

Safety Data Sheet

According to OSHA HazCom Standard [2012]

Printing date 02/22/2019

Version 3

Reviewed on 02/22/2019

1 Identification

Product identifier Sheet Code: 269

Trade name: MultiHance (CAN)

Chemical Name: (4RS)-[4-carboxy-5,8,11-tris(carboxymethyl)-1-phenyl-2-oxa-5,8,11-triazatridecan-13-oato(5-)] gadolinate(2-) dihydrogen compound with 1-deoxy-1-(methylamino)-D-glucitol (1:2).

Synonyms: Gadobenate dimeglumine injection.

Application of the substance / the mixture:

Indicated for intravenous use as an adjunct to MRI in Central Nervous System imaging.

We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

Each single/multi dose glass vial is elastomeric stoppered (latex free) with an aluminum seal. MultiHance is supplied in boxes of five with different fill volumes (5, 10, 15, 20, 50 or 100 mL) and vial sizes.

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Bracco Diagnostics Inc.

P.O. Box 5225 Princeton, NJ 08543

Phone number: 1-800-257-5181

Email: Hse@bracco.com (responsible for the SDS)

Information department:

B-Lands Consulting

WTC, 5 Place Robert Schuman, BP 1516

38025 Grenoble, FRANCE

Tel: +33 476 295 869

Fax: +33 476 295 870

Email: clients@reachteam.eu

www.reachteam.eu

Emergency telephone number:

EMERGENCY CONTACT: Health: 1-800-257-5181 U.S.

Transport - Chemtrec: 1-800-424-9300

International Transport - Chemtrec: 1-703-527-3887

2 Hazard(s) identification

Classification of the substance or mixture

The product is not classified, according to the Globally Harmonized System (GHS).

Label elements

GHS label elements Not applicable.

Hazard pictograms Not applicable.

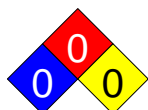
Signal word Not applicable.

Hazard statements Not applicable.

Additional Information:

Classification system:

NFPA ratings (scale 0 - 4)



Health = 0

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = 0

Fire = 0

Reactivity = 0

Other hazards No further relevant information available.

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Synonyms: Gadobenate dimeglumine injection.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description: Mixture: consisting of the following components.

Hazardous Components: Not applicable.

Information on components:

127000-20-8	(4 R,S)-[(4-carboxy-5,8,11-tris(carboxymethyl)-1-phenyl-2-oxa-5,8,11-triazatridecan-13-oato(5-)) Gadolinate (2-)], dihydrogen, compound with 1-deoxy-1-(methylamino)-D-glucitol (1:2)	50-100%
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4 First-aid measures

Description of first aid measures

General information: No special measures required.

After inhalation:

Move patient to fresh air, if symptom arise consult a doctor.

Supply fresh air. If required, provide artificial respiration. Consult doctor if symptoms persist.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

Contact a doctor if symptoms arise.

After eye contact:

Rinse opened eye for several minutes under running water.

If irritation persists get medical attention.

After swallowing:

Immediately call a doctor.

Induce vomiting, only if affected person is fully conscious.

Most important symptoms and effects, both acute and delayed

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents: In case of fire, flood with Water

Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Carbon Dioxide (CO₂)

In the absence of Oxygen: Carbon Monoxide (CO)

Nitrogen Oxides (N_xO_y)

Gadolinium Oxide (Gd₂O₃)

Advice for firefighters

Evacuate personnel to an upwind direction, remove unneeded material and cool container(s) with water from a maximum distance. Move container from fire area if you can do it without risk.

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Protective equipment:

Firefighters should wear adequate personal protective equipment with protection of respiratory tract (self-contained breathing apparatus) (SCBA).

In addition, firefighters should wear flame and chemicals resistant clothing, boots and gloves.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep away from ignition sources

Wear protective equipment. Keep unprotected persons away.

Environmental precautions:

Do not allow to enter sewers/ surface or ground water.

Dilute with plenty of water.

Methods and material for containment and cleaning up:

Absorb with liquid-binding material.

Absorb with liquid-binding material (sand, diatomite, vermiculite) or other non combustible absorbent material. Place spilt material in an appropriate container for disposal. The spill area should be ventilated and decontaminated after material is collected.

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Protective Action Criteria for Chemicals

PAC-1:

None of the ingredients are listed.

PAC-2:

None of the ingredients are listed.

PAC-3:

None of the ingredients are listed.

7 Handling and storage

Precautions for safe handling

Avoid splashes or spray in enclosed areas.

Avoid contact with the eyes and skin.

Information about protection against explosions and fires: No special measures required.

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles:

Store in a cool, dry place in well sealed receptacles.

Information about storage in one common storage facility: Not required.

Further information about storage conditions:

Store in cool, dry conditions in well sealed receptacles.

Container Requirements: Single dose glass vial is elastomeric stoppered (latex free) with an aluminum seal. MultiHance is supplied in boxes of five with different volumes (5, 10, 15, 20, 50 or 100 mLs) and vial sizes. Storage Conditions: Store at 15-30 °C (59 to 86 °F). Do not freeze.

Specific end use(s) No further relevant information available.

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8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information: The lists that were valid during the creation were used as basis.

Exposure controls

Personal protective equipment

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Wash hands before breaks and at the end of work.

Ensure good ventilation/exhaustion at the workplace.



Do not eat, drink and smoke while working.

Breathing equipment:

Not anticipated for normal clinical environment. In non-routine exposure conditions, where risk assessment shows air-purifying respirators are appropriate, use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Self-contained breathing apparatus should be available for emergency use.

Protection of hands:



Protective gloves

The glove material must be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

Natural rubber, NR

Nitrile rubber, NBR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:



Safety glasses

Body protection: Protective work clothing

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9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form: Liquid.
Color: Colorless.

Odor: Undistinguishable

Odor threshold: Not determined.

pH-value: 6.5 - 7.5

Melting point/Melting range: Not determined.

Boiling point/Boiling range: 100 °C (212 °F)

Flash point: Not determined.

Flammability (solid, gaseous): Not applicable.

Ignition temperature: Not determined.

Decomposition temperature: Not determined.

Auto igniting: Product is not selfigniting.

Danger of explosion: Product does not present an explosion hazard.
Not determined.

Flammability Limits:

Lower: Not Determined.

Upper: Not Determined.

Explosion limits:

Lower: Not determined.

Upper: Not determined.

Oxidizing properties Not determined.

Vapor pressure: Not determined.

Density at 20 °C (68 °F): 1.22 g/cm³ (10.1809 lbs/gal)

Relative density Not determined.

Vapor density > 1.0 (Greater than Air)

Evaporation rate Not determined.

Solubility in / Miscibility with

Water: Fully miscible.

Partition coefficient (n-octanol/water): Not determined.

Viscosity:

Dynamic: T = 20 °C, η = 9.2 mPas
T = 37 °C, η = 5.3 mPas

Kinematic: Not determined.

Water: 47.1 %

VOC content: 0.00 %

Solids content: 0.0 %

Other information

No further relevant information available.

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10 Stability and reactivity

Reactivity

No data available.

No further relevant information available.

Chemical stability

Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

Possibility of hazardous reactions No dangerous reactions known.

Conditions to avoid No further relevant information available.

Incompatible materials: No further relevant information available.

Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

Information on toxicological effects

Acute toxicity:

LD/LC50 values that are relevant for classification:

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Oral	LD50	>26,400 mg/kg (Mouse) >15,800 mg/kg (Rat)
	LD50 iv	8.3 g/kg (Mouse) 9.7 g/kg (Rat)

Primary irritant effect:

on the skin:

No irritant effect.

Material contains low concentration of components that are mild irritants or possible irritants. It may have potential to cause mild irritation, however, moderate or severe irritation is not expected.

on the eye:

No irritating effect.

No irritation effects reported. However, the product should be considered as a potential irritant.

Sensitization:

No sensitizing effects known.

The product can cause inflammation in people allergic to gadolinium and its compounds

Other information (about experimental toxicology):

By Inhalation: Inhaling small doses of aerosolized material would not be expected to result in symptoms.

By Ingestion: Inadvertent ingestion of trace amounts of this material would not be expected to result in symptoms.

Germ Cell Mutagenicity: A number of in vitro studies including the Ames test and in vivo mutagenicity studies including the rat micronucleus study did not show mutagenicity for MultiHance.

Reproductive Toxicity: Reproduction studies on rats with daily doses of MultiHance 20 times the daily human dose showed no evidence of effects on fertility or harm to the fetus. No teratogenic events were evident on intravenous administration of MultiHance to pregnant rabbits and rats.

Subacute to Chronic Toxicity: No harmful effects are expected from MultiHance under normal use conditions. Repeated and prolonged exposure to skin may cause skin irritation. MultiHance is not intended

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for chronic use and there is no information on the possible adverse effects associated with chronic exposure

Additional toxicological information:

The product is not subject to classification according to internally approved calculation methods for preparations.

When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.

Contact with small quantities of material for short periods is not expected to result in pharmacologic or toxic effects. Co-administration of isosorbide, epirubicin, diazepam, clonazepam, prednisolone and promethazine did not change the acute toxicity of MultiHance after injection in rats. MULTIHANCE is contraindicated in patients with known allergic or hypersensitivity reactions to Gadolinium or any other ingredients including Benzyl Alcohol. MULTIHANCE may possibly potentiate sickle erythrocyte alignment in patients with sickle cell anemia.

Carcinogenic categories

IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

NTP (National Toxicology Program)

None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

12 Ecological information

Toxicity

Aquatic toxicity:

127000-20-8 (4 R,S)-[(4-carboxy-5,8,11-tris(carboxymethyl)-1-phenyl-2-oxa-5,8,11-triazatridecan-13-oato(5-)) Gadolinate (2-)], dihydrogen, compound with 1-deoxy-1-(methylamino)-D-glucitol (1:2)

LC50	>875 mg/L (Rainbow Trout)
EC50	>1,000 mg/L (Activated Sludge) >961 mg/L (Daphnia)
EC50/72h	>110 mg/L (Selenastrum Capricornutum)

Persistence and degradability No further relevant information available.

Bioaccumulative potential No further relevant information available.

Mobility in soil No further relevant information available.

Additional ecological information

General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

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13 Disposal considerations

Waste treatment methods

Recommendation:

Smaller quantities can be disposed of with household waste.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Reutilise if possible or contact a waste processors for recycling or safe disposal.

Uncleaned packagings:

Recommendation:

Disposal must be made according to official regulations.

Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

UN-Number

DOT, ADR, ADN, IMDG, IATA

Not applicable.

UN proper shipping name

DOT, ADR, ADN, IMDG, IATA

Not applicable.

Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA

Class

Not applicable.

Packing group

DOT, ADR, IMDG, IATA

Not applicable.

Environmental hazards:

Marine pollutant:

No

Special precautions for user

Not applicable.

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

Not applicable.

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Sara

Section 355 (extremely hazardous substances):

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

Proposition 65

Chemicals known to cause cancer:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

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Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

Carcinogenic categories

EPA (Environmental Protection Agency)

None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH)

None of the ingredients are listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients are listed.

GHS label elements Not applicable.

Hazard pictograms Not applicable.

Signal word Not applicable.

Hazard statements Not applicable.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Training Hints: All persons handling this product should be informed on the existence of the hazard, on any possible risk they might be subjected to and about all required protective measures to prevent such a damage or to reduce the exposition.

WARNINGS: Diagnostic agents are intended for use under direction of a physician and/or under the conditions of use described on the label and in the product's package insert. As a general precaution, personnel who handle drug substances should avoid contact (ingestion, inhalation, skin and eye contact) with these substances.

Contact:

Bracco Diagnostics Inc.

P.O. Box 5225

Princeton, NJ 08543

Date of preparation / last revision 02/22/2019 / 1

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent