Chemical Warfare

1. History

Illustration 1: The haunting image of British soldiers blinded by a chemical attack in the First World War

First real use of chemical weapons was the deployment of the French ethyl bromoacetate tear-producing hand grenade in 1912 designed to be used to clear bunkers. When they were first used in 1914 however they were used in the open and ineffective. The same chemical was also used by some reservist policemen who brought 26mm tear gas rifles from their police forces with them. These too proved ineffective on the battlefield. The French then seemed to drop the idea but it was taken up by the Germans who developed 105mm howitzer shells filled with dianisidine chlorousulphate, again an irritant gas combined with a small explosive charge. These were fired at British and French troops on 27th October 1914. They were so ineffective that the targets of the 3000 rounds did not even notice. The 150mm T shell used against the Russians on 15th January 1915 was similarly ineffective.

"I always used to hate NBC drills. All that 'mask in nine' stuff. And as for CS gas, well I hated the stuff it felt like being drowned in a decaying sheep. Once we heard it had kicked off in China though we all took an interest pretty damn quick let me tell you."

Captain Dan Smith

1 Light Infantry quoted in "Horrors of War" Lever Books 2025

By 22nd April 1915, the Germans had however developed the use of chlorine gas dispersed from cylinders to break the trench deadlock. A deserter, patrols and aerial photographs all gave information about the impending attack but it was dismissed by British Intelligence as such an attack "was considered technically impossible." On one day 5,000 troops were killed by this blister agent and many more disabled for life. Such was the effect that the Germans were unable to fully follow up the chemical attacks. By their next use two days later the first extremely crude respirators were available as a counter measure. Within months both sides were using gas and soon the use of mustard gas required the use of not just a respirator but also the protection of exposed skin (mustard gas can easily penetrate leather and fabric).

On the Eastern Front, the Russians developed no chemical protective equipment (the poor industrial base was struggling with even rifles and ammunition). It is estimated that over half a million chemical warfare casualties were suffered by the Russians (62% of the total). After the war the Soviets became determined that they would never again suffer and chemical warfare was given a priority. In 1925 the Geneva Protocol was signed at the League of Nations, banning the use of (but not research into) chemical weapons. The US did not however ratify the treaty until 1970 and the USSR did not attend.

Illustration 2: Ju88 bombing the SS John Harvey at Bari

In between the wars, chemicals were used in a number of colonial campaigns, most notoriously by the Italians in Ethiopia, but also by the French in Morocco. They were also used extensively by the Japanese in China.

World War Two saw little military use of chemical weapons (although all sides created large stockpiles). The only major gas-related incident was at Bari in Italy when an air raid resulted in the dispersal of American mustard gas from a ship docked in the

harbour killing a large number of both military and civilians. German advances in technology were extensive however (in particular G type nerve agents which came as a nasty shock for the allies – these were not used as Hitler believed that the Americans with their huge chemical and insecticide industries had developed the comparable agents) and much of this was captured by the Russians. They moved entire manufacturing facilities of tabun and soman to a new site built at Volgograd (then called Stalingrad). This remained the biggest manufacturing facility for chemical weapons in the Soviet Union until it was destroyed by a Trident II missile launched from the USS West Virginia (SSBN-736) an Ohio class submarine on 3rd December 1997.

A programme of co-opertation between the US and the UK after a UK breakthrough resulted in the creation of VX gas. A plant to create this was built at Newport Indiana (the UK built a plant in Nancekuke in Cornwall but never manufactured the agent). During the 1970s many of the 124 tons of VX were destroyed or dumped by the US (mainly due to the difficulties of safe storage). By the start of the war in 1995 however substantial stockpiles remained.

Also in the 1950s the use of pesticides was pioneered by the British in Malaysia with mixed results. Many of the lessons were applied by the US in the defoliation programmes in Vietnam (which included the infamous use of Agent Orange which would causes cancers and birth defects).

In the 1980s attempts were made to create binary agents, here two chemicals (both entirely safe on their own) that would react to form a gas were held separately within the warhead until required to mix. A number of these were deployed by NATO in the late 80s.

The Soviets in Afghanistan were believed to be using some form of chemical referred to as “Yellow Rain.” No evidence of this has however ever been forthcoming.

Chemical use was confirmed however in the Iran-Iraq War when mustard (H) gas was confirmed and blood and nerve agents reported to have been used. Saddam Hussain also used them on the Kurds in the north, infamously at Halabjah.

Illustration 3: VR55 being released against the remnants of the Yugoslavian army near Lake Balaton

In 1996 chemical weapons were used in China by the Soviets, reports indicate that these were predominantly GD, GX and VR55. Used extensively against the under-prepared Chinese their effect was devastating. It has been estimated that Chinese chemical casualties are over a million military and at least half as many civilian.

When battlefield nuclear weapons were used in Europe, the Soviets responded with chemical weapons, initially aimed at NATO countries who were without chemical weapons. This restriction quickly lifted as the US provided chemical weapons (mainly dropped from aircraft) in support of their allies.

Illustration 4: British troops of an unknown unit - Fulda August 1998

In Iran chemical weapons have been used heavily with the Soviets using them to great effect against the initially less well prepared Iranians. They have generally avoided hitting US or British troops with them and CENTCOM has refrained from widespread use against the Soviets. The Iranians however

having been the target of such attacks in the 1980s by Iraq are far happier to use them on the Soviets having a widespread mustard (H) agent production programme and a smaller blood and nerve agent programme (which came as a surprise to both their Soviet enemies and CENTCOM allies).

Korea has seen the most widespread use of chemical weapons relative to the size of the forces. Here the North Korean attack into the South included chemical weapons from the outset. The US has responded in kind and casualties on both sides were high. It can be considered one of the reasons that Korea has collapsed into such anarchy.

Illustration 5: Propaganda photo of Iranian troops equipped with US NBC gear and locally made respirators. Few Iranian units were this well equipped.

There are a number of ways to deliver chemical weapons. The first used was a grenade containing the chemical and a bursting charge to spread it over a small area. Chemicals can also be stored in cylinders or drums. This is the normal method of storing the chemicals until they are required. They can be used in this way as defoliant-type dispersal from aircraft (such as the TMU-28 used by the F4 Phantom II carrying 615kg of VX) or helicopters (or theoretically ground vehicles). Alternatively a valve can be opened on them to disperse over an area (taking account of the wind). In one known incident a small cylinder with an explosive booby trap was used by the Soviets in Iran. The device was unfortunately triggered resulting in the deaths of a number of members of the Iranian 20th Airmobile Brigade and nearby civilians. Artillery is however the most common way to deliver chemicals during the war.

Illustration 6: US Mk116 Weteye bomb loaded on an A6E belonging to the VA-185 "Nighthawks" prior to launching of the USS Midway to strike a target in North Korea

In September 1997 NATO forces were given a huge shock when the Soviets first used the binary Nivichok ("Newcomer") type of nerve agent they had perfected in the early1990s. This was undetectable by normal NATO detection equipment and could defeat the NATO NBC systems (except for the overpressure system on vehicles). Used against the German 7th Panzer Division in Czechoslovakia, it inflicts heavy losses on the 21st Panzer Brigade "Lipperland" which breaks in panic. NATO examination of unexploded rounds reveal that atropine can act as a counter-measure but that it is 3-4 times more lethal than VX so requires urgent administration.

France is known to have also created a new generation of chemical weapons with a programme started in 1987. These have not been seen so no details are available.

"Whilst new detection systems are developed all Soviet artillery attacks should be assumed to contain this new agent and troops should mask immediately. "

German directive issued 15 September 1997 (Bundersarchive)

2. Chemical Warfare Equipment

A number of defences against chemical attacks are available:

All suits listed below come with small repair patches, gloves and over boots.

Chemical detector paper

Detects and identifies the varieties of chemical agents in common use. It changes colour in the presence of chemical agents. Disposible. Note that it does not detect the Nivichok nerve agent. Examples include the US M9.
Wt: Negligable
Price $20 (C/R)

Chemical sniffer

Detects and identifies the varieties of chemical agents in common use. It is reusable and constantly in operation if power is supplied. Powered by internal batteries. Gives an audible and/or visual alarm when in contact. Note that it does not detect the Nivichok nerve agent. Examples include the Warsaw Pact PkhR.
Wt: 2kg
Price $500 (C/C)

Chemical sniffer, optical

Detects and identifies the varieties of chemical agents in common use. It is reusable and constantly in operation if power is supplied. Powered by internal batteries. Gives an audible and/or visual alarm when in contact. Note that it does **not** detect the Nivichok nerve agent. Examples include NAIAD and CAM.
Wt: 2kg
Price $2000 (S/R)

Chemical sniffer, optical (advanced)

An enhanced version of the chemical sniffer rushed into service when the Nivichok agent was first used. Detects and identifies the varieties of chemical agents in common use. It is reusable and constantly in operation if power is supplied. Powered by internal batteries. Gives an audible and/or visual alarm when in contact. Note that it **does** detect the Nivichok nerve agent.
Wt: 2kg
Price $3000 (R/-)

Illustration 7: Soviet troops decontaminating in Poland

Chemical suit (butyl rubber)

The standard suit of Warsaw Pact armies, known as the OP-1. It is made of completely impermiable butyl rubber. Sometimes referred to as a “Womble” suit by British soldiers based on the similarity to the children's TV characters of that name. Causes fatigue at the rate of 1 level per 30 min worn in temperate climates, double that in tropical or desert conditions. Their one advantage is they do not degrade.
Wt: 8kg
Price $600 (S/C)

"Our suits are bad enough, you sweat buckets, you can't hear properly and as for having a dump well.... still it's better that than the Soviet kit, I put it down to their liking of saunas personally."

Sergeant "Taff" Talbot

3WFR in a BBC interview 05/09/1997

Chemical suit (butyl rubber), Lightweight
A lighter version of the OP-1 suit known as the L-1. Causes fatigue at the rate of 1 level per 30 min worn in temperate climates, ever 20 min in tropical or desert conditions. Their one advantage is they do not degrade.
Wt: 6kg
Price $800 (R/S)

Chemical suit (butyl rubber), Cooling overgarment
A light cotton overgarment designed to reduce overheating in warm conditions. If it is kept wet then the evaporation cools the inner suit. If kept wet it allows a roll of 7+ on 1D10 to avoid each level of fatigue loss. Very little used by the army due to the difficulty of keeping it wet.
Wt: 2kg
Price $200 (V/V) – based on ease of manufacture. Official issue are (R/S)

Chemical suit (charcoal)

The western version of the NBC or MOPP suit. This has a charcoal lining to absorb chemicals but allow some ventilation. The downside is they become useless after 24 hours (this can be reduced by a factor of 4 in heavy rain). Causes fatigue at the rate of 1 level per hour worn in temperate climates, ever 30 min in tropical or desert conditions.
Wt: 4kg
Price $1000 (C/R)

Illustration 8: Canadian troops of the 1st Bn 22e Rgt in NBC with Blowpipe missile, late 1997

Chemical suit (charcoal), Casualty bag
Basically a large bag into which casualties on a battlefield are placed. They include a window to monitor the casualty. A respirator is not required as the bag fully seals and incorporates breathing filters. Degrades after 24 hours as per a normal suit.
Wt: 4kg
Price $800 (S/R)

Respirator
Covers all models such as the US M17/M17A1 (which include a hood), UK S6 and S10 (which includes a drinking straw) and Soviet ShM. All are functionally identical in game terms.
Wt: 1kg
Price $150 (V/V)

Illustration 9: Blurred image of a member of the US 25th Infantry Division with M17 respirator under chemical attack in Korea

Respirator, advanced
Covers models of respirator introduced after the war starts with two separate filter cartridges (allowing one to be changed while breathing through the other) such as the UK S12 and US M17A2. All are functionally identical in game terms.
Wt: 1kg
Price $200 (S/R)

Respirator filters (spare)
Spare filters for respirators. Each is normally good for 24 hours of use against normal chemicals (some degrade it faster – see the notes on specific agents). They will fail each hour after that on a roll of 9+ on 1D10.
Wt: 0.25kg
Price $20 (V/V)

Steam decontamination trailer
Operates from an integral 60kwt generator (requires fuel as per p59 of the main rules). Removes radioactive particles and chemical agents from the outside of vehicles. It will not make a radioactive object safe – it just rinses off fallout and the like.
Wt: 1ton
Price $5000 (S/C)

Illustration 10: Turkish F16 from the 141st Fighter Bomber Filo (Squadron) carrying US supplied VX taking off to engage Bulgarian troops.

3. Agent effects

Agent	Name	Type	Used by	Time before effective	Duration of cloud	Persistent	Effect	Effect of masked	Effect if suited and masked	Counter measures	Notes
AC or HCN	Prussic Acid hydrogen cyanide	Blood agent	–	Immediate	10 turns	Yes – 1D10 hours	As rules	No effect – filter becomes useless after 4D6 minutes	No effect	Reduce by holding breath as per rules	
CG	Phosgine	Chocking agent	--	Immediate	20 turns	No	As rules for blood agent but 1D6 damage only – half damage will be permanent	No effect	No effect	--	Damage does not start for 3D6 x 20 turns and lasts as long as exposure
CK	Cyanogen chloride	Blood agent	–	Immediate	10 turns	Yes – 1D10 hours	As rules	No effect – filter becomes useless after 4D6 minutes	No effect	Reduce by holding breath as per rules	Also has effect of an irritant gas
CN	Chloroacetophenone	Tear agent	Widespread	Immediate	20 turns	No	As rules but may reroll one of the tests each turn on a fail	No effect	No effect	--	
CS	CS	Tear agent	Widespread	Immediate	20 turns	No	As rules	No effect	No effect	--	
CS1	CS	Tear agent	Widespread	Immediate	20 turns	Yes – 2D6 days	As rules	No effect	No effect	--	
CS2	CS	Tear agent	Widespread	Immediate	20 turns	Yes – 3D10 days	As rules	No effect	No effect	--	
CX	Phosgine oxime	Blister agent	--	Immediate	30 turns	Yes – 3D6 hours	As rules	Reduced effect – as rules	No effect	--	
DA	Diphenchloroarsine	Vomiting agent	--	1D6 actions	20 turns	No	See below	No effect	No effect	--	
DC	Diphenylcanoarsine	Vomiting agent	--	Immediate	20 turns	No	See below	No effect	No effect	--	
DM	Asamsite	Vomiting agent	Soviet	Immediate	16 turns	No	See below	No effect	No effect	--	
DP	Diphosgine	Chocking agent	--	Immediate	20 turns	No	As rules for blood agent but 1D6 damage only – half	No effect	No effect	--	Damage does not start for 3D6 x 20 turns and

							damage will be permanent				lasts as long as exposure
ED	Ethyldichloroarsine	Blister agent	--	1D6 turns	20 turns	Yes – 2D6 hours hours	As rules	Reduced effect – as rules	No effect	--	
GA	Tabun	Nerve agent	Soviet – known to be manufactured elsewhere	1 turn	20 turns	No	As rules	No effect	No effect	Atropine	
GD	Soman	Nerve agent	Soviet	Immediate	20 turns	No	As rules	No effect	No effect	Atropine (works of 4+ on 1D10)	
H and HD	Levinstein Mustard and Distilled Mustard	Blister agent	Widespread	1D6 turns	30 turns	Yes – 4D6 hours	As rules	Reduced effect – as rules	No effect	--	
HL	Lewisite mustard	Blister agent	--	Immediate	30 turns	Yes – 4D6 hours	As rules	Reduced effect – as rules	No effect	--	A mix of H and L
HN1/2/3	Nitrogen mustard	Blister agent	Widespread	1D6 turns	30 turns	Yes – 6D6 hours	As rules	Reduced effect – as rules	No effect	--	
HT	Sulpher chloine mustard mix	Blister agent	Widespread	1D6 turns	30 turns	Yes – 6D6 hours	As rules but subtract 1 from all damage dice	Reduced effect – as rules	No effect	--	A mix of H and a sulphur & chlorine compound
L	Lewisite	Blister agent	Widespread	Immediate	30 turns	Yes – 3D6 hours	As rules	Reduced effect – as rules	No effect	--	
MD	Methyldichloroarsine	Blister agent	--	1D6 turns	20 turns	Yes – 2D6 hours hours	As rules	Reduced effect – as rules	No effect	--	
NX	Nivichok	Nerve agent	Soviet	Immediate	20 turns	Yes – 2D6 hours	As rules	Reduced damage – becomes useless after 2D6 minutes	Reduced damage – becomes useless after 2D6 minutes	Atropine	
PD	Phenyldichloroasine	Blister agent	--	1D6 turns	16 turns	Yes – 1D10 hours	As rules but also causes vomiting – see below	Reduced effect – as rules	No effect	--	
SA	Arsine	Blood agent	Very rare	Immediate	6 turns	Yes – 1D10 hours	As rules but 1D6 damage to chest only and 1D6 damage to	No effect – filter becomes useless after 4D6 minutes	No effect	Reduce by holding breath as per	Damage does not start for 3D10 x 30 turns

							abdomen			rules	and lasts as long as exposure
SB	Sarin	Nerve agent	Soviet & US	1 turn	20 turns	No	As rules	No effect	No effect	Atropine	
VR55	VR55	Nerve agent	Soviet	Immediate	20 turns	Yes – 1D10 hours	As rules	Reduced damage	No effect	Atropine	
VX	VX	Nerve agent	US	Immediate	20 turns	Yes – 1D10 hours	As rules	Reduced damage	No effect	Atropine	

Illustration 11: CS Gas in action. Taken from "Training for the Unthinkable." Life Magazine 1995

New rule: Vomiting agents

These have the same effect as irritant agents in the rules but in addition to being incapacitated the casualty is also vomiting. This will result in them removing their mask (if worn), exposing them to other agents. It is a common tactic to include vomiting agents at the start of a more deadly chemical attack.

"Ivan likes to chuck a few vomiting agent rounds over at the start of a barrage. If that gets into your system...well let's put it this way it's hard for a respirator to work if it's full of regurgitated rat pack."

Captain Paul Oliver

49 Brigade NBC Officer briefing recruits