PROENGIN 1, Rue de l'Industrie - 78210 SAINT-CYR L'ECOLE - FRANCE

TEL. : (33) 01 30 58 47 34
FAX : (33) 01 30 58 93 51

AGENTS DETECTED – A COMPREHENSIVE LIST

Agent Type	CW Agents (Military nomenclature)	CAS Number	Mol Formula	Detection Channel
Nerve (G)	Tabun - **GA**	77-81-6	$C_5H_{11}N_2O_2P$	P, HNO
Nerve (G)	Sarin - **GB**	107-44-8	$C_4H_{10}FO_2P$	P
Nerve (G)	Soman - **GD**	96-64-0	$C_7H_{16}FO_2P$	P
Nerve (G)	Cyclo-sarin - **GF**	329-99-7	C7H14FO2P	P
Nerve (G)	Ethyl sarin - **GE**	1189-87-3	C5H12FO2P	P
Nerve (G)	**GV** (also **GP**)	141102-74-1	$C_6H_{16}FN_2O_2P$	P, HNO
Nerve (V)	**VX**	50782-69-9	C11H26NO2PS	P, S, HNO
Nerve (V)	Amiton - **VG**	78-53-5	C10H24NO3PS	P, S, HNO
Nerve (V)	**VE**	1189-87-3	C5H12FO2P	P
Nerve (V)	**VS**	73835-17-3	C12H28NO2PS	P, S, HNO
Nerve (V)	Edemo - **VM**	21770-86-5	C9H22NO2PS	P, S, HNO
Nerve (V)	RVX (Russian VX) - **VR**	159939-87-4	C11H26NO2PS	P, S, HNO
Nerve (V)	EA-3148	93240-66-5	C12H26NO2PS	P, S, HNO

(to be continued)

Agent Type	CW Agents (Military nomenclature)	CAS Number	Mol Formula	Detection Channel
Blister	Distilled mustard - **HD**	505-60-2	C4H8Cl2S	S
Blister	Mustard gas - **H**	505-60-2	C4H8Cl2S	S
Blister	Nitrogen Mustard - **HN1**	538-07-8	$C_6H_{13}Cl_2N$	HNO
Blister	Nitrogen Mustard - **HN2**	51-75-2	C5H11Cl2N	HNO
Blister	Nitrogen Mustard - **HN3**	555-77-1	C6H12Cl3N	HNO
Blister	Sesqui mustard - **Q**	3563-36-8	C6H12Cl2S2	S
Blister	Lewisite - **L1** (also **L**)	541-25-3	C2H2AsCl3	As
Blister	Lewisite - **L2**	40334-69-8	C4H4AsCl3	As
Blister	Lewisite - **L3**	40334-70-1	C6H6AsCl3	As
Blister	Mustard-Lewisite mixture - **HL**	505-60-2 & 541-25-3	C4H8Cl2S & C2H2AsCl3	S, As
Blister	Phosgene oxime - **CX**	1794-86-1	CCl2NOH	HNO
Blister	2-Chloroethyl ethyl sulfide - **T**	693-07-2	C_4H_9ClS	S
Blister	Phenyldichlorarsine - **PD**	696-28-6	C6H5AsCl2	As
Blister	Ethyldichloroarsine - **ED**	598-14-1	C2H5AsCl2	As
Blister	Methyldichlorarsine - **MD**	593-89-5	CH3AsCl2	As
Blood	Hydrogen cyanide - **AC**	74-90-8	HCN	HNO
Blood	Arsine - **SA**	7784-42-1	AsH_3	As
Blood	Cyanogen chloride - **CK**	506-77-4	CNCl	HNO
Choking	Nitric oxide - **NO**	10102-43-9	NO	HNO
Choking	Red phosphorus - **RP**	7723-14-0	P	P
Vomiting	Diphenylchloroarsine - **DA**	712-48-1	C12H10AsCl	As
Vomiting	Diphenylamine chloroarsine (Adamsite) - **DM**	578-94-9	C12H9AsClN	As
Vomiting	Diphenylcyanoarsine - **DC**	23525-22-6	(C6H5)2AsCN	As
Binary CW precursor	O-Ethyl O-2-diisopropylaminoethyl methylphosphonite - **QL**	57856-11-8	C11H26NO2P	P
Binary CW precursor	Methylphosphonic difluoride - **DF**	676-99-3	CH3F2OP	P
Nerve toxin	Tetrodotoxin - **PP**	4368-28-9	C11H17N3O8	HNO
Nerve Toxin	Saxitoxin - **TZ**	35523-89-8	$C_{10}H_{17}N_7O_4$	HNO
Incapaciting	3-Quinuclidinyl benzilate - **BZ**	6581.06.2	C21H23NO3	HNO
Tear	23% CN, 38% chloropicrin, 38.4% chloroform **- CNS**	532-27-4 & 76-06-2	CCl3NO2 & C6H5COCH2Cl	HNO
Tear	Bromobenzyl cyanide - **CA**	16532-79-9	C8H6BrN	HNO
Tear	O-chlorobenzylidenemalononitrile - **CS**	2698-41-1	C10H5ClN2	HNO

List of TICs detected by AP4C series detectors

	Agents Detected			
ITF 25 Class	**Name**	**CAS Number**	**Mol Formula**	**Detection Channel**
High	Ammonia	7664-41-7	NH3	HNO
High	Arsine	7784-42-1	AsH3	AS
High	Carbon disulfide	77-15-0	CS2	S
High	Hydrogen cyanide (AC)	74-90-8	HCN	HNO
High	Hydrogen sulfide	7783.06.4	H2S	S
High	Nitric acid	7697-37-2	HNO3	HNO
High	Phosphorus trichloride	7719.12.2	PCL3	P
High	Sulfur dioxide	7446.09.5	SO2	S

	Agents Detected			
ITF 25 Class	**Name**	**CAS Number**	**Mol Formula**	**Detection channel**
Medium	Acetone cyanohydrin	75-86-5	C4H7NO	HNO
Medium	Acrylonitrile	107-13-1	C3H3N	HNO
Medium	Allylamine	107-11-9	C3H7N	HNO
Medium	Carbonyl sulfide	463-58-1	COS	S
Medium	Chloroacetonitrile	107-14-2	ClCH2CN	HNO
Medium	Chlorosulfonic acid	7790-94-5	HSO3CL	S
Medium	1,2-dimethylehydrazine	540-73-8	C2H8N2	HNO
Medium	Dimethyl sulfate	77-78-1	C2H6O4S	S
Medium	Methanesulfonyl chloride	124-63-0	CH3ClO2S	S
Medium	Methyl hydrazine	60-34-4	CH6N2	HNO
Medium	Methyl isocyanate	624-83-9	C2H3NO	HNO
Medium	Methyl mercaptan	74-93-1	CH4S	S
Medium	N-butyl isocyanate	111-36-4	C5H9NO	HNO
Medium	Nitrogen dioxide	10102-44-0	NO2	HNO
Medium	Phosphine	7803-51-2	PH3	P
Medium	Phosphorous pentafluoride	7647-19-0	PF5	P
Medium	Sulfur trioxide	7446.11.9	SO3	S
Medium	Sulfuryl chloride	7791-25-5	SO2CL2	S
Medium	Tert-octyl mercaptan	111-88-6	C8H18S	S

	Agents Detected			
ITF 25 Class	**Name**	**CAS Number**	**Mol Formula**	**Detection channel**
Low	Allyl isothiocyanate	57-06-7	C4H5NS	S, HNO
Low	Arsenic trichloride	7784-34-1	AsCl3	As
Low	Cyanogen	460-19-5	C2N2	HNO
Low	Diphenylmethane-4'-diisocyanate	101-68-8	C15H10N2O2	HNO
Low	Ethylene imine	151-56-4	C2H5N	HNO
Low	Ethyl phosphonothioic Dichloride	993-43-1	C2H5Cl2PS	P & S
Low	Ethyl phosphonous dichloride	1498-40-4	C2H5Cl2P	P
Low	Isopropyl isocyanate	1795-48-8	C4H7NO	HNO
Low	Parathion	56-38-2	C10H14NO5PS	P, S, HNO
Low	Perchloromethyl mercaptan	594-42-3	CCl4S	S
Low	N-butyl isocyanate	1609-86-5	C5h9NO	HNO
Low	Sulfuryl fluoride	2699-79-8	SO2F2	S
Low	Tert-butyl isocyanate	1609-86-5	C5H9NO	HNO
Low	Tetaethyl pyrophosphate	107-49-3	C8h20O7P2	P
Low	Toluene diisocyanate (TDI)	26471-62-5	C9H6N2O2	HNO

All references

Proengin Detection Systems are in Service in more than 40 countries in various organizations:
Army, Navy, Air Forces, Police, Civil Defense, Borders squads, Fire Brigades, Customs Forces.

Number of AP2C and AP4C units already supplied

France	4000 units
Israel	800 units
Canada	440 units
Saudi Arabia	356 units (ongoing program)
UK	110 units
USA	800 units
Japan	750 units
Sweden	250 units
Portugal	94 units
Spain	60 units
Italy	80 units
Australia	147 units
Taiwan	37 units
Poland	120 units
China	110 units
India	80 units
Norway	15 units
Switzerland	15 units
Greece	8 units

Singapore, Vietnam, Morocco, Belgium, Pakistan, Kuwait, UAE, and so on.