

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

GHS Product Identifier Quick Decon™ Mass Effect™ for Transition Metals

Chemical Name Not Applicable

Trade name Quick Decon™ Mass Effect™ for Transition Metals

**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 **141 Stevens Ave. Suite 9 Oldsmar, FL 34677**  
 Telephone **(813) 854-5100**  
 E-Mail (competent person) [info@raddecon.com](mailto: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)	<b>None</b>
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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 element :**

CLP Product Identifier

Hazard pictogram(s)	None	Signal word(s)	<b>None</b>
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Hazard statement(s) None

Precautionary statement(s) None

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

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

**Label element :**

Risk Symbols None

Risk Phrases None

Safety Phrases None

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

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**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 not listed as confidential and proprietary and make up the totality of the product.

**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, 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 or severe irritation.
Ingestion	<b>SEEK EMERGENCY MEDICAL ASSISTANCE AND SHOW THIS MSDS TO PHYSICIAN.</b> Do not induce vomiting. Make victim drink plenty of water. Product contains cyano group chemical; ingestion of large quantities may lead to cyanide poisoning
<b>Most important symptoms and effects, both acute and delayed</b>	<b>Acute:</b> May cause mild to moderate eye irritation. Serious ingestions may lead to cyanide poisoning, including neurological deficits, headache, vertigo, weakness, tremor, seizures, and shortness of breath. Skin color may be cherry-red. <b>Delayed and chronic effects:</b> Similar to acute effects. Any delayed and/or chronic effects will generally be due to radioactive materials dissolved in solution post-use.
<b>Indication of the immediate medical attention and special treatment needed</b>	Case management should be based on laboratory results. Hydroxycyanocobalamin is specific as an antidote. In cases where radiation exposure is suspected, it is critical that exposures be reported and carefully monitored for symptoms consistent with radiation-induced illnesses.

**SECTION 5: FIRE-FIGHTING MEASURES****Data Related to Fire**

Flash Point:	Non-Flammable	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**

<b>Personal precautions, protective equipment and emergency procedures</b>	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.
<b>Environmental Precautions</b>	Radiological monitoring of spill site is essential where used solution has been spilled. Product poses slight chemical hazard to aquatic environments.
<b>Methods and material for containment and cleaning up</b>	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.
<b>Reference to other sections Additional Information</b>	See Also Section 7, 8, 13. None

**SECTION 7: HANDLING AND STORAGE**

<b>Precautions for safe handling</b>	Keep away from strong acids and water-reactive materials. Use only in accordance with manufacturer instructions. Prolonged contact with skin and/or eyes is not recommended.
<b>Conditions for safe storage, including any incompatibilities</b>	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.
<b>Storage Temperature Storage Life</b>	Ambient. Extreme temperatures are not recommended. Do not freeze. Not available
<b>Incompatible materials</b>	Acids – may liberate toxic and/or noxious fumes. Can react if in contact with reducing agents and heavy Metals. Reacts with iron metal.

**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**

	<b>Respirators</b>	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.
	<b>Eye Protection</b>	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.
	<b>Gloves</b>	Wear protective gloves during use. Gloves should be chosen to fit each individual situation of use; consult with manufacturer.

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

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	<b>Body protection</b>	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.
	<b>Engineering Controls</b>	Consult with regulatory authorities and/or manufacturer; each situation should be carefully evaluated in order to properly select engineering controls.
	<b>Other</b>	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	Bluish green (variable)
Odor	None	Odor Threshold (ppm)	Not available
Melting Point (°C) / Freezing Point (°C)	-5°C ± 5°C	Boiling point/boiling range (°C):	105°C ± 5°C 221°F ± 9°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)	5-9 (estimate)
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%.

### SECTION 10: STABILITY AND REACTIVITY

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

### SECTION 11: TOXICOLOGICAL INFORMATION

SUBSTANCE	CAS No.	LD <sub>50</sub> (Oral, Rat)	LC <sub>50</sub> (Inhalation, Rat)	LD <sub>50</sub> (Dermal, Rat)
<p><b>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.</b></p>				

**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. Serious cases may result in cyanide poisoning; See Section 4 for symptomology.
Irritation	May be slightly irritating to skin, May be irritating to eyes.
Corrosivity	Product may attack some Metals, but should not be corrosive to skin and/or eyes..
Repeated dose toxicity	Expected to be similar to single exposures.
Carcinogenicity	Not expected.
Mutagenicity	No data.
Toxicity for reproduction	Should be considered potentially toxic for reproduction if ingested.
<b>Other information</b>	None

<b>SECTION 12: ECOLOGICAL INFORMATION</b>
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<b>Toxicity</b>	Unused product is slightly harmful to aquatic environments in small quantities. Do not discard large quantities into bodies of water.
<b>Persistence and degradability</b>	Biodegradable. Not persistent.
<b>Bioaccumulative potential</b>	Biodegradable. Not persistent.
<b>Mobility in soil</b>	The product has high mobility in soil.

<b>SECTION 13: DISPOSAL CONSIDERATIONS</b>
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<b>Waste treatment methods</b>	Disposal should be in accordance with local, state or national legislation. Consult with authorities, especially when the disposal of radiation-contaminated solutions is involved
<b>Additional Information</b>	None

<b>SECTION 14: TRANSPORT INFORMATION</b>
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**Land transport (Within USA) (c)(d)**

UN number	None
Proper Shipping Name	Not classified as dangerous for transport.
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.
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.
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.
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**

<b>SECTION 15: REGULATORY INFORMATION</b>
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**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. – None
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	Users in NJ and PA should contact manufacturer.
Proposition 65 (California)	None

**Canada**

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

**Chemical Safety Assessment**

Contact with strong acids may result in release of toxic and/or noxious fumes; Mild toxicity by ingestion.

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

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**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
HMIS	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

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