QDS-TM

advetage solutions

QUICK DECON SOLUTION- TRANSITION METALS

BENEFITS

SIGNIFICANT REDUCTION IN CRITICAL PATH TIME AND DOSE

NON-TOXIC, ENVIRONMENALY FRIENDLY & SAFE ON HUMAN SKIN

SIMPLE AND COST EFFECTIVE

Main Features

- **Safe & quick** ionic-focused solutions for removal of contamination
- Effective on **63 different radio-isotopes**
- **~80%-90% reduction** on 1st pass*
- **Non-Toxic,** Environmentally friendly
- **FDA approved** for use on intact human skin
- **Water based and "Resin Bed friendly"**
- **Cost effective**
- Available in **Field Ready kits** or **Pre-moistend wipes** for emergency response
- **10 year Shelf Life**

CONTACT US for samples or additional information

*shown in independent tests. Results may vary based on surface type and source term mix

Description

The core technology is called the "Mass Effect" influence. When our proprietary solutions are introduced to a contaminated surface, the radioactive material is lifted from the surface and suspended into the solution, where it can be easily wiped up or rinsed away as radioactive waste.

Our products are currently in use in commercial nuclear power plants, nuclear waste facilities and in hospitals, with a proven track record of significantly reducing time and dose on critical path applications such as Cavity Decon.

Each formulation is **ion-specific** and specially prepared to address a specific chemical group.

- Transition Metals
- Actinide Metals
- Halogens

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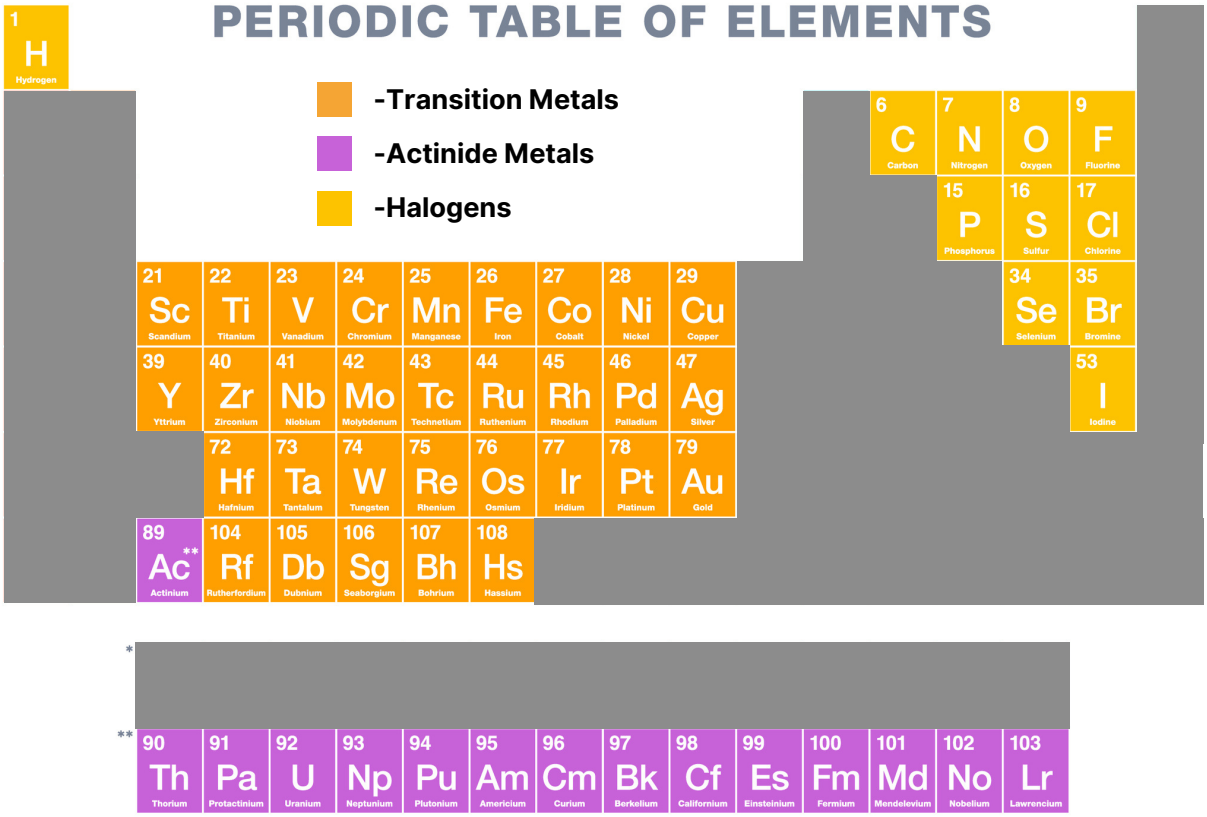
HOW IT WORKS



The **Transition Metal Mass Effect** solution will pick up all Transition Metals such as Cobalt, Strontium, Chromium, Manganese, Iron, Zinc & Nickel.

The **Actinide Mass Effect** solution will pick up all Actinide Metals such as Plutonium, Uranium, Titanium, Technetium, Americium, Radium, etc.

The **Halogen Mass Effect** solution will pick up all Halogens such as Iodine, Fluorine, Chlorine, etc.

Easily Application

1. Spray on.
2. Let the solution penetrate the area for 1-5 minutes.
3. Wipe down or rinse off.

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NUKE AWAY Decontamination Spray Bottle

Any of the QDS Solutions (Transition Metals, Actinides, or Halogens) are available for us in the Nuke Away dual sprayer.

The spray bottle dispenses two liquids at the same time at a predetermined, fixed dilution ratio. This makes it ideal for decontaminating surfaces where the radioactive source term is unknown.

Advantages

- Safe & quick ionic-focused solution for radiation removal
- Cost effective
- Safe surface radiation isotope remover
- First line for safe radiation defense
- Can be used on intact human skin
- Environmentally friendly
- Far superior to Radiacwash or any other similar product
- Effective on 63 different elements

QDS-TM GEL

QDS is available in two (2) solution types: Liquid Solution and GEL

The QDS GEL is designed to optimize time or vertical surfaces to improve first-pass decontamination results

Suggested Application for Reactor Cavity Decon using QDS TM GEL

1. Start decontamination of the cavity as you drain the water from the cavity.
   a. Use pressurized garden sprayers containing the undiluted Transition Metal TM solution
   b. Use “scrubbies” or equivalent cleaning tools as needed
   c. Use appropriate safety clothing and equipment as needed
2. As the water recedes from the cavity, exposing the “bathtub ring” or other residues, use the Quick Decon GEL solution with a cleaning rag/scrubbie, etc to scrub away the residues. Remember, the GEL is not a soap, some scrubbing may be necessary
3. Rinse away the scum residue with water (spray on with a hose or pressure washer) and possibly add additional Quick Decon GEL TM solution to the rinse as needed; continue spraying the walls down as the water recedes
4. Rinse away the Quick Decon GEL TM solution with water
5. After the cavity is drained, a final spray with Quick Decon GEL TM and rinse should complete the cavity decon

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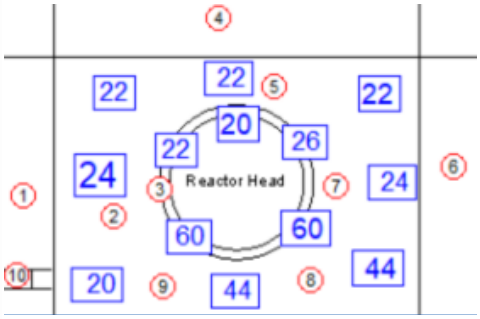
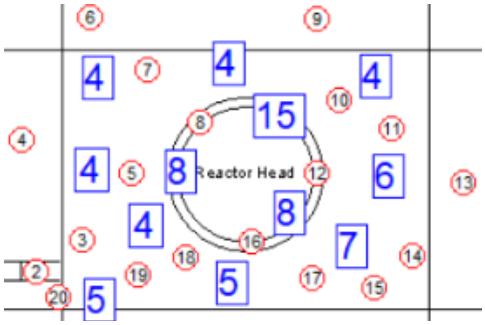
REACTOR CAVITY SURVERY RESULTS USING QDS-TM GEL

BEFORE QDS-TM

1	Smear	2	β 1,000,000	dpm/100 cm2	WALL
		4	α 48.9	dpm/100 cm2	
2	Smear	2	β 10,000,000	dpm/100 cm2	FLOOR
3	Smear	2	β 4,000,000	dpm/100 cm2	FLANGE
4	Smear	2	β 800,000	dpm/100 cm2	WALL
		4	α 23.47	dpm/100 cm2	
5	Smear	2	β 30,000,000	dpm/100 cm2	FLOOR
6	Smear	2	β 800,000	dpm/100 cm2	WALL
7	Smear	2	β 12,000,000	dpm/100 cm2	FLOOR
8	Smear	2	β 99,999,999	dpm/100 cm2	FLOOR
		4	α 0	dpm/100 cm2	
9	Smear	2	β 30,000,000	dpm/100 cm2	FLOOR
10	Smear	2	β 2,000,000	dpm/100 cm2	
		4	α 50.3	dpm/100 cm2	



AFTER QDS-TM



1	Smear	N/A	β/γ 5K	dpm/100 cm2	LADDER
2	Smear	N/A	β/γ 12K	dpm/100 cm2	LADDER
3	Smear	N/A	β/γ 60K	dpm/100 cm2	
		N/A	α <20	dpm/100 cm2	
4	Smear	N/A	β/γ 7K	dpm/100 cm2	WALL
5	Smear	N/A	β/γ 15K	dpm/100 cm2	
6	Smear	N/A	β/γ 10K	dpm/100 cm2	WALL
7	Smear	N/A	β/γ 80K	dpm/100 cm2	
		N/A	α <20	dpm/100 cm2	
8	Smear	N/A	β/γ 50K	dpm/100 cm2	
		N/A	α <20	dpm/100 cm2	
9	Smear	N/A	β/γ 20K	dpm/100 cm2	WALL
10	Smear	N/A	β/γ 15K	dpm/100 cm2	
11	Smear	N/A	β/γ 25K	dpm/100 cm2	
12	Smear	N/A	β/γ 3K	dpm/100 cm2	HEAD
13	Smear	N/A	β/γ 3K	dpm/100 cm2	WALL

INSTRUMENTS USED: LUDLUM-177 FRISKER, LUDLUM-9-3 ION, LUDLUM-2000 SCALER

Actual survey results using QDS for a Cavity Decon at an operating nuclear power plant

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