

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**Product identifier** Quick Decon™ Mass Effect™ for Actinides

GHS Product Identifier Quick Decon™ Mass Effect™ for Actinides

Chemical Name Not Applicable

Trade name Quick Decon™ Mass Effect™ for Actinides

Relevant identified uses of the substance or mixture and uses advised against

Identified use(s) – Decontamination of selected radioisotopes.

Uses advised against – **Consult with manufacturer concerning all uses.****Details of the supplier of the safety data sheet**Company **Radiation Decontamination Solutions, LLC**

Address P.O. Box 2482, Oldsmar, FL 34677

Telephone **(813) 854-5100**E-Mail (competent person) info@raddecon.com**Emergency telephone number – (800) 222-1222 (US Poison Control)****SECTION 2: HAZARDS IDENTIFICATION****Classifications of the substance or mixture****OSHA Hazardous Communication Standard (USA) and UN GHS classification**

Non-hazardous according to the OSHA HCS (29CFR1910.1200) and GHS classifications.

Label elements

GHS Product Identifier

Hazard pictogram(s)	None	Signal word(s)	None
---------------------	------	----------------	-------------

Hazard statement(s)	None
---------------------	------

Precautionary statement(s)	None
----------------------------	------

WHMIS Classifications (Canada)

Classifications None – Not hazardous according the WHMIS regulations

Hazard statement(s)	None
---------------------	------

Precautionary statement(s)	None
----------------------------	------

EU Directives 1272/2008/EC and 1907/2006/EC

Non-hazardous according to EU Directives 1272/2008/EC and 1907/2006/EC

Label elements

CLP Product Identifier

Hazard pictogram(s)	None	Signal word(s)	None
---------------------	------	----------------	-------------

Hazard statement(s)	None
---------------------	------

Precautionary statement(s)	None
----------------------------	------

SAFETY DATA SHEET

Revision: 13.10

Quick Decon™ Mass Effect™ for Actinides

Date: 30 November 2023

EU Directives 1999/45/EEC and 67/548/EEC

Non-hazardous according to EU Directives 1999/45/EEC and 67/548/EEC

Label elements

Risk Symbols None

Risk Phrases None

Safety Phrases None

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Product contains no hazardous ingredients in reportable quantities under the following jurisdictions: USA, Canada, European Union, Australia, New Zealand, Japan, Korea, South Africa, or the UN.

Additional Information - Non-Hazardous ingredients are confidential and proprietary and make up the totality of the product. **Product Contents include water, mixed parabens, and proprietary non-hazardous active ingredients.** It is ~ 98% DI water and ~ 2% active ingredients.

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Note: First aid recommendations are predicated on exposure to product that has not been previously exposed to radioactive isotopes. For ANY EXPOSURE to product that has been used to decontaminate surfaces with measured or suspected radioactivity, medical attention should be sought.

Inhalation	Remove patient from exposure. Keep patient at rest and give oxygen if breathing difficult. If symptoms develop (unusual occurrence), obtain medical attention.
Skin Contact	Simply wash affected areas with soap and water. In the highly unusual event of persistent irritation, seek medical assistance.
Eye Contact	Remove any contact lenses. Irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. Obtain medical attention for persistent irritation.
Ingestion	Do not induce vomiting. Make victim drink plenty of water. Ingestion of small amounts (< 60 ml or 2.0 fl. oz.) should not require medical treatment, provided that the product has not collected radioisotopes.
Most important symptoms and effects, both acute and delayed	Acute: May cause irritation to stomach and esophagus upon ingestion. May cause mild to moderate eye irritation. Delayed and chronic effects: Similar to acute effects. Any delayed and/or chronic effects will generally be due to radioactive materials dissolved in solution post-use.
Indication of the immediate medical attention and special treatment needed	Most exposures require no treatment, provided that the solution does not contain radioactive substances collected from use. In cases where radiation exposure is suspected, it is critical that exposures be reported and carefully monitored for symptoms consistent with radiation-induced illnesses.

SAFETY DATA SHEET

Revision: 13.10

Quick Decon™ Mass Effect™ for Actinides

Date: 30 November 2023

SECTION 5: FIRE-FIGHTING MEASURES

Data Related to Fire

Flash Point: Does not support Combustion. Autoignition Temperature: Non-Flammable
Explosive / Flammable Limits (%v/v) Lower: NA Upper: NA
Sensitivity to Mechanical Impact: None Sensitivity to Static Discharge: None

Extinguishing media

Suitable Extinguishing Media Choose media for surrounding fire.
Unsuitable Extinguishing Media None known.

Special Hazards

A self-contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

Advice for fire-fighters

For fires in which used solution is involved, radiological monitoring is essential. Launder contaminated protective devices.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Ensure full personal protection (including respiratory protection) during removal of spillages. Evacuate if necessary. If used solution is spilled, expert assistance may be needed due to release of radiation.

Environmental Precautions

Radiological monitoring of spill site is essential where used solution has been spilled. Product poses no chemical hazards to the environment.

Methods and material for containment and cleaning up

Absorb material in inert absorbent and transfer to a lidded container for disposal or recovery. For solutions that may have radioisotopes, storage containers must be appropriately marked and type-accepted for the purpose of storing radiological waste; consult with manufacturer or authorities to ensure compliance.

Reference to other sections Additional Information

See Also Section 7, 8, 13.
None

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Keep away from strong bases and water-reactive materials. Use only in accordance with manufacturer instructions. Prolonged contact with skin and/or eyes is not recommended.

Conditions for safe storage, including any incompatibilities

Store in a tightly closed container in accordance with manufacturer suggestions. Incompatible with strong bases and water-reactive materials. Storage temperature should stay between 5-60°C (41-140°F). Do not freeze.

Storage Temperature

Ambient. Extreme temperatures are not recommended. Do not freeze.

Storage Life

Not available

Incompatible materials

Oxidizing agents, Can react violently if in contact with acids, alkalis, reducing agents and heavy metals.

SAFETY DATA SHEET

Revision: 13.10

Quick Decon™ Mass Effect™ for Actinides

Date: 30 November 2023





SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

Product contains no hazardous ingredients in reportable quantities under the following jurisdictions: USA, Canada, European Union, Australia, New Zealand, Japan, Korea, South Africa, or the UN. No exposure limits are available for product.

OELs are not available for non-listed components.

Personal protection equipment

	Respirators	Not normally required for handling of solutions in situations where exposure to radiation is not a possibility. For exposures where radiation is involved, seek guidance from manufacturer or authorities.
	Eye Protection	Safety spectacles suggested at all times. This may be combined with a face shield or combination eye protection / respiratory protection as required by each individual exposure scenario to radiation during usage.
	Gloves	Wear protective gloves during use. Gloves should be chosen to fit each individual situation of use; consult with manufacturer.
	Body protection	Wear suitable protective clothing and gloves during use. Body protection should be individualized to the situation of usage; consult with manufacturer and/or regulatory authorities for appropriate protective equipment.
	Engineering Controls	Consult with regulatory authorities and/or manufacturer; each situation should be carefully evaluated in order to properly select engineering controls.
	Other	Remove contaminated, saturated clothing immediately. Contaminated clothing and equipment should be decontaminated or discarded as hazardous waste.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Liquid	Color	Amber (Variable)
Odor	None	Odor Threshold (ppm)	Not available
Melting Point (°C) / Freezing Point (°C)	-10°C ± 5°C / 14°F ± 9°F	Boiling point/boiling range (°C):	75°C ± 10°C / 167°F ± 18°F
Flash Point (°C)	None	Explosive limit ranges	Not available
Auto Ignition Temperature (°C)	Not available	Decomposition Temperature (°C)	Not available
Explosive properties	Not available	Oxidizing properties	Not available
Flammability (solid, gas)	Not Flammable	pH (Value)	5.0 to 7.2 (estimate – not corrosive)
Evaporation rate	Equal to water	Vapor Pressure (mm Hg)	Equal to water
Vapor Density (Air=1)	Not available	Density (g/ml)	1.0 ± 0.1
Solubility (Water)	Soluble	Solubility (Other)	Not available
Partition Coefficient (n-Octanol/water)	Not available	Viscosity (mPa.s)	Not Available

Other information Volatile Organic Chemical (VOC) Content – < 10%.

SAFETY DATA SHEET

Revision: 13.10

Quick Decon™ Mass Effect™ for Actinides

Date: 30 November 2023

SECTION 10: STABILITY AND REACTIVITY

Reactivity	May react with incompatible materials.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Can react violently if in contact with strong bases, water-reactive materials.
Conditions to avoid	Avoid contact with heat and ignition sources.
Incompatible materials	Strong bases, Water-Reactive Materials
Hazardous Decomposition Product(s)	Carbon monoxide, Carbon dioxide,

SECTION 11: TOXICOLOGICAL INFORMATION

SUBSTANCE	CAS No.	LD ₅₀ (Oral, Rat)	LC ₅₀ (Inhalation, Rat)	LD50 (Dermal, Rat)
Product contains no hazardous ingredients in reportable quantities under the following jurisdictions: USA, Canada, European Union, Australia, New Zealand, Japan, Korea, South Africa, or the UN. No exposure limits are available for product.				

Information on toxicological effects

Note: Toxicological effects described below are based solely on product that has not been exposed to radioactive isotopes. Where exposures to used and/or radiation-contaminated product have occurred, toxic effects of radiation sickness/poisoning may include: nausea, vomiting, diarrhea, headache, fever, myalgia, fatigue, hypotension, leukopenia, generalized weakness, CNS symptoms, and coma progressing to death. Cutaneous Radiation Exposures may involve itching and redness that may progress to blistering and alopecia in the affected areas; necrosis may occur in severe exposures. The symptoms of radiation illnesses are dependent on the type of radiation, as well as the length and totality of exposures. The data in this section must not be used as a substitute for medical assistance where exposures to radiation have occurred.

Acute toxicity	Ingestion may cause irritation of the gastrointestinal tract.
Irritation	May be slightly irritating to skin, May be irritating to eyes.
Corrosivity	Unlikely; prolonged eye exposure could cause mild ulcerations of corneas.
Repeated dose toxicity	Expected to be similar to single exposures.
Carcinogenicity	Not expected.
Mutagenicity	No data.
Toxicity for reproduction	No data.
Other information	None

SECTION 12: ECOLOGICAL INFORMATION

Toxicity	Unused product is not harmful to aquatic environments in small quantities.
Persistence and degradability	Biodegradable. Not persistent.
Bioaccumulative potential	Biodegradable. Not persistent.
Mobility in soil	The product has high mobility in soil.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods	Disposal should be in accordance with local, state or national legislation. Consult with authorities, especially when the disposal of radiation-contaminated solutions is involved
Additional Information	None

SAFETY DATA SHEET

Revision: 13.10

Quick Decon™ Mass Effect™ for Actinides

Date: 30 November 2023

SECTION 14: TRANSPORT INFORMATION

Land transport (Within USA) (c)(d)

UN number None
Proper Shipping Name - Not classified as dangerous for transport. DOT exemption 49CFR173.150e.

Transport hazard class(es) None
Packing Group None
Hazard label(s) None
Environmental hazards None
Special precautions for user None

Sea transport (IMDG) (c)(d)

UN number None
Proper Shipping Name - Not classified as dangerous for transport. IMDG Special Provision 144.

Transport hazard class(es) None
Packing Group None
Marine Pollutant None
Special precautions for user None

Land transport (Within Canada)

UN number None
Proper Shipping Name - Not classified as dangerous for transport. Special provision 1.36.

Transport hazard class(es) None
Packing Group None
Hazard label(s) None
Environmental hazards None
Special precautions for user None

Air transport (ICAO/IATA) (c) (d)

UN number None
Proper Shipping Name - Not classified as dangerous for transport. Special Provision/Exemption A58.

Transport hazard class(es) None
Packing Group None
Environmental hazards None
Special precautions for user None

(c)– Consult with transport provider.

(d)– Check relevant regulations for Special Provisions.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

SECTION 15: REGULATORY INFORMATION

National regulations

USA

TSCA (Toxic Substance Control Act)	All chemicals listed.
SARA 311/312 - Hazard Categories	None
SARA 302 - Extremely Hazardous Substances	Listed - None
SARA 313 - Toxic Chemicals	Listed – Isopropanol.
CERCLA (Comprehensive Environmental Response Compensation and Liability Act)	
Listed – None	
CAA (Clean Air Act 1990)	Listed – None
CWA (Clean Water Act)	Listed - None
State Right to Know Lists	Listed – Isopropanol.
Proposition 65 (California)	None

Canada

WHMIS Classification	None.
Canada (DSL/NDSL)	Listed. - DSL
Canada Ingredient Disclosure List (CIDL)	Canadian users should contact manufacturer.

Chemical Safety Assessment

Slight Eye Irritant only.

SAFETY DATA SHEET

Revision: 13.10

Quick Decon™ Mass Effect™ for Actinides

Date: 30 November 2023

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16.

LEGEND

ACGIH	American Conference of Governmental Industrial Hygienists	NA	not applicable, not available
AICS	Australian Inventory of Chemical Substances	NIOSH	National Institute for Occupational Safety and Health
ANSI	American National Standards Institute	ND	not determined
atm	atmosphere (pressure unit)	NFPA	National Fire Prevention Association
BOD	biological oxygen demand	NTP	National Toxicology Program
CAS	Chemical Abstracts Service	OC	open cup
CC	closed cup	OSHA	Occupational Safety and Health Administration
CDTA	Chemical Drug and Trafficking Act	Part	partition
COC	Cleveland Open Cup	PEL	permissible exposure limits
COD	chemical oxygen demand	ppb	parts per billion
coeff.	coefficient	PPE	personal protective equipment
CFR	Code of Federal Regulations	ppm	parts per million
CPR	cardio-pulmonary resuscitation	psi	pounds per square inch
DEA	Drug Enforcement Agency	RCRA	Resource Conservation and Recovery Act
DOT	Department of Transportation	RQ	Reportable quantity
DSCL	Dangerous Substances Classification and Labeling	RTK	Right to Know
EEC	European Economic Community	SARA	Superfund Amendments and Reauthorization Act
FDA	Food and Drug Administration	STEL	short-term exposure limit
HMS	Hazardous Materials Information System	SUSDP	Standard for the Uniform Scheduling of Drugs and Poisons (Australia)
IARC	International Agency for Research on Cancer	TCC	Tagliabue Closed Cup
IDLH	immediate danger to life or health	TDG	Transportation of Dangerous Goods
kg	kilogram	TPQ	threshold planning quantity
L	liter	TQ	threshold quantity
LC50	median lethal concentration	TSCA	Toxic Substances Control Act
LD50	median lethal dose	TWA	time-weighted average
LEL	lower explosive limit	UEL	upper explosive limit
mg	milligram	WES	Workplace Exposure Standard (New Zealand)
mL	milliliter	WHMIS	Workplace Hazardous Material Information System

References: RTECS, CAS Registry, EINECS/ESIS, *Casarett & Doull's Toxicology*, *Goldfrank's Toxicological Emergencies*, Manufacturer Information

Risk Phrases and Safety Phrases

None

Hazard statement(s) and Precautionary statement(s)

None

Additional Information: None

Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose. ChemTel Inc. gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law. ChemTel Inc. accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.