CRISTANINI CBRN DECONTAMINATION SYSTEMS

Effective Decontamination Operations Completed Utilizing NATO Military Equipment

ITL SOLUTIONS

For over 40 years, Cristanini S.p.A. products have been effectively neutralizing chemical and biological threats and decontaminating radiological threats in over 60 countries worldwide.

ITL Solutions is a Service Disabled Veteran Owned Small Business with over 40 years of Federal Procurement experience providing mission critical equipment for today's requirements and tomorrow's unknowns.

Sanijet C.921 and Sanijetgun

EBOLA VIRUS (EVD)

2014 Aircraft Decontamination in Brazil after transporting Ebola Infected Patient

On October 10th 2014 at the Rio de Janeiro Galeão Airport, the Brazilian Chemical, Biological, Radiological and Nuclear Battalion carried out the 1st internal and external decontamination of an aircraft after transporting a suspected Ebola virus patient.

Cristanini S.p.A. Decontamination equipment used:

- Exterior: Sanijet C.921 and Sanijetgun with the neutralization agent, BX24. BX24 is a suspension which provides effective disinfection even in the most difficult conditions and on vertical or undercut surfaces where it forms a light and persistent colloidal layer. In the colloidal layer the creation of active chlorine occurs gradually as the former is used up in the neutralization reactions of the weapon substance. The substance which donates the chlorine is, in fact, in thermo-dynamic balance with the chlorine itself and the trionic acid.
- Interior Volume: LDV-X utilizing H_2O_2 with strong oxidation power activated by heterogeneous catalyst and UV reaction.
- Sensitive Surfaces, such as cockpit electronics: SX34 aerosol and vacuum system. SX34 is an aerosol spray which starts with a liquid phase to permit partial mobilization of the contaminant toxic agent on the surface which is then adsorbed by the solid system. The contaminant toxic agent compound diffuses into the porous solid system of the SX34 where it becomes trapped. The contamination can then be vacuumed off the sensitive surface using SX34 vacuum system and neutralized with BX24.

BX24 Application

SX34 Application

CRISTANINI SYSTEMS EMPLOYED FOR THE DECONTAMINATION OF THE AIRCRAFT

BX 24	LDV-X	SANIJET C.921	SX 34
NATO Stock No: 6810-15-149-4789	NATO Stock No: 4230-15-011-2027	NATO Stock No: 4230-15-157-5553	NATO Stock No: 6850-15-203-0545

Overall Decontamination Setup

LDV-X Application

LDV-X Oxidation Power using Hydroxyl Radicals

Oxidant	Oxidation Power (V)
Fluorine	3.03
Hydroxyl radical	**2.80**
Atomic oxygen	2.07
Hydrogen peroxide	1.77
Permanganate	1.67
Hypobromous acid	1.59
Chlorine dioxide	1.50

Neutralization of Mustard Gas Shells and Disposal in Baltic Sea using BX24 Neutralization Powder

With a 10 year shelf life, BX24 can be employed directly as a powder or with water to neutralize chemical and biological agents with oxidation and hydrolyzation actions.

- BX24 can be applied on rubber seals, certain plastics and plexiglas making it well suited for equipment, vehicles, aircraft and mass transit decontamination.
- BX24 is biodegradable in both soil and ambient water systems.
- BX24 is a single powder ready for use which can be deployed through single dispersion in water at a concentration of 10-15% without the use of additives or solvents.
- BX24 has a wide operating temperature range: -32°C(-26°F) to +55°C (131°F) (STANAG 4370).
- BX24 enables decontamination of radiologicals due to its polarity effects.

BX24 Neutralization of Mustard Agent in Drum

Mustard Agent Discovered

BX24 Neutralized Mustard Agent Safely Returned to Environment

- **SERBIA-BELGRAD** - ***Serbian MOD-Technical Researching Centre,*** *Mustard decontamination with Sanijet and BX 24*
- ***OPCW*** -COMPARATIVE FIELD TESTING OF DECONTAMINATION AGENTS – SUMMARY REPORT- January 2009
- ***SLOVENIA – SLV Army Military Research Centre***
- ***CZ REP-VTU'O BRNO- DECONTAMINATION EFFICIENCY OF THE SX34 DECONTAMINANT PURPOSED FOR DETOXIFICATION OF SURFACES***
- **GRECIA** -***MOD Chemical Lab***
- **FRANCE**, **CEB - MoD PARIS,** *Efficiency against Biological Warfare AGENT* **THE NETHERLANDS- TNO Prins Maurits Laboratory –** *Efficiency against GD and VX*
- **ITALY**, **Joint Technical Centre (CETLI NBC) MoD – Roma –** *Homologation of the product BX24*
- **PANAMA -U.S. Army –** *Certification of BX24 under tropical conditions*
- **USA- U.S. Army – Aberdeen Proving Ground, Maryland and Dugway Proving Ground, Utah –** *BX24 on different surfaces against VX, THD and TGD*
- **DSTL-UK MoD–** *BX 24 action against CWA*
- **BELGIUM-Engineer School and testing Laboratories – Brussels –** *Comparison between BX24 and C8 against VX and HD*
- **FRANCE**, ***CEB - MoD PARIS,*** **Ministry of Defence,** *Tests of BX24 against VX and HD*
- **SOUTH AFRICA, Armscor / Defence Research and Development Board,** *Tests of BX24 against VX and HD*
- **POLAND NBC Defence Headquarters,** *Tests of BX24 against VX and HD*
- **FINLAND**, **Finnish Air Force (FIAF),** *Tests of BX24 against VX and HD, Tests of BX40 on aircraft F18*

BX24 Test Data Available

Ministry of Defence– CEB – Paris – France

Laboratory evaluation of BX24®
Efficiency against Biological Agent

Material	Bacillus antracis			Bacillus atrophaeus		
	Glass	Painted steel	ABS	Glass	Painted steel	ABS
Initial contamination (spores / porte Germe)	1,6 10^6	1,4 10^6	8,4 10^5	0,7 10^6	1,1 10^6	5 10^6
Residual Contamination (spores / porte Germe)	5	3	57	2	0*	11

Material	Yersinia pestis			Escherichia coli		
	Glass	Painted steel	ABS	Glass	Painted steel	ABS
Initial contamination (spores / porte Germe	0,5 10^6	0,7 10^6	0,3 10^6	0,7 10^6	1,1 10^6	5 10^6
Residual Contamination (spores / porte Germe	0*	0*	0*	0*	0*	0*

*No arable bacterium has been detected

France Ministry of Defense BX24 Biological Test Results

NATO OTAN

NCAGE A5009
CONFORM TO THE QUALITY SYSTEM STANDARD AQAP-2110 and ISO 9001:2008

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