

# FAST-ACT<sup>®</sup>

## Chemical and Vapour Neutralisation



**FAST-ACT<sup>®</sup> the only product available in the world that provides an immediate response to neutralise toxic chemical vapour and off gassing. It can be safely applied to any toxic vapour release or liquid spill.**

**EFFECTIVE** against vapour hazards such as:

- Anhydrous ammonia, choking agent
- Chlorine, choking agent
- Ethylene oxide
- Hydrogen chloride, also considered a blood agent
- Nitrogen dioxide
- Sulphur dioxide

**EFFECTIVE** against Chemical Warfare Agents such as:

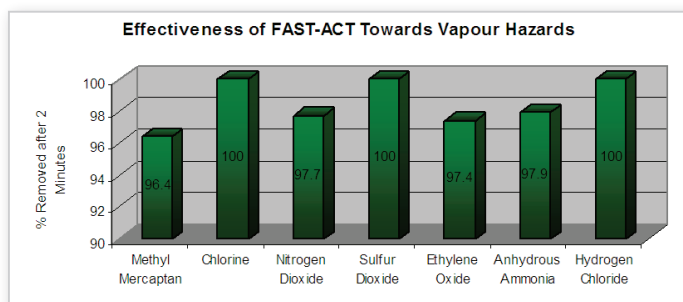
- Tear Gas, lachrymatory agent
- Distilled Mustard (HD), blistering agent
- Soman (GD), nerve agent
- VX, nerve agent

**SAFE**

- Non-toxic, non-corrosive, and non-flammable
- Dry powder formulation
- Blend of earth minerals

**EASY** to operate portable delivery systems

- No premixing required
- No special training necessary
- Compact containers for easy storage



Tested by U.S. Soldier Biological Chemical Command (SBCCOM) and Battelle Memorial Institute (Battelle), FAST-ACT is proven to remove over 99.6% (detection limit) of VX, GD (soman) and HD (mustard gas) from surfaces in under 90 seconds, converting them to safer by-products.

The percent of hazard removed after 2 minutes is illustrated below. The gases are

adsorbed very rapidly and they do not outgas from the powder.

FAST-ACT is very effective at neutralizing toxic industrial chemicals in vapour and liquid phase. The 2 minute data illustration below indicated immediate reaction with these toxic compounds creating a much safer working environment within a short period of time.

FAST-ACT<sup>™</sup> is a proprietary formulation of non-toxic nanocrystalline metal oxides that exhibit very high reactivity due to the increased surface area, unique morphology, additional functional groups on the surface, large porosities, small crystallite sizes and altered electronic state.

# Summary of Effectiveness

Neutralisation		Adsorption	Not Effective on	
<b>Corrosive Materials</b>		<b>Vapour Hazards</b>	<b>Liquid Solvent Spills</b>	
Acids Inorganic and Organic Hydrochloric Acid Hydrofluoric Acid* Nitric Acid* Phosphoric Acid Sulfuric Acid* Acetic Acid Methanesulfonic Acid Ethanesulfonic Acid Benzenesulfonic Acid Toluenesulfonic Acid  Phosphorus Pesticides DimethylmethylPhosphonate Paraoxon Parathion*  Sulfur 2-Chloroethyl Ethyl Sulfide Methyl Mercaptan  Phenols Nitrophenols Chlorophenols	Carbonyl Compounds Aldehydes* Ketones Carboxylic Acids  Nitrogen Compounds Acetonitrile* Sodium Cyanide (aq) 4-vinylpyridine  Halogens/Halides Acetyl Chloride Chloroacetyl Chloride Chlorine Chloroform Hydrogen Bromide* Cyanogen Chloride Methylene Chloride Carbon Tetrachloride TCE, PCE  Bis-(2-Chloroethyl) Sulfide  Pinacoyl methylphospho - nofluoridate  O-ethyl S- (2- dissopropylaminoethyl)met hylphosphonothioate	Acidic and Caustic Gases Hydrogen Chloride Hydrogen Fluoride Hydrogen Bromide* Nox/N2O4* Sulfur Dioxide Hydrogen Sulfide* Diborane* Hydrogen Selenide* Phosphine* Ammonia Anhydrous Ammonia* Carbonyl Sulfide Hydrogen Cyanide*  Chlorinated Organics Acetyl Chloride Chloroacetyl Chloride Chloroform Methylene Chloride  Halogens Chlorine* Bromine Iodine  Volatile Organics Methyl Mercaptan* Ethylene Oxide* Formaldehyde* Phosgene* Arsine*	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
LIQUID & VAPOUR CHEMICAL SPILLS AND RELEASES				
Note: Depending on the amount of ChemKlenz used, various chemicals may undergo a combination of neutralization, absorption, and/or containment. * Denotes Top 27 Toxic Industrial Chemicals (USA CHPPM)				



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