

D E C  N G E L TM

THE STRENGTH TO PULL OFF ANY JOB

SOLUTIONS FOR CHEMICAL AND RADIOACTIVE CLEAN-UP
A PRODUCT OF CBI POLYMERS

BHSC Fall '09 Meeting

Agenda

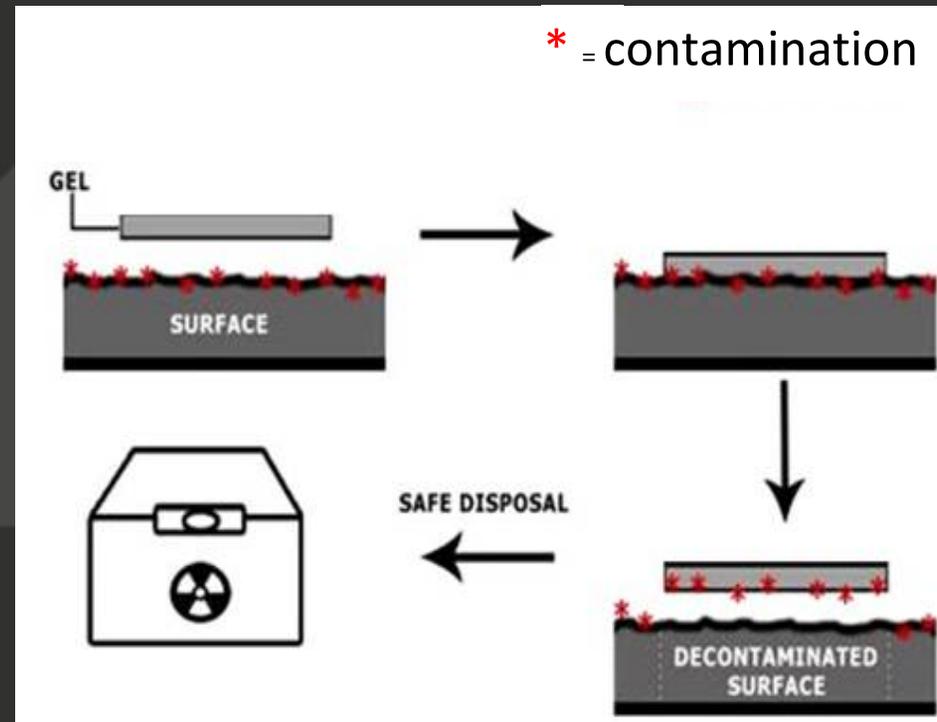
- CBI Polymers – DeconGel™
 - Brief History
 - DeconGel™ Overview
 - Key Benefits
 - Applications
 - Frequently Asked Questions

Brief History of CBI Polymers

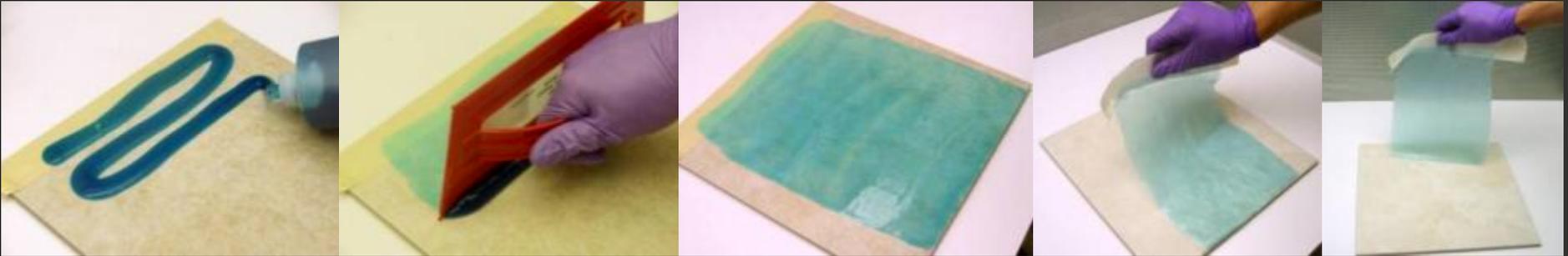
- Wholly-owned subsidiary of Cellular Bioengineering, Inc (CBI)
- Headquartered in Honolulu, Hawaii
- Funding from U.S. Department of Energy, CEROS, and Hawaii Technology Development Venture (HTDV) to develop product for radiological/nuclear/chemical decontamination
- DeconGel - from development to commercially available in 1 1/2 years
- Manufacturing, warehousing, repackaging and distribution operations in Ohio
- Over 40+ customers

What is DeconGel™ ?

- Neutral-pH, low odor polymer hydrogel for decontamination
 - Utilizes surfactants to lift contaminants
 - Soluble chelators bind contaminants for transport
 - Contaminants pulled into polymer upon drying (encapsulation)



Apply → Dry → Peel



- Immediate fixation of the contamination
- Safe and user-friendly
 - ~100 times less toxic than mouthwash
 - Near neutral pH
- Works on variety of substrates including concrete, tile and grout, linoleum, metals, and many more
- Effective on hydrophobic, hydrophilic, organic, inorganic, and particulate contaminants
- Easy application, removal, and disposal

Available in Three Versions



The image shows a thick, blue gel being applied from a nozzle onto a light-colored surface, forming a continuous, winding line.

DECONGEL™
1101
GEL

CBI POLYMERS
La Roche-sur-Yon, France
Distribuidor exclusivo en España: CBI Polímeros

DeconGel™ 1101 Gel

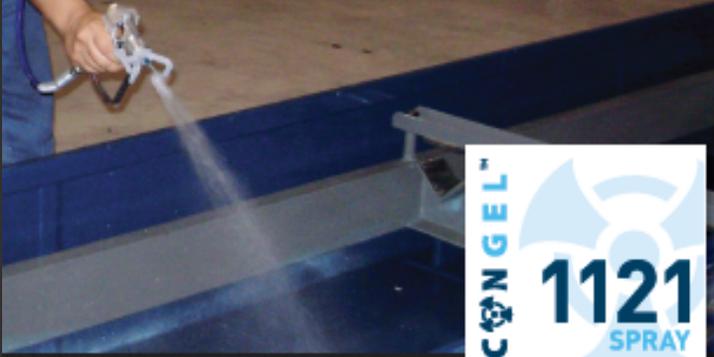


The image shows a person in a white lab coat using a yellow handheld power sprayer to apply a blue spray to a surface.

DECONGEL™
1120
SPRAY

CBI POLYMERS
La Roche-sur-Yon, France
Distribuidor exclusivo en España: CBI Polímeros

DeconGel™ 1120 Spray
FOR A HANDHELD POWER PAINTER



The image shows a person using an industrial airless sprayer to apply a blue spray to a dark blue surface.

DECONGEL™
1121
SPRAY

CBI POLYMERS
La Roche-sur-Yon, France
Distribuidor exclusivo en España: CBI Polímeros

DeconGel™ 1121 Spray
FOR AN INDUSTRIAL AIRLESS SPRAYER
ON NON-POROUS SURFACES

Current Methods of Decontamination

- Absorbent pads and powders
- Soap and water
- Chemical decontamination agents
- Peelable decontamination agents



Advantages of DeconGel™

- Easy to apply and peel, strong tensile strength
- Safe, non-toxic
- Limits exposure to workers due to encapsulation of contamination (does not generate airborne dust)
- Minimal waste generation means lower disposal costs
- Not labor intensive (i.e. no scrubbing) and saves time
- Water conservation



Proven at

DoE Laboratories



Nuclear Power Plants



Chemical Spills



Nuclear Medicine & Research Labs



D&D Sites



DECANGEL™
A PRODUCT OF CBI POLYMERS
A PRODUCT OF CBI POLYMERS

Examples of DeconGel™ Applications

- National Energy Technology Laboratory
 - Effective decontamination of Beryllium on a variety of surfaces
- Lawrence Livermore National Laboratory
 - Plutonium decontamination of glove boxes
- Leahi Hospital
 - Successful mercury decontamination
- Oak Ridge National Laboratory
 - Uranium and plutonium decontamination of hot cells
- Savannah River Site
 - General decontamination maintenance (steel desks, carts with wheels, etc).

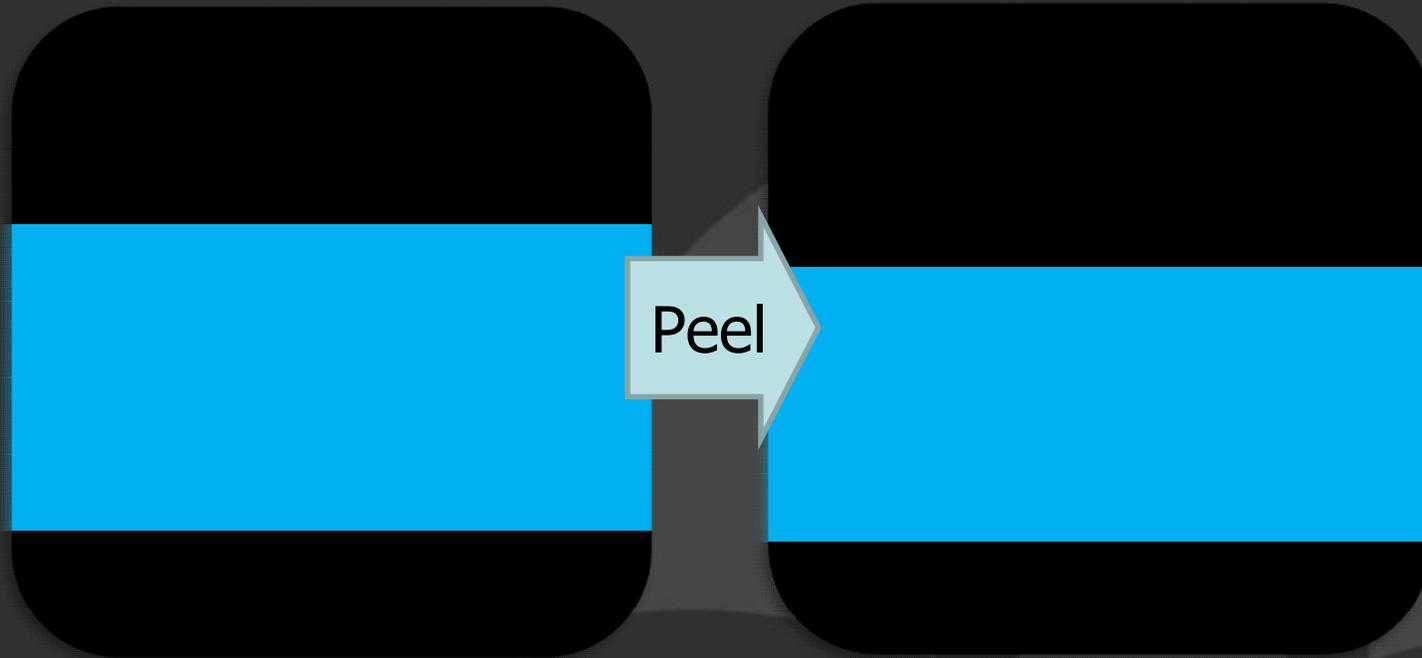


Livermore National Laboratory Glove Boxes Plutonium Contamination



Aluminum Wall Location	Measured Radioactivity (cpm)				
	Initial (cpm)	Thru Gel (cpm)	Shieldin g %	Last Decon (cpm)	Total Efficiency %
A2	27,000	3,000	89	120	100
A3	28,000	3,000	89	120	100
B1	28,000	3,000	89	140	100
B5	28,000	3,000	89	100	100
C1	28,000	4,000	86	160	99
C5	26,000	3,000	88	200	99
D1	28,000	2,000	93	220	99
D5	26,000	4,000	85	220	99
E1	30,000	3,000	90	240	99
E5	28,000	3,000	89	160	99
F1	32,000	4,000	88	NA	NA
F5	32,000	3,000	91	140	100
Average	28,417	3,167	89	165	99

Hospital: Toxic Chemical Cleanup



Mercury Cleanup

Sample Identification	Micrograms (ug)
LH-U-W1 10/23/08 (Before)	760
LH-U-W3 10/24/08 (After)	42

Frequently Asked Questions

- **How long does the gel take to dry?**

As quickly as 3 - 4 hrs to overnight, depending on air circulation, temperature, and humidity

- **What is the shelf-life?**

2 year shelf-life if container is not opened

- **What are ideal temperatures for application?**

Between 38 – 108 degrees F

- **What is the coverage of the gel?**

25-30 sq. ft/gal for porous concrete

50 sq. ft/gal for construction grade concrete

100-110 sq. ft/gal for smooth surface (tile, steel, glass)

Contact Info and Resources



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