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“ALL-RUSSIAN SCIENTIFIC AND RESEARCH INSTITUTE OF FIRE DEFENCE  
OF THE ORDER OF “ZNAK POCHETA” (THE BADGE OF HONOR) OF RUSSIAN  
MINISTRY OF CIVIL DEFENSE, EMERGENCY SITUATIONS, AND NATURAL  
DISASTER CONSEQUENCES LIQUIDATION”  
(FGBU VNIPO MCHS of Russia)

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Seal:  
Istochnik Plus, closed joint stock company

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FGBU VNIPO MCHS of Russia

**RECOMMENDATIONS FOR THE USE AND DESIGN  
OF GAS FIRE-EXTINGUISHING SETS ON BASE OF GGFE TUNGUS**

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## **STATUS OF THE ISSUE**

At present, both in Russia and abroad, a number of facilities equipped with electronic and electrical equipment is growing. Particularly, such objects include rooms with technological process control boards, facilities of telecommunication companies and cellular companies, fixed and mobile railways traffic control systems, server rooms, technological process control posts, etc. In terms of fire danger this kind of objects are characterized with a number of common features, namely:

- The core value is electronic, electrotechnical equipment and communication facilities installed in special cabinets and rooms, which are subject to the protection by means of fire-fighting installations;
- The main source of ignition is electric wiring in boards with electronic, electrotechnical equipment and communication facilities;
- The main fuel load in a room is isolation of electric wiring, combustible material of printed circuit boards in the structure of electronic and electrotechnical equipment, in some cases – combustible materials applied for boards' manufacture, where the equipment is installed.

Russian and foreign experience of fire safety providing of objects considered indicates that the most effective and reliable method of fire protection in this case is means providing gas fire extinguishing. Gaseous fire-extinguishing substances (GFES) do not conduct electricity; do not leave any traces on property protected and do not cause damages, penetrate easily into equipment with complex configuration, and is removed easily by means of ventilating. In case of correct choosing of fire detecting means and algorithm of firefighting set launching, a fire-extinguishing gas can liquidate fire at its initial stage minimizing possible damages

## **1 INTRODUCTION**

1.1 Present technical recommendations determine the field of application and contain main points of gas fire-extinguishing sets projects making for objects of buildings, constructions and equipment of cabinet implementation subject to protection by means of automatical or autonomous firefighting set in accordance with Set of Rules SP 5.13130.2009 requirements.

1.2 GGFE devices have passed fire testings on base of fire testings methods according to GOST R 53280.3.

1.3 GGFE devices are purposed for volumetric extinguishing of fires of A, B, E classes.

1.4 The recommendations are purposed for technical assistance when projects developing with automatical or autonomous firefighting sets on base of GGFE TUNGUS on objects where fire suppression by means of GFES is possible.

1.5 GGFE devices have expert conclusions about GGFE conformity with “Common sanitary-and-epidemiologic and hygienic requirements...”, approved by Customs Union Commission Decision No 299 dated on 28.05.2010.

1.6 Temperature range of GGFE operation is from -30 to +50 °C under relative humidity not more than 95% under temperature 25 °C.

1.7 GGFE devices do not contain ozone depleting substances.

## **2 NORMATIVE AND TECHNICAL REFERENCES**

GOST R 53280.3-2009. Automatical fire-extinguishing sets. Fire-extinguishing substances. Part 3. Gaseous fire-extinguishing substances. Common technical requirements. Tests methods.

GOST 27331-87. Fire engineering. Classification of fires.

SP 5.13130 .2009. Systems of fire defense. Automatical fire-signaling and fire-extinguishing sets. Norms and rules of design.

TU 4854-019-54572789-11. Generator of gas fire extinguishing GGFE-1.0.

TU 4854-021-54572789-12. Generators of gas fire extinguishing.

## **3 TERMS AND DEFINITIONS**

**3.1 Automatical fire-extinguishing set (AFES):** Fire-extinguishing set activated automatically if controlled fire factor(s) exceeds threshold level set in zone protected.

**3.2 Autonomous fire-extinguishing set:** Fire-extinguishing set performing the functions of fire detecting and fire extinguishing independently from external power sources and control systems.

**3.3 Gaseous fire-extinguishing substances (GFES):** Individual chemical compounds or mixture of compounds which are in gaseous or vaporous condition during fire extinguishing and have physicochemical features permitting to create conditions for burning termination.

**3.4 Gas-generating element:** A device for gas generation from a solid propellant composition stored inside it.

**3.5 Generator of gas fire extinguishing (GGFE):** A device for gaseous firefighting substance with set-up parameters obtaining and its supply to the premises protected.

**3.6 GGFE cartridge:** A replaceable element of GGFE which is independent device having functions of activating, gasification, cleaning and GFES emission to a burning zone.

**3.7 Premises nonhermeticity parameter:** A value characterizing numerically the nonhermeticity of premises protected and determined as relation of summary square of permanently open apertures to a volume of premises protected.

**3.8 Coolant tablets:** Cooling material purposed for gas cooling emitting from gas-generating element, release of additional portion of GFES and preliminary gas cleaning from mechanical impurities.

**3.9 Set of volumetric fire extinguishing:** Fire-extinguishing set for medium creation which does not sustain combustion in the volume of premises (construction) protected.

**3.10 Fire-extinguishing set:** A complex of stationary technical means for fire suppression by means of firefighting substance emission.

**3.11 Filter-separator:** A device providing full cleaning of GFES from mechanical impurities.

## **4 FIELD OF APPLICATION**

4.1 Fire-extinguishing sets on base of GGFE TUNGUS are purposed for protection:

- Computers, equipment of technological process automatic control system operating, violation of which has an influence on human safety;
- Communication computers (servers), archives of magnetic carriers, graph plotters, paper print rooms;
- Switchboards, electrical cabinets (including distribution device), situated in premises of F1.1 functional hazard class;
- Archive premises of editions, reports, manuscripts, and other documentation storage of distinct value; small storages;
- Unattended apparatus rooms of base stations of cellular radio communication stations and radio relay stations;
- Special-purpose premises for controlling devices on base of computers of automatical toll centres;
- dispatcher's post premises with automatical system, messages communication centres, distant and close-by homers with radio markers, storages of scenery, and stage properties, inventory and utility storerooms;
- storages of values in banks, pawnshops, and other objects.

4.2 GGFE are not purposed for extinguishing fires of:

- fibrous, friable, porous, and other combustible materials inclined to self-ignition and smoldering inside the volume of a substance (sawdust, cotton, grass meal etc.);
- substances burning of which can occur without air access.

4.3 GGFE devices provide extinguishing of fires in premises by volumetric method by means of lowering of oxygen concentration till the level when a chemical reaction of burning is not possible. Oxygen concentration lowering is provided by GFES necessary amount supply to a zone protected (according to the tests performed one GGFE cartridge provides necessary firefighting concentration in  $1\text{m}^3$  of volume protected). GFES generated by GGFE penetrates easily into object shielded zones. After fire liquidation GFES does not have any harm effect on values protected, and is removed easily by means of ventilating.

## **5 GGFE CONSTRUCTIONS AND OPERATION PRINCIPLE**

5.1 GGFE is a set of cartridges combined constructively in one frame. Each cartridge provides fire extinguishing of  $1\text{m}^3$  of premises, i.e. volume protected with one GGFE device is determined by a number of cartridges placed in one frame. Maximal amount of cartridges in GGFE is 20 items.

5.2 Images of GGFE-1.0, GGFE-3.0, GGFE-7.0 with 1, 3, and 7 cartridges correspondingly are shown in Figure 1 as an example.



Figure 1

### 5.3 GGFE operation principle.

5.3.1 After electrical impulse supply to leads of electrical-triggering elements, gas-generating elements of cartridges generate a gas, which enters into cartridge volumes, filled with a coolant tablets, through lateral holes of their frames. When passing through a coolant tablets, gas is exposed to a preliminary cleaning from mechanical impurities, becomes cool and decomposes the tablets thermally releasing an additional portion of GFES. GFES enters burning zone through the holes in bottom part of a frame and filter-separators where its full cleaning from mechanical impurities takes place.

## 6 GGFE MAIN TECHNICAL FEATURES

6.1 GGFE main technical features are given in Table 1.

Table 1

Name of the parameter	Value		
	GGFE -1.0	GGFE -3.0	GGFE -7.0
1 Dimensions, mm, not more than:			
- diameter	106	-	238
- height	340	110	315
- length	-	360	352
- width	-	240	302
2 GGFE full mass, kg, not more than:	5.5	7.8	20.0
3 GGFE lag effect (time from the moment of executive impulse supply to GGFE starting element to the moment of GFES emission), sec, not more than	1.0		
4 GFES time of emission, sec	12...20	15...25	

Table 1 extension

Name of the parameter	Value		
	GGFE -1.0	GGFE -3.0	GGFE -7.0
5 Gases maximal temperature, °C, not more than: - on GGFE outlet; - at 120 mm distance from GGFE-1.0 outlet hole, and at 200 mm distance from GGFE-3.0 and GGFE-7.0 outlet holes	200		
6 GGFE frame maximal temperature during and after its operation, °C, not more than	80		
7 Protected volume in premises with nonhermeticity parameter $0.044 \text{ m}^{-1}$ , $\text{m}^3$	1.0	3.0	7.0
8 Protected volume in case of simultaneous launch of 20 GGFE items, $\text{m}^3$ - premises nonhermeticity parameter, $\text{m}^{-1}$	20 0.044	60 0.018	140 0.014
9 GGFE starting circuit launching features: - starting current, A, not less than; - starting circuit electrical resistance, Ohm	0.12 8...16	0.36 4.0...5.3	0.85 1.7...2.2
10 GFES main components content in volume fraction, %: - $\text{CO}_2$ - $\text{N}_2$ - $\text{H}_2\text{O}$	37.5 22.5 29.1		
11 Thermal operation range, °C	-30...+50		

There are no solid particles in GFES.

6.2 Rest technical features and requirements to the products correspond to TU 9-54572789-11, TU 4854-021-54572789-12.

## 7 SAFETY MEASURES

7.1 Persons admitted to GGFE operation, must study the content of present technical recommendations, GGFE manual instructions and follow their requirements.

7.2 GGFE must not have a frame integrity damaging after actuation such as burning-outs, injuries etc.

7.3 In case of generator defects detection during its service life or after its specified lifetime GGFE is destined to sending to a factory-manufacturer for utilization.

7.4 It is not allowed:

- GGFE storage near heating devices;
- GGFE exposure to sunlight, precipitation, direct sunlight, aggressive medium, moisture;
- Infliction of impacts on GGFE frame;
- Fall from height more than 2 m;
- GGFE disassembling, bringing any changes in its construction, and misusing;
- Operation of GGFE with damaged case (dents, cracks, through holes);
- Turning GGFE outlet holes towards a human when working with GGFE.

7.5 Entering into premises protected from the moment of gaseous fire-extinguishing substances ejecting and fire liquidation till the moment of ventilation finishing is allowed with usage of isolating protective equipment of respiratory organs and eyesight only.

7.6 Entering into premises without usage of isolating protective equipment of respiratory organs and eyesight is allowed only after burning products removing and gaseous fire-extinguishing substance concentration lowering till the safe level.

7.7 It is necessary to leave premises if first signs of GGFE actuation occur.

## **8 GGFE DISTINGUISHING FEATURES**

8.1 GGFE is a compact small-sized device which is allowed to install in any place of volume protected and in any space orientation.

8.2 There's no need to perform any capital works, piping wiring, complex valve system for GGFE launching and GFES supply into volume protected.

8.3 There's no any pressure in GGFE frame during its operation, therefore there's no need to perform a permanent control of GFES leakage in generator frame, as it is necessary in traditional gas firefighting systems. GGFE itself does not subject to Rostekhnadzor services supervision.

8.4 Owing to double cleaning GFES comes into protected volume without any mechanical impurities.

8.5 GGFE cartridge is launched to work from a low-power electrical impulse (starting current is 0.12 A). Electrical connection of cartridges in GGFE is parallel.

8.6 GGFE fixed operation life is 10 years without any special maintenance.

8.7 There is no kickback load therefore special measures during device installation on an object are not required.

8.8 There is a possibility of premises protection, volume of which is larger than GGFE firefighting ability, by means of simultaneous launch of several GGFE (till 20 items inclusive) without piping installation.

8.9 GFES does not have any bad influence on electronics workability that has been confirmed by internal life testings.

8.10 The possibility of GGFE application as an autonomous firefighting mean with wide used and reasonable-priced electronic launching units purposed for autonomous fire-extinguishing sets with electrical parameters not less than GGFE starting current.

## **9 GENERAL PROVISIONS FOR THE DESIGN OF FIRE-EXTINGUISHING SETS ON BASE OF GGFE**

9.1 When designing and calculating of fire-extinguishing set on base of GGFE it is necessary to take into account the following basic information:

- A number of premises to be simultaneously protected with firefighting set;
- Geometrical parameters of premises (premises configuration, length, width, and height of shielding constructions, volume of premises).
- Square of permanently open apertures in shielding constructions and their placement;
- Specification and fire hazard characteristics of substances and materials contained in premises, and corresponding fire class according to GOST 27331;



- Type, value, and scheme of fire load distribution;
- Air ventilation and air conditioning systems presence and their features;
- Technological equipment features;
- Human's presence and evacuation ways.

9.2 GGFE mounting can be made on any kind of bearing surface: ceiling, walls, floor, or other bearing surface located at any angle relative to the floor surface. It is not recommended to aim GGFE nozzle towards places of shielding depressurization in volume protected (transoms, shutters, chinks etc.).

9.3 In case of fire protection of premises with volume more than GGFE firefighting ability, the total amount of GGFE devices must be determined by formula:

$$N = V_P / V_{GGFE},$$

where  $V_P$  – volume of premises protected,  $m^3$ ;

$V_{GGFE}$  – volume protected with one generator.

It is allowed applying several GGFE devices of different kind with different firefighting ability. In this case the calculation of necessary number of GGFE devices should be made according to a formula:

$$V_P = \sum(V_{GGFEi} \cdot N_i),$$

where  $V_{GGFEi}$  – volume protected with one GGFE having specified firefighting ability,  $m^3$ ;

$N_i$  – number of GGFE of volume protected specified, pc.

If obtaining fractional number of GGFE items during calculation the following greater integral number is taken as a final. Generators should be installed in such a way that to provide rapid and uniform filling of premises with GFES.

It is recommended to install GGFE in premises with rack storage or with high density of equipment so that to make GFES access maximally easier into zones of possible fire origin shielded with equipment set.

9.4 A simultaneous launch of all GGFE devices must be provided. In case of impossibility of performing a simultaneous launch because of exceeding of summary starting current over output parameters of fire automatics control devices, it is recommended to apply extenders for consecutive launch of GGFE groups of devices.

9.5 When making design of fire-extinguishing set for fire protection of premises with volume up to  $400 m^3$  inclusive it is necessary to take into account the nonhermeticity parameter of premises which must correspond to the requirements of Table 2.

*Table 2*

<b>Nonhermeticity parameter, m<sup>-1</sup>, not more than</b>	<b>Volume of premises to be protected, m<sup>3</sup></b>
0.044	up to 10
0.033	from 10 up to 20
0.028	from 20 up to 30
0.022	from 30 up to 50
0.018	from 50 up to 75
0.016	from 75 up to 100
0.014	from 100 up to 150
0.012	from 150 up to 200
0.011	from 200 up to 250
0.010	from 250 up to 300
0.009	from 300 up to 400

9.6 GGFE devices in premises protected are combined in automatical or autonomous gas fire-extinguishing set providing simultaneous or consequent, according to paragraph 9.5 requirements, automatical or remote launch of all generators when exceeding controlled fire parameters over threshold values set in zone protected.

9.7 A 100% reserve of cartridges must be foreseen on the object protected for their replacement in GGFE fire-extinguishing set protecting the largest premises.

9.8 When making design of automatical gas fire-extinguishing set a delay of GFES emission should be provided after light and sound signal warning for the period of time necessary for people evacuation, air ventilating equipment stopping, shutting of doors, air chokes, fire floats etc., and also automatical launch deactivating in case of doors opening in premises protected with switched off condition indication.

9.9 Autonomous fire-extinguishing sets on base of GGFE TUNGUS having functions of fire detection and fire suppression only are allowed to be applied for protection of premises with volume not more than 100 m<sup>3</sup>, attending of which is made periodically by personnel (in case of production necessity), and also for fire protection of electrical boards, electrical cabinets, server rooms etc.

## **10 CONCLUSION**

10.1 It is recommended to apply GGFE for fire suppression of fires class A,B, E in different stationary electrotechnical devices of board implementation and in premises in case of personnel absence in the volume protected in the moment of generators launching.

10.2 The results of tests and readiness for the serial production have been confirmed by certificates of conformity, expert conclusions about GGFE compliance with “Common sanitary-and-epidemiologic and hygienic requirements...”, approved by Customs Union Commission Decision No 299 dated on 28.05.2010 (see Annex A).



Annex A (reference)

GGFE CERTIFICATES OF CONFORMITY AND EXPERT CONCLUSIONS

СИСТЕМА ДОБРОВОЛЬНОЙ СЕРТИФИКАЦИИ ПРОДУКЦИИ  
«РЕГИСТР ПОЖТЕСТ»

**СЕРТИФИКАТ СООТВЕТСТВИЯ**  
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Аттестат рег. № ТРИБ.РУ.ПБ01 уполномочен 30.11.2010г. Некоммерческим  
партнерством Национальная академия наук пожарной безопасности (НАНПБ)

**ПОДТВЕРЖДАЕТ, ЧТО ПРОДУКЦИЯ** код ОК 005 (ОКП) **48 5433** код ТН ВЭД России  
Генераторы газового пожаротушения ТППТ-1.0 потопочного и настенного крепления,  
ТУ 4854-019-54572789-11  
Серийный выпуск

**СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ НОРМАТИВНЫХ ДОКУМЕНТОВ**  
ТУ 4854-019-54572789-11

Проведенные исследования (испытания) и измерения, документы,  
послужившие основанием для подтверждения соответствия  
Отчет о сертификационных испытаниях № 10947 от 22.08.2011  
ИЛ НИЦПТ и СП ФГУ ВНИИПО МЧС России, № ТРИБ.РУ.ИП01 от 30.11.2010.  
Акт о результатах анализа состояния производства № 12214 от 04.07.2011  
ОС «ПОЖТЕСТ» ФГУ ВНИИПО МЧС России, № ТРИБ.РУ.ПБ01 от 30.11.2010.

СРОК ДЕЙСТВИЯ СЕРТИФИКАТА СООТВЕТСТВИЯ с **31.08.2011** по **31.08.2016**

Руководитель (заместитель руководителя) **В.В. Яшин**  
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«РЕГИСТР ПОЖТЕСТ»

**СЕРТИФИКАТ СООТВЕТСТВИЯ**  
№ ССРП-РУ.ПБ01.Н.00083  
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партнерством Национальная академия наук пожарной безопасности (НАНПБ)

**ПОДТВЕРЖДАЕТ, ЧТО ПРОДУКЦИЯ** код ОК 005 (ОКП) **48 5433** код ТН ВЭД России  
Генераторы газового пожаротушения (ТППТ), ТУ 4854-021-54572789-12  
Серийный выпуск

**СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ НОРМАТИВНЫХ ДОКУМЕНТОВ**  
ТУ 4854-021-54572789-12

Проведенные исследования (испытания) и измерения, документы,  
послужившие основанием для подтверждения соответствия  
Отчет о сертификационных испытаниях № 11369 от 11.04.2012  
ИЛ НИЦПТ и СП ФГУ ВНИИПО МЧС России, № ТРИБ.РУ.ИП01 от 03.10.2011.  
Сертификат соответствия ГОСТ Р ИСО 9001-2008 № ИЛ.01.03.К.06618.С.К от 21.05.2011  
Орган по сертификации систем качества «СОЮЗСЕТ», № РИ.40360.7101.63.0003.

СРОК ДЕЙСТВИЯ СЕРТИФИКАТА СООТВЕТСТВИЯ с **16.04.2012** по **16.04.2017**

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УТВЕРЖДЕНО  
Приказом ФГУЗ «Центр гигиены и эпидемиологии в Смоленской области»  
№ 20-Д от 20.05.08 года

ФЕДЕРАЛЬНАЯ СЛУЖБА ПО НАДЗОРУ  
В СФЕРЕ ЗАЩИТЫ ПРАВ ПОТРЕБИТЕЛЕЙ И БЛАГОПРИОЧИНЕНИЯ ЧЕЛОВЕКА  
ФЕДЕРАЛЬНОЕ БЮДЖЕТНОЕ УЧРЕЖДЕНИЕ ЗДРАВООХРАНЕНИЯ  
«Центр гигиены и эпидемиологии в Смоленской области»  
214015, г. Смоленск, Тульский пер., д. 12

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И.Г. Пономарев

**ЭКСПЕРТНОЕ ЗАКЛЮЧЕНИЕ**  
по результатам санитарно-эпидемиологической экспертизы продукции  
№ 7287 от 18 ноября 2011 года

**Заявитель и его адрес:** ЗАО «Источники Плюсо», 659322, г. Бийск Алтайского края, ул. Социалистическая, 1.  
(район, улица, дом)

**Иготовитель и его адрес:** ЗАО «Источники Плюсо», 659322, г. Бийск Алтайского края, ул. Социалистическая, 1.

**Основание для проведения экспертизы:** Заявка вх. № 10295 от 17.11.2011г.

**Состав экспертных материалов:** Заявка, задание, протоколы испытаний № 046-11-ПР от 30.11.2011 г. ИЛЦ ФГУ «736 главный центр государственного санитарно-эпидемиологического надзора Министерства обороны Российской Федерации (Алт. Ахкр. № ГС-ЭН.РУ.ПОА.166), ТУ 4854-019-54572789-11, паспорт, описание, договор аренды, регистрация фирмы в налоговом органе, доверенность на право представлять интересы предприятия.

**Установлено:** Генераторы газового пожаротушения ТППТ-1.0 - производимые фирмой ЗАО «Источники Плюсо», 659322, г. Бийск Алтайского края, ул. Социалистическая, 1, по результатам проведенных испытаний типовых представительных образцов - Генераторы газового пожаротушения ТППТ-1.0, область применения: Для тушения пожаров классов А, В, С, Е объемным способом - не соответствуют требованиям: «Единым санитарно-эпидемиологическим и гигиеническим требованиям к товарам, подлежащим санитарно-эпидемиологическому надзору (контролю)» утв. Решением Комиссии таможенного союза № 299 от 28.05.2010 г.

**Заключение:**  
Генераторы газового пожаротушения ТППТ-1.0 - производимые фирмой ЗАО «Источники Плюсо», 659322, г. Бийск Алтайского края, ул. Социалистическая, 1, соответствуют «Единым санитарно-эпидемиологическим и гигиеническим требованиям к товарам, подлежащим санитарно-эпидемиологическому надзору (контролю)» утв. Решением Комиссии таможенного союза № 299 от 28.05.2010 г.

Заведующая санитарно-гигиеническим отделением **Е.Г. Майорова**

УТВЕРЖДЕНО  
Приказом ФГУЗ «Центр гигиены и эпидемиологии в Смоленской области»  
№ 20-Д от 20.05.08 года

ФЕДЕРАЛЬНАЯ СЛУЖБА ПО НАДЗОРУ  
В СФЕРЕ ЗАЩИТЫ ПРАВ ПОТРЕБИТЕЛЕЙ И БЛАГОПРИОЧИНЕНИЯ ЧЕЛОВЕКА  
ФЕДЕРАЛЬНОЕ БЮДЖЕТНОЕ УЧРЕЖДЕНИЕ ЗДРАВООХРАНЕНИЯ  
«Центр гигиены и эпидемиологии в Смоленской области»  
214015, г. Смоленск, Тульский пер., д. 12

УТВЕРЖДАЮ  
Главный врач федерального бюджетного учреждения здравоохранения  
«Центр гигиены и эпидемиологии в Смоленской области»  
И.Г. Пономарев

**ЭКСПЕРТНОЕ ЗАКЛЮЧЕНИЕ**  
по результатам санитарно-эпидемиологической экспертизы продукции  
№ 3781 от 03 мая 2012 года

**Заявитель и его адрес:** ЗАО «Источники Плюсо», 659322, г. Бийск Алтайского края, ул. Социалистическая, 1.  
(район, улица, дом)

**Иготовитель и его адрес:** ЗАО «Источники Плюсо», 659322, г. Бийск Алтайского края, ул. Социалистическая, 1.

**Основание для проведения экспертизы:** Заявка вх. № 5059 от 02.05.2012г.

**Состав экспертных материалов:** Заявка, задание, протоколы испытаний № 404-246 от 18.04.2012 г. Испытательная лаборатория ООО «Микроан» (Алт. Ахкр. № ГС-ЭН.РУ.ПОА.765), аттестат, ТУ 4854-021-54572789-12, регистрация фирмы в налоговом органе, доверенность на право представлять интересы предприятия.

**Установлено:** Генераторы газового пожаротушения - производимые фирмой ЗАО «Источники Плюсо», 659322, г. Бийск Алтайского края, ул. Социалистическая, 1, по результатам проведенных испытаний типовых представительных образцов - Генераторы газового пожаротушения, область применения: для тушения пожаров классов А, В, С, Е объемным способом - не соответствуют требованиям: «Единым санитарно-эпидемиологическим и гигиеническим требованиям к товарам, подлежащим санитарно-эпидемиологическому надзору (контролю)» утв. Решением Комиссии таможенного союза № 299 от 28.05.2010 г.

**Заключение:**  
Генераторы газового пожаротушения - производимые фирмой ЗАО «Источники Плюсо», 659322, г. Бийск Алтайского края, ул. Социалистическая, 1, соответствуют «Единым санитарно-эпидемиологическим и гигиеническим требованиям к товарам, подлежащим санитарно-эпидемиологическому надзору (контролю)» утв. Решением Комиссии таможенного союза № 299 от 28.05.2010 г.

Заведующая санитарно-гигиеническим отделением **Е.Г. Майорова**