



**OPCW**

**Conference of the States Parties**

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Twenty-Ninth Session  
25 – 29 November 2024

C-29/NAT.4  
22 November 2024  
ENGLISH and RUSSIAN only

**RUSSIAN FEDERATION**

**REQUEST FOR CIRCULATION OF A DOCUMENT AT THE TWENTY-NINTH  
SESSION OF THE CONFERENCE OF THE STATES PARTIES**

The Permanent Representation of the Russian Federation to the OPCW has requested that a note verbale addressed to the Technical Secretariat of the OPCW (dated 22 November 2024) be circulated as an official document of the Twenty-Ninth Session of the Conference of the States Parties.

Annex: Note Verbale from the Permanent Representation of the Russian Federation to the Technical Secretariat of the OPCW Dated 22 November 2024



**Annex**

**NOTE VERBALE FROM THE PERMANENT REPRESENTATION OF THE  
RUSSIAN FEDERATION TO THE TECHNICAL SECRETARIAT OF THE OPCW  
DATED 22 NOVEMBER 2024**

Unofficial translation



**ПОСТОЯННОЕ ПРЕДСТАВИТЕЛЬСТВО  
РОССИЙСКОЙ ФЕДЕРАЦИИ  
ПРИ ОРГАНИЗАЦИИ ПО ЗАПРЕЩЕНИЮ  
ХИМИЧЕСКОГО ОРУЖИЯ В ГААГЕ**

PERMANENT REPRESENTATION  
OF THE RUSSIAN FEDERATION  
TO THE ORGANISATION FOR THE PROHIBITION  
OF CHEMICAL WEAPONS IN THE HAGUE

№ 71

The Permanent Representation of the Russian Federation to the Organization for the Prohibition of Chemical Weapons (OPCW) presents its compliments to the OPCW Technical Secretariat and has the honour to draw the attention of the OPCW Technical Secretariat, as well as the States Parties to the Chemical Weapons Convention (CWC), to the following.

The Ukrainian Armed Formations continue to use toxic chemicals, including those that are listed in the Annex on Chemicals to the CWC, and riot control agents against the Russian servicemen and civilians in the special military operation zone in violation of the key CWC provisions.

This is clearly demonstrated by the results of the analysis of biomedical samples of those affected by 155-mm cluster munitions DM-105 filled with a phosgene smoke-generating mixture of foreign origin used on 10 August 2024 in the city of Sudzha, Russian Federation, during the invasion of the territory of the Russian Federation by Ukrainian armed formations.

A report on the increased toxic effect of this mixture, which is hazardous for human health, was made by the U.S. Army Biomedical

**TECHNICAL SECRETARIAT OF THE OPCW**

**The Hague**

Research and Development Laboratory in Fort Detrick in the 1990s (<https://apps.dtic.mil/sti/tr/pdf/ADA277838.pdf>), due to which their production and use in the US was prohibited.

The materials of chemical-analytical research prepared by the specialised Laboratory of the Russian Ministry of Defence are enclosed.

The Permanent Representation of the Russian Federation to the OPCW requests the Technical Secretariat that a copy of this Note Verbale with annex be distributed among States Parties as an official-series document of the 29<sup>th</sup> Session of the Conference of the States Parties to the CWC and made available on the OPCW website and “Catalyst” platform.

The Permanent Representation of the Russian Federation to the OPCW avails itself of this opportunity to renew to the Technical Secretariat assurances of its highest consideration.

Enclosed:  
As stated above  
(2 pages)

The Hague, 22 November, 2024



*Unofficial translation*

Annex

APPROVED  
By Colonel V.Kovtun,  
Head of the 27<sup>th</sup> Scientific Centre  
Defence Ministry of the Russian Federation  
11 August 2024

### Conclusion Report

The Analytical Chemistry Laboratory of the Federal State Budgetary Institution "N.D. Zelinsky 27<sup>th</sup> Scientific Centre" of the Defence Ministry of the Russian Federation carried out the investigation of the following biomedical samples:

#	Sample labelling	Type of sample	Volume (in ml)
1	[...] A	Blood with heparin	~ 7.5 ml
2	[...] B	Blood with heparin	~ 7-8 ml
3	[...] C	Blood with heparin	~ 7.5 ml
4	[...] D	Blood with heparin	~ 7.5 ml
5	[...] E	Blood with heparin	~ 7.5 ml
6	[...] F	Blood with heparin	~ 7.5 ml
7	[...] A	Urine (light yellow)	~ 22 ml
8	[...] B	Urine (light yellow)	~ 55 ml
9	[...] C	Urine (yellow)	~ 90 ml
10	[...] D	Urine (yellow)	~ 15 ml
11	[...] E	Urine (dark yellow)	~ 13 ml
12	[...] F	Urine (dark yellow)	~ 10 ml

The samples were collected from servicemen on 11 August 2024 in Sudzha, Kursk Oblast, territory of the district internal affairs office.

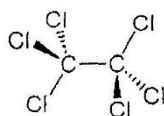
The chemical analysis of samples was carried out to identify the toxic chemical compounds contained therein and to find out the reasons of the personnel exposure (poisoning).

To examine the above the techniques, such as gas and high-performance liquid chromatography-mass spectrometry and inductively coupled plasma – atomic emission spectroscopy were used.

The analysis revealed the following toxic chemicals in samples 1-6 (blood serum):

1. Hexachloroethane (CAS number: 67-72-1).

Structural formula:

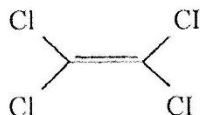


Molecular formula:  $C_2Cl_6$ .

It is used as the main element of metal chloride smoke mixtures.

2. Tetrachloroethylene (CAS number: 127-18-4).

Structural formula:



Molecular formula:  $C_2Cl_4$ .

Product of pyrolysis of hexachloroethane.

The multi-component analysis of samples showed the elevated level of zinc concentration in blood and urine (in blood it exceeds 2-5 times, in urine – 2 times).

The chromatograms and mass-spectra of the identified compounds are attached.

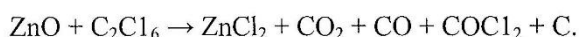
Conclusions:

1. The identified chemical compounds (elements) testify that the enemy used ammunition filled with metal chloride mixture, containing phosgene.

The peculiarity of metal chloride mixture combustion is that it produces a significant amount of toxic chemical compounds that can cause injury to personnel who are in the smoke without gas masks.

Such chemical compounds include chlorinated hydrocarbons (products of pyrolysis of hexachloroethane), zinc chloride ( $ZnCl_2$ ), phosgene ( $COCl_2$ ) and carbon monoxide (CO).

The following chemical reaction between hexachloroethane and zinc oxide occurs when a metal chloride mixture is set on fire:



2. The personnel exposure (poisoning) became possible, most likely, due to the huge amounts of aerosol getting into the bodies through respiratory system and carrying phosgene, chlorinated hydrocarbons, zinc chloride and CO.

Phosgene has an asphyxiating effect. Lethal concentration is 0.01-0.03 mg/l (at exposure of 15 minutes).

Chlorinated hydrocarbons (hexachloroethane, tetrachloroethylene) have toxic effect on the central nervous system, liver and kidneys. By inhalation of the air containing high levels of chlorinated hydrocarbons in short periods of time, the loss of coordination, sweating, agitation, dizziness, drowsiness, headache, nausea, weakness and loss of consciousness are observed.

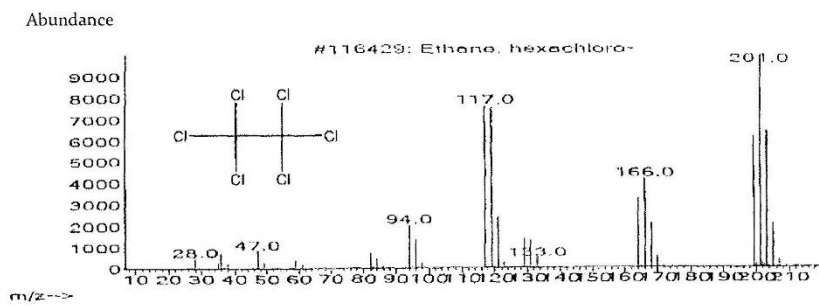
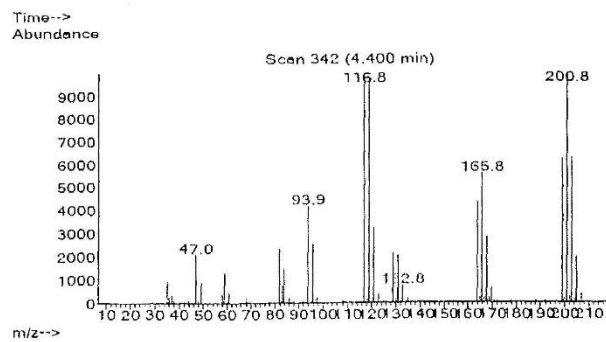
Zinc chloride is toxic and irritant.  $LD_{50} - 200$  mg/kg.

Carbon monoxide (CO) is a toxic low-hazardous substance of the 4<sup>th</sup> hazard class.

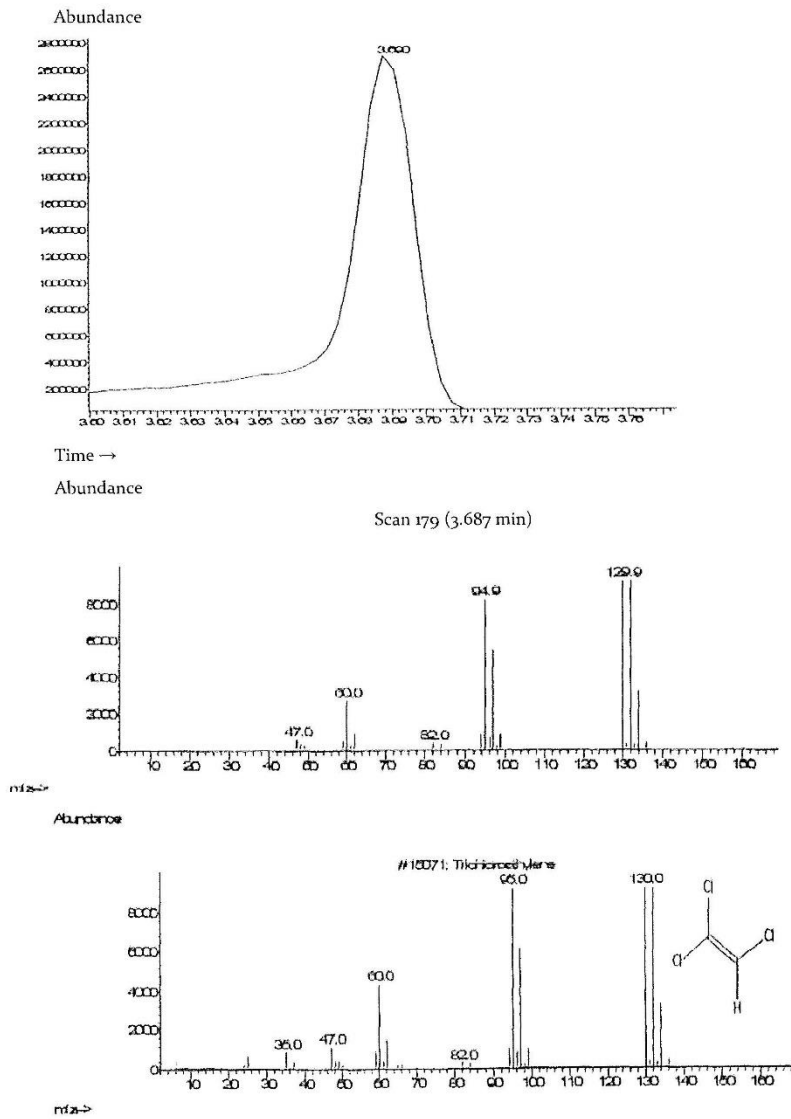
Head of the Analytical Chemistry Laboratory of the 27<sup>th</sup> Scientific Centre of the Defence Ministry of the Russian Federation

Vladimir Fateenkov

1. Mass spectrum ion of hexachloroethane chromatogram of blood serum extract. A mass spectrum of the substance identified as hexachloroethane and a library mass spectrum.



2. Total ion current chromatogram of blood serum extract. A mass spectrum of the substance identified as trichloroethylene and a library mass spectrum.







INTEGRATED FRAMEWORK FOR RESULTS OF MULTI-ELEMENT ANALYSIS OF URINE SAMPLES

No	Elements	Reference, mg/L	Found in urine samples, mg/L						Notes
			[... A	[... B	[... C	[... D	[... E	[... F	
1.	Li		0.0271	0.0206	0.0450	0.0801	0.0938	0.0712	
2.	Be		not detected	0.0013	0.0008	not detected	0.0003	0.0001	
3.	B		1.0415	0.6319	1.0854	2.9841	5.4212	3.4960	
4.	Na		4397.2941	684.7901	2217.2353	3872.6288	2542.8354	2190.5496	
5.	Mg		105.0634	11.2580	43.6989	91.8179	107.7563	61.3000	
6.	Al		0.1842	0.1499	0.0989	0.1658	0.2569	0.2008	
7.	K		1997.1111	404.6624	297.6718	1234.1784	3064.8540	5557.4162	
8.	Ca		248.0403	33.3432	100.3276	127.9747	108.1404	53.0383	
9.	Cr		0.0037	0.0065	0.0040	0.0015	0.0030	0.0022	
10.	Mn		0.0044	0.0092	0.0097	0.0380	0.0677	0.0276	
11.	Fe	0.056-0.146	0.15042	0.08233	0.1092	0.08366	0.1177	0.1217	
12.	Co		0.0004	0.0013	0.0002	0.0005	0.0006	0.0011	
13.	Ni		0.0042	0.0037	0.0028	0.0024	0.0046	0.0025	
14.	Cu		0.0465	0.0395	0.0517	0.1381	0.1661	0.0733	
15.	Zn	0.2-1.2	0.9539	0.4225	0.7160	1.7495	2.0868	0.8501	
16.	Sr		0.4494	0.1115	0.2647	0.3743	0.3958	0.1593	
17.	Mo		0.2267	0.0388	0.0349	0.3102	0.2565	0.2830	
18.	Ag		0.0083	0.0073	0.0090	0.0087	0.0084	0.0086	
19.	Sn		not detected	not detected	not detected	not detected	0.0017	0.0012	
20.	Sb		0.0063	0.0031	0.0102	0.0030	0.0139	0.0168	
21.	Ba		0.0077	0.0076	0.0042	0.0048	0.0157	0.0048	
22.	Hg		0.0043	0.0006	0.0008	0.0826	0.0057	0.0014	
23.	Tl		not detected	not detected	not detected	not detected	not detected	not detected	
24.	Pb		0.0048	0.0140	0.0176	0.0146	0.0243	0.0174	
25.	Bi		0.0053	0.0109	0.0097	0.0059	0.0071	0.0059	
26.	Ti		0.0372	0.0086	0.0228	0.0293	0.0173	0.0132	
27.	V		0.0005	0.0002	0.0004	0.0004	0.0006	0.0008	
28.	As		0.0018	0.0045	0.0050	0.0119	0.0156	0.0187	
29.	Se		0.0218	0.0134	0.0198	0.0769	0.0645	0.0591	
30.	Cd		0.0002	0.0002	0.0005	0.0014	0.0019	0.0005	