

MIRA
SAFETY

BULLETIN

Hi Roman,











I'm writing this email in response to what's happening in Ohio. Over the last few days, we've received an overwhelming amount of questions surrounding the train derailment and spill; and the effectiveness of our products regarding protecting yourself and your family.

Below, you will find a list of chemical threats released in Ohio (the ones that we know of) and the effectiveness of the **NBC-77 SOF filter** in capturing those threats.

First, it's essential to understand how filters are classified. If a filter is certified per the EU standard, it will have an alpha-numeric code on the label, which will dictate which threats it's effective against and at which concentrations.


Rating of the **NBC-77 SOF**: A2B2E2K2HgSX P3 D R Reactor

Here is an image to decipher this code:

Colour code	Filter type	Contaminants present	Typical applications and their contaminants
	AX	Gases and vapours of organic compounds with boiling point < 65°C	e.g. handling of acetone
	A	Gases and vapours of organic compounds with boiling point > 65°C	e.g. handling of solvent vapours during painting, paint removal or gluing (A filter with additional particle protection)
	B	Inorganic gases and vapours, e.g. chlorine, hydrogen sulphide, hydrogen cyanide	e.g. during welding (ABE P filter)
	E	Sulphur dioxide, hydrogen chloride	e.g. cleaning with acids (ABE P filter)
	K	Ammonia and organic ammonia derivatives	e.g. handling of liquid manure (ABEK-Filter)
	CO	Carbon monoxide	e.g. protection against fire gases (as an escape device), handling of hydrogen (CO NO P filter)
	Hg	Mercury vapour	e.g. handling of chemicals (ABEK Hg P filter)
	NO	Nitrous gases including nitrogen monoxide	e.g. handling of ammonium nitrate or ozone (NO P filter)
	Reaktor	Radioactive iodine including radioactive methyl iodide	
	P	Particles	e.g. grinding, cutting, drilling, contact with bacteria or viruses



Example:



A2B2P3

A filter with the above mentioned colour code is suitable for the following contaminants:

- A** gases and vapours of organic compounds with a boiling point > 65°C up to concentrations covered by filter class 2 (max. 5000 ppm)
- B** inorganic gases and vapours, e.g. chlorine, hydrogen sulphide, hydrogen cyanide, up to concentrations covered by filter class 2 (max. 5000 ppm)
- P** particles up to concentrations covered by filter class 3

We have also provided a list of known threats from the Ohio train derailment and chemical spill:

Vinyl chloride: A colorless gas used to make polyvinyl chloride (PVC) plastics, it is highly flammable and decomposes to produce toxic fumes. According to the National Library of Medicine, it is also carcinogenic and can cause other health issues.

NBC-77 SOF Effectiveness: type A or better AB - the NBC-77 SOF provides reliable and long-term protection against this threat. We tested this a couple of years ago with the same filter in actual conditions at the factory—which produces vinyl chloride, and produced excellent results.

Isobutylene: a gas used in antioxidants – including food, packaging, supplements, and plastics (butyl rubber) and in the production of high-octane aircraft fuel.

NBC-77 SOF Effectiveness: the boiling point is very low, so even an AX filter should not be used, and at high concentrations, only SCBA filters should be used. Low concentrations are not toxic, but higher concentrations may have a narcotic effect depending on the exposure time. Of course, very high concentrations may have a lethal impact.

Butyl acrylate: is a clear liquid used to make paints, sealants, and adhesives. It is flammable and can cause skin, eye, and respiratory irritation.

NBC-77 SOF Effectiveness: type A - boiling point 138°C - the filter provides long-term reliable protection.

Ethylhexyl acrylate: is a colorless liquid used to make paints and plastics. It can cause skin and respiratory irritation and, under moderate heat, can produce hazardous vapor.

NBC-77 SOF Effectiveness: type A - boiling point 214°C - the filter provides long-term and reliable protection.

Ethylene glycol monobutyl: a colorless liquid used as a solvent for paint, inks, and some dry cleaning solutions. It is classified as acutely toxic, can cause severe or permanent injury, and is highly flammable. Vapors can irritate the eyes and nose, and ingestion can cause headaches and vomiting.

NBC-77 SOF Effectiveness: type A - boiling point 171°C - the filter provides long-term and reliable protection.

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Please Note: Organic gases like methane, ethane, propane, butane, and isobutylene can not be effectively adsorbed by physical adsorption. Therefore no filter should be used for protection against those gasses. The good thing is that these gases are not highly toxic. When you use propane/butane while cooking on a barbecue, you can inhale small amounts without the risk of poisoning. But at very high concentrations, we recommend using isolation PPE (SCBA) for protection.

Here are some resources from our blog with more info:

[Gas Mask Filter Buyer's Guide \[2023 Update\]](#)

[SPECIAL REPORT: What The Train Derailment in East Palestine, Ohio, Can Teach Us About CBRN Events](#)

All the best, and stay safe!
Roman Zrazhevskiy
Founder & CEO of MIRA Safety



CBRN Gas Mask Filter
NBC-77 SOF 40mm
Thread

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Elite personal protection equipment designed for professionals -- now available for the general public.

MIRA Safety offers high-quality gas masks, PAPR systems, protective coveralls, and other tactical gear designed to protect you and your family from harsh conditions and dangerous threats. Trusted by the U.S. Department of Defense and other agencies around the world, our equipment has earned the trust of the international community thanks to our competitive prices and firm commitment to quality workmanship.

We'll use these emails to tell you about our newest protective gear, inventory updates, special discounts, and more. If you'd like to adjust how often you hear from us, you can update your preferences [here](#).

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