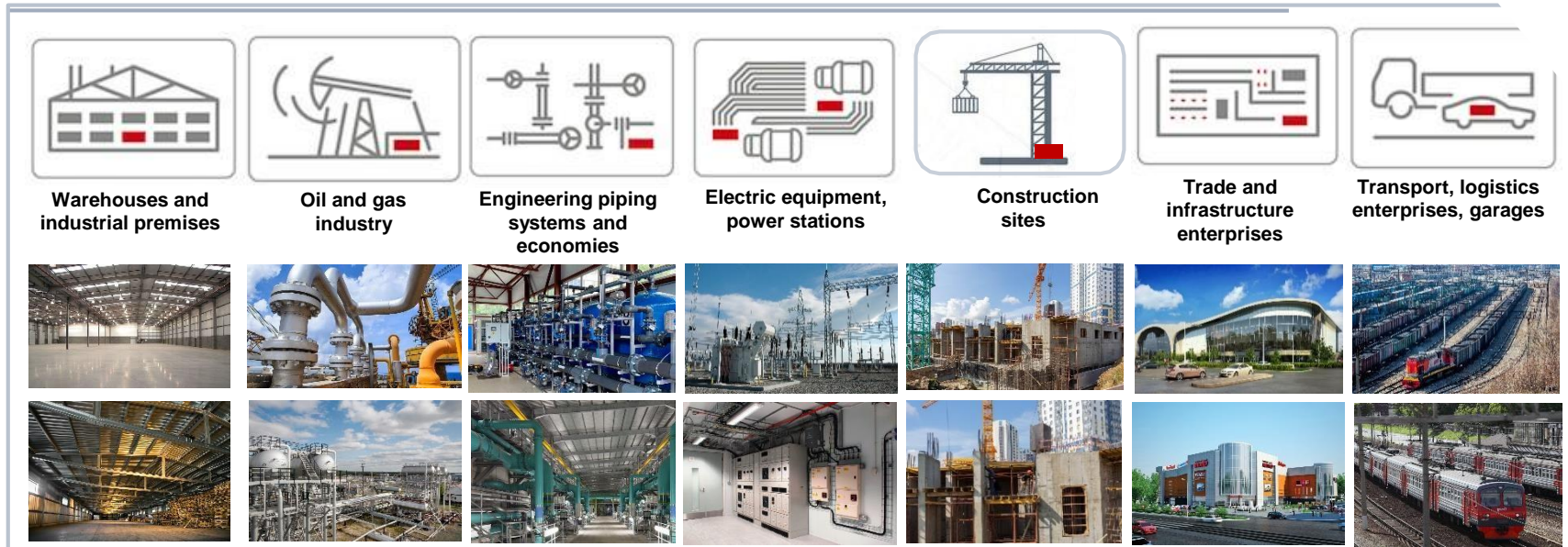
**electric insulating materials and live electric
equipment under voltage up to 40 kV (class
"E")**

in buildings (installations) and at transport units
including moving railroad trains



Application of aerosol fire extinguishing generators

Sites for installation (application)



They apply in extreme conditions,

which make impossible using conventional fire extinguishing means:

- in non-heated premises;
- in premises with wide temperature range (from +50 °C to -50 °C);
- in waterless areas and by other conditions.



Manual devices of aerosol fire extinguishing "Strazhnik"

for efficient application:

- by fire extinguishing of "A" class (subclass "A1" (elimination of burning flame), "A2"), "B", "C", "E" in conditionally hermetic rooms, including live electric installations and electric equipment under voltage up to 35 kV
- for extinguishing local volume and local surface centers of kindling

extinguishing of a switchboard cabinet



They are efficient by liquidation of burning of electric wires, electric cables, plastics, highly inflammable and combustible liquids, non-smoldering materials, and humans' clothes which they wear.

extinguishing a kindling on a human being




Manual devices of aerosol fire extinguishing "Strazhnik"

Applying is performed by directing the jet of fire extinguishing aerosol immediately into the fire center, distributing evenly the aerosol supply on surfaces from distances no closer than 0.2 m.

The case has a rubber grooved handle and a cap for fixing the launcher.



Models and characteristics

Models		"Strazhnik-3"	"Strazhnik-4"
Working time of the device		65 - 85 seconds	35 - 40
Protected volume / area		1.5 m ³ / 0.35 m ²	8 m ³ / 1.5 m ²
Lifetime		10 years	10 years
Operation conditions		from -50 to +50 °C	from -50 to +50 °C
Charge mass, kg		0.085	0.3



It is put in action by manual mechanical friction way; aerosol output is performed along the axis of the generator



Cost. The lowest cost among manual devices of aerosol fire extinguishing.

Safety. They are not harmful to personnel and do not damage equipment.

They are efficient protection means against fire of valuable things (works of art, important documentation, securities, jewels, and money).

They do not create high temperatures and aggressive surroundings in the protected volume.

Fire extinguishing aerosol is extracted into the kindling zone immediately, not increasing concentration of harmful substances in air outside of the protected volume.

They extinguish centers of kindling at early stages of fire, prevent the fire proliferation out of limits of the protected volume.

They have functions of discovering, extinguishing, and notification, and also an independent power supply source.

They are easy in operation. They are easy compatible with standard systems of fire alarm signaling and automated fire extinguishing.

They are reliable. They exclude a repeated kindling in the protected volume during a tangible period of time (up to 0.5 hour), thanks to the phlegmatization (oxygen reduction).

They have a wide temperature range of operation.

They are easy and compact. They are compact, power independent, and do not demand maintenance.

Advantages of manual aerosol fire extinguishing generators "Strazhnik"





Fire extinguishing aerosol generators of operative application

GPTA-30N, GPTA-65N

are designed for localization and extinguishing of developed fires of hard combustible materials, highly inflammable and combustible liquids, electric insulating materials and electric equipment in closed conditionally hermetic rooms, including those at rolling-stock of railway transport (electric trains and Diesel trains, locomotives, special and passenger carriages).

Application of the generator is performed by the way of throwing the product immediately into the center of the developing fire.

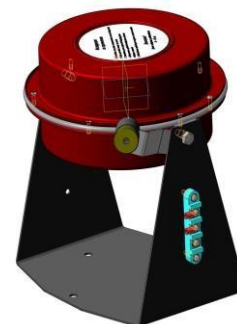


Models	GPTA-30N	GPTA-65N
Starting unit	pricking	pricking
Mass of the equipped generator, kg	3.72	5.98
Mass of the aerosol generating composition in the equipped generator, kg	1.9±0.1	3.8±0.1
Maximum protected volume, m ³	42	84
Time of supplying fire extinguishing aerosol by temperature (25±10)°C, s	29±4	29±4
Time of supplying fire extinguishing aerosol in the whole range of operation temperature, s	23 ÷ 40	23 ÷ 40
Delay time of the generator snapping into action after its putting in operation by temperature (25±10)°C, s	9±1.8	9±1.8
Delay time of the generator snapping into action after its putting in operation in the whole range of operation temperature, s	6 ÷ 12	6 ÷ 12
Overall dimensions (without the bracket and the handle), mm: the housing diameter / height / maximum overall dimensions	225 / 108 / 295	225 / 110 / 310



Stationary fire extinguishing aerosol generators – GPTA-65E

Application by liquidation of fires of subclasses A₂ and class B, localization of fires of subclasses A₁, in rooms with cables, live electric installations and electric equipment under voltage up to 40 kV.



Fastening to construction parts is performed using a bracket



Advantages:

Cost. The lowest cost among stationary systems of volume fire extinguishing.

Safe for equipment. It does not cause corrosion.

Simple in operation. It does not require expenses for maintenance. It is installed in protected rooms.

Safe for personnel.

It is not toxic. If personnel is in the room by the generator starting they may leave the room using minimum protection means of breathing organs.

Light and compact. It has the smallest weight among volume fire extinguishing systems. Easy mounting.

	GPTA-65E
Starting unit	electric
Mass of the equipped generator, kg	7.07
Mass of the aerosol generated composition in the equipped generator, kg	3.8±0.1
Maximum protected volume, m ³	84
Time of supplying fire extinguishing aerosol by temperature (25±10)°C, s	29±4
Time of supplying fire extinguishing aerosol in the whole range of operation temperature, s	23 ÷ 40
Delay time of the generator snapping into action after its putting in operation by temperature (25±10)°C, s	9±1.8
Delay time of the generator snapping into action after its putting in operation in the whole range of operation temperature, s	6 ÷ 12
Overall dimensions, mm: the housing diameter / height (with the bracket) / maximum overall dimensions	225 / 270 / 315



Stationary fire extinguishing aerosol generator GPTA-300



They are designed for localization and liquidation of burning:

- hard substances and materials (class A)
- burning without smoldering (subclass A2), highly inflammable and
- combustible liquids (class B), fire (kindling) in initial stage and developed fires (open burning)
- live electric equipment under voltage up to 40 kV (class "E")

The generators do not apply for extinguishing alkaline and alkaline earth metals, and also substances which burn without air access.

Starting unit	electric	Maximum protected volume of conditionally hermetic room, m ³	300
Response time (time of the generator snapping into action) in the whole range of the generator operation temperature, s	no more than 5	Working time, s	180 ± 20
Mass of the equipped generator, kg	27 ± 2.7	Overall dimensions (without the bracket and the ejector), mm: Diameter / length	210 / 470
Mass of the aerosol generated composition in the equipped generator, kg	14.5 ± 0.5	Storing time and lifetime	10 years



Fire extinguishing aerosol generator GPTA-300

- The generators are installed immediately in the protected rooms and provide aerosol supply which is formed from the hard charge.
- Fire extinguishing aerosol goes into the protected room where it is distributed over the volume and put an end to the burning of liquids and materials including live electric equipment.



Method of application:

Fastening to construction parts is performed using the bracket.

The fire extinguishing aerosol output is performed along the generator axis.

Operation conditions:

- operation temperature range from -50 to +50°C
- relative humidity by 25°C, no more than 98%
- mechanical influence 0.5 g in the frequency range up to 35 Hz.



Start of the generator is performed by feeding an electric pulse to the starting unit.

To start the generator the electric starting unit is used. It allows to use the generator in structures of automated installations of aerosol fire extinguishing.

The electric starting unit is installed outside.



We invite you to cooperation

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