

Conference of the States Parties

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

Nº 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

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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 29th 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.

The Hague, "LL" November, 2024

Enclosed:
As stated above
(Ypages)

Unofficial translation

Annex

APPROVED
By Colonel V.Kovtun,
Head of the 27th 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 27th 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: C2Cl6.

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

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

Structural formula:

Molecular formula: C2Cl4.

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 (ZnCl₂), phosgene (COCI₂) and carbon monoxide (CO).

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

$$ZnO + C_2C1_6 \rightarrow ZnCl_2 + CO_2 + CO + COC1_2 + C.$$

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 od consciousness are observed.

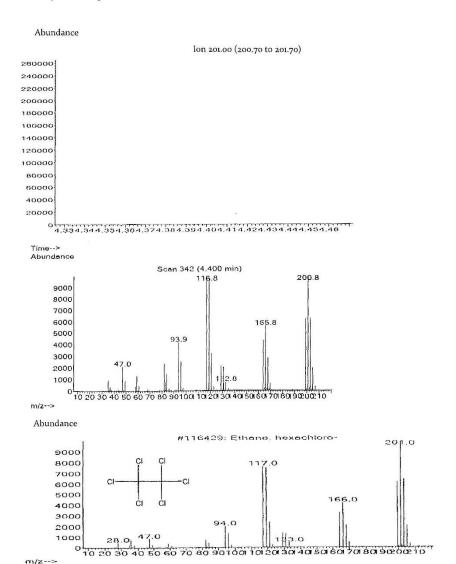
Zinc chloride is toxic and irritant. $LD_{50} - 200 \text{ mg/kg}$.

Carbon monoxide (CO) is a toxic low-hazardous substance of the 4^{th} hazard class.

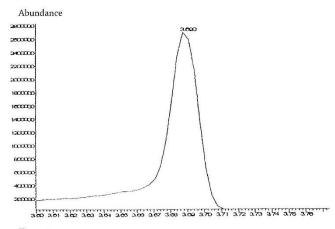
Head of the Analytical Chemistry Laboratory of the 27th Scientific Centre of the Defence Ministry of the Russian Federation

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.

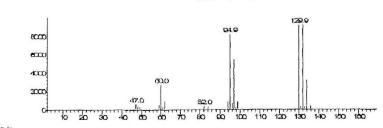


2. Total ion current chromatogram of blood serum extract. A mass spectrum of the substance identified as trichloroethylene and a library mass spectrum.

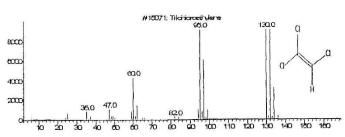


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Scan 179 (3.687 min)



Abundance



mia->

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

FIG	Elements	¢.			Found in blo	Found in blood samples, mg/L			Notes
		Kererence, mg/L	[] A	[] B	IC	[]	[] E	I1F	
Lith	Lithium		0.0141	0.0109	0.0371	0.0276	0.0675	0.0038	
Ber	Beryllium		not detected	80000	not detected	0.000	not detected	not detected	
Bo	Boron		0.0805	0.0603	0.1176	0.0465	0.2337	0.0305	
So	Sodium		3222.8799	3402.4938	3302.8976	3158.0513	3519.7825	3130.3691	
W	Magnesium		28.8281.	36.9880	28.2124	31.8931	31.1813	29.6736	
Y	Aluminium		2.0105	1.4001	2,3204	1,9595	1,4540	2,4225	
P	Potassium		414,5325	296,6844	290,4531	602,7357	391,2996	531,2456	
O	Calcium		94,1951	123,2171	109,8179	90,5039	8668'86	110,6420	
O	Chromium		0.0356	0.0277	0.0374	0.0318	0.0257	0.1219	
12	Manganese		0.0554	0.0548	0.0580	0.0422	0.0452	0.0953	
2	Iron	0.616-1.568	0.6770	1.2486	1.2022	0.97485	1.3187	0.9236	
ŭ	Cobalt		0.0017	0.0013	60000	90000	0.0021	0.0065	
ź	Nickel		0.0877	0.0402	0.0173	0.0415	0.0490	0.1880	
	Copper		1.2264	1.6924	1.9763	1.3071	1.5366	1.0226	
-	Zinc	0.7-1.6	2.9695	3.1106	3.3216	3.0334	2.5778	5.7372	
-	Strontium		0.0618	0.1441	0.0829	0.0564	0.0843	0.1115	
1	Molybdenum		0.0121	not detected	not detected	not detected	not detected	0.0604	
-	Silver		0.0931	0.0520	0.0785	0.0907	0.0928	0.0346	
L	Tin		not detected	not detected	not detected	0.0130	not detected	0.0257	
	Antimony		0.0313	0.0398	0.1371	0.0187	0.0476	0.0387	
-	Barium		0.0018	0.0476	0.0296	0.0251	0.0137	0.0878	
-	Mercury		0.0573	0.0400	0.0322	0.0284	0.0299	9000.0	
	Thallium		not detected	not detected	not detected	not detected	not detected	not detected	
匚	Lead		0.0495	0.0512	0.0425	0.0946	0.0208	0.0442	
	Bismuth		0.0654	0.0395	0.0602	0.0657	0.0345	0.0408	
-	Titanium		0.0739	0.1537	0.1595	0.2254	0.2499	0.4109	
	Vanadium		0.0043	0.0023	0.0024	0.0029	0.0025	0.0066	
\vdash	Arsenic		0.0039	0.0025	0.0020	0.0039	0.0008	0.0021	
	Selenium		0.0900	0.0950	0.0980	0.1000	0.0963	0.0797	
	Cadmium		0.0008	0.000	0.0003	0.0012	0.0049	0.0084	

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

Notes																															
	F	0.0712	0.0001	3.4960	2190.5496	61.3000	0.2008	5557.4162	53.0383	0.0022	0.0276	0.1217	0.0011	0.0025	0.0733	0.8501	0.1593	0.2830	9800.0	0.0012	0.0168	0.0048	0.0014	not detected	0.0174	0.0059	0.0132	8000.0	0.0187	0.0591	0.0005
	[]E	0.0938	0.0003	5.4212	2542.8354	107.7563	0.2569	3064.8540	108.1404	0.0030	0.0677	0.1177	90000	0.0046	0.1661	2.0868	0.3958	0.2565	0.0084	0.0017	0.0139	0.0157	0.0057	not detected	0.0243	0.0071	0.0173	90000	0.0156	0.0645	0.0019
Found in urine samples, mg/L	[]	0.0801	not detected	2.9841	3872.6288	91.8179	0.1658	1234.1784	127.9747	0.0015	0.0380	0.08366	0.0005	0.0024	0.1381	1.7495	0.3743	0.3102	0.0087	not detected	0.0030	0.0048	0.0826	not detected	0.0146	0.0059	0.0293	0.0004	0.0119	0.0769	0.0014
	JII	0.0450	0.0008	1.0854	2217.2353	43.6989	6860.0	297.6718	100.3276	0.0040	0.0097	0.1092	0.0002	0.0028	0.0517	0.7160	0.2647	0.0349	0.0000	not detected	0.0102	0.0042	8000.0	not detected	0.0176	0.0097	0.0228	0.0004	0.0050	0.0198	0.0005
	[]	0.0206	0.0013	0.6319	684.7901	11.2580	0.1499	404.6624	33.3432	0.0065	0.0092	0.08233	0.0013	0.0037	0.0395	0.4225	0.1115	0.0388	0.0073	not detected	0.0031	0.0076	90000	not detected	0.0140	0.0109	9800.0	0.0002	0.0045	0.0134	0.0002
	[]	0.0271	not detected	1.0415	4397.2941	105.0634	0.1842	1997.1111	248.0403	0.0037	0.0044	0.15042	0.0004	0.0042	0.0465	0.9539	0.4494	0.2267	0.0083	not detected	0.0063	0.0077	0.0043	not detected	0.0048	0.0053	0.0372	0.0005	0.0018	0.0218	0.0002
	Reference, mg/L											0.056-0.146				0.2-1.2															
	Elements	Гиним	Beryllium	Boron	Sodium	Magnesium	Aluminium	Potassium	Calcium	Chromium	Manganesc	Iron	Cobalt	Nickel	Copper	Zinc	Strontium	Molybdenum	Silver	Tin	Antimony	Barium	Mercury	Thallium	Lead	Bismuth	Titanium	Vanadium	Arsenic	Selenium	Cadmium
		ij	Be	В	Na	Mg	Al	\vdash	Ca	ථ	Mn	Fe		Z		Zn	Sr	Mo	Ag	Sn	Sb	Ba	Hg	T1	Pb	Bi	ΙΙ	>	As	Se	P
×		T.	2	i,	4	5.	9	7.	∞.	9.	10.	11.	12.	13.	14.	. 15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.