

FAST ACT

Single Window Solution to Neutralise Known & Unknown Toxic Chemicals, Vapours & Gases and Decontaminate the Equipment

**For H2S,
Industrial
Chemical & CWA
Neutraliser**

Successfully trial
evaluated against
H2S threat by IOCL
**Recommended
by OISD**



First Applied Sorbent Treatment - Against Chemical Threat

GeM
Government
e Marketplace
<https://www.gem.gov.in>

FASTACT USPs

- Real time, on-site neutralisation of chemical threats
- Effective against vapours, fumes and liquids
- Safe, non toxic, non corrosive
- Ready to use formulation - no mixing, no water required
- Wide spectrum toxicity management
- No residual hazard - easy disposal
- Mitt has been designed to decontaminate equipments, clothes, weapons, helmets, etc.
- Can be use in open areas for self safety in case sudden release of chemicals (escape path)



TECHNOLOGY

FAST-ACT is a combination of common metal oxides (MgO + TiO₂) with a unique morphology.

It has nanomaterial properties with a final particle size of nearly 5µm. The production process creates an altered, non-toxic molecular structure with large increase in porosity and surface area.

HOW DOES IT WORK ?

Nanomaterials by nature want to agglomerate and because the molecular structure of FAST-ACT is incomplete, it binds to any reactive substance using "ionic bonding". It uses the targeted chemical's ions to try and complete its own structure, as a result many hazardous chemicals are neutralised through a process now known as "destructive adsorption".

The large surface area with numerous corners and edges containing many unsaturated ions make it effective on liquids and vapours of hazardous compounds.

FAST-ACT literally binds and destroys the contacted chemical with a resultant non-hazardous, neutralised by-product.

FAST-ACT residue is MgS after reaction with H₂S

APPLICATION AREAS

- To neutralise H₂S threat on board naval ships
- To neutralise H₂S threat in refineries (SRUs, FCC, CRU, DHDS, DHD, HCU)
- To neutralise H₂S threat in sludge handling areas, tail gas unit, amine regeneration units and areas where ever H₂S presence is expected in refineries
- The chemical warfare agents if used in govt buildings or metros or any other places
- Chlorine and Ammonia leak threats are neutralised
- All known and unknown toxic vapour, gases and chemical threats except in solid state

TESTED & CERTIFIED BY

- TNO Laboratories, Netherlands
- Battelle Memorial Institute Columbus, OH, USA
- The Edgewood Chemical Biological Center (ECBC), Aberdeen Proving Ground, MD, USA
- Toxicology Unit, School of Medical Sciences, RMIT, Australia
- NATO approved personal decontamination kit and personal Decontamination Apparatus

Capacity	1kg / 2kg / 4kg Decontamination Powder (Nanomaterials) in pressurized vessel
Operating Pressure of the container	180 - 220 PSI (up to 15 BAR)
Discharge time	Not more than 2 min
Pressure gauge	Yes Provided (easy to read). 2Nos.
Gas used for pressurization	Nitrogen
Discharge Hose & Nozzle	Nozzle that can spray the powder evenly and easily and shall not get corroded/clogged on exposure to chlorinating compounds.
Container / Vessel	HDPE white color vessel Test pressure: 22 Bar and Burst pressure 55 Bar (Minimum) as per TC of Manufacturer or as per guidelines
Color and form of material/ particles	White dry powder

Powder major ingredient	Dry Chemical powder formulation of non-toxic Nano crystalline metal oxides (primarily TiO ₂ and MgO)
Gross Weight (including powder)	1kg Nanomaterials in 2kg Pressurized Cylinder - 2.1± 10% 2kg Nanomaterials in 6kg Pressurized Cylinder - 4.4± 10% 4kg Nanomaterials in 9kg Pressurized Cylinder - 6.7± 10%
Dimension (Height x Diameter) mm	2kg - 410 x 125, 6kg - 570 x 178, 9kg - 640 x 210
Test Reports	TNO, Netherlands/Beattle/SBCCOM or Lloyds for H ₂ S neutralisation
Life of Decontamination Powder	5 Years from the date of filling of vessel
Hose material as per EN standard (applicable for 6kg & 9kg pressurised cylinders)	EPDM

NEUTRALISATION

ADSORPTION

NON EFFECTIVE

CORROSIVE MATERIALS

ACIDS

Inorganic and Organic
Hydrochloric Acid
Hydrofluoric Acid
Nitric Acid
Phosphoric Acid
Sulphuric Acid
Acetic Acid
Methanesulfonic Acid
Ethanesulfonic Acid
Benzenesulfonic Acid
Toluenesulfonic Acid
Hydrogen sulfide (H₂S)

BIS (2-CHLOROETHYL) SULFIDE

PINACOLYL METHYLPHOSPHONOFUORIDATE

O-ETHYL S (2-DISSOPROPYLAMINOETHYL) - MET HYLPHOSPHONOTHIOATE

CARBONYL COMPOUNDS

Aldehydes
Ketones
Carboxylic Acids

NITROGEN COMPOUNDS

Acetonitrile
Sodium Cyanide (AQ)
4-Vinylpyridine

HALOGEN / HALIDES

Acetyl Chloride
Chloroacetyl Chloride
Chlorine
Chloroform
Hydrogen Bromide
Cyanogen Chloride
Methylene Chloride
Carbon Tetrachloride
TCE, PCE

PHOSPHORUS

Pesticides
DimethylmethylPhosphnate
Paraoxon
Parathion

SULPHUR

2-Chloroethyl Ethyl Sulfide
Methyl Mercaptan

PHENOLS

Nitrophenols
Chlorophenols

CHEMICAL WARFARE AGENTS

Sulphur Mustard (HD)
Tabun (GA)
Sarin (GA)
Soman (GD)
VX & H₂S

VAPOUR HAZARDS

ACIDIC & CAUSTIC GASES

Hydrogen Chloride
Hydrogen Fluoride
Hydrogen Bromide
Nox/N₂O₄
Sulphur Dioxide

HALOGENS

Chloride
Bromine
Iodine

VOLATILE ORGANICS

Methyl Mercaption
Ethylene Oxide
Formaldehyde
Phosgene
Arsine

CHLORINATED

ORGANICS
Acetyl Chloride
Chloroacetyl Chloride
Chloroform
Methylene Chloride

LIQUID SOLVENT SPILL

ALCOHOLS / PHENOLS

Ethanol
Methanol
Allyl Alcohol
Nitrophenols
Chlorophenols

CAUSTICS

Metal Hydroxides (aq)

PETROCHEMICALS

Diesel
Gasoline
Oils

OTHERS

Acrylonitrile
Benzene
Hydrazine
Toluene
Acrolein
Methylhydrazine*
Methylisocyanate*

BIOLOGICALS

Bacteria
Viruses
Spores

NUCLEAR

RADIOLOGICAL

HEAVY METALS

SOLID WASTE

CLIENTS



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