

Safety data sheet

DMEM high-glucose

BB-SDS-DMEM-HIGH-GLUCOSE-1X-NAHCO3
Revision 2026-09-20.7 · 2026-09-20

1. Identification

Item	Details
Product	DMEM high-glucose, 1X liquid
Product identifier	MD-LIQ-DMEM-HIGH-GLUCOSE-1X-NAHCO3
Other name	Dulbecco's Modified Eagle Medium, high glucose
Use	Basal medium for laboratory cell-culture research
Use restrictions	No clinical diagnosis or administration to people or animals
Responsible company	Bramante Biologics Corporation
U.S. address	160 Alewife Brook Parkway, STE 1316, Cambridge, MA 02138, USA
Telephone	+1 (617) 221-6167
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2. Hazard Identification

This aqueous medium is not classified as hazardous under the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200. The classification requires no hazard pictogram, signal word or hazard statement.

No additional classified hazard or hazard not otherwise classified has been identified for the supplied medium. Use care with splashes and mist, and clean spills promptly because wet floors may be slippery. Added chemicals or biological material can change the hazards of the resulting mixture.

3. Composition/information on ingredients

Aqueous mixture of salts, amino acids, vitamins, glucose, sodium pyruvate and phenol red sodium salt. No ingredient meets the criteria for mandatory health-hazard disclosure at its nominal concentration in this medium. The selected amounts below are voluntary composition information, expressed as mass per final volume rather than weight percent.

Ingredient	CAS number	Nominal concentration
Sodium chloride	7647-14-5	6.4 g/L
D-Glucose, anhydrous	50-99-7	4.5 g/L
Sodium bicarbonate	144-55-8	3.7 g/L
L-Glutamine	56-85-9	584 mg/L
Potassium chloride	7447-40-7	400 mg/L
Calcium chloride dihydrate	10035-04-8	264.9 mg/L
Sodium pyruvate	113-24-6	110 mg/L
Iron(III) nitrate nonahydrate	7782-61-8	100 µg/L

Water brings the mixture to final volume. The product sheet lists the complete nominal formulation; no formulation information is withheld as a trade secret.

4. First aid measures

- Eyes: begin rinsing with clean running water; remove contact lenses if they come out easily. Continue rinsing and seek medical help for persistent discomfort or changes in vision.
- Skin: remove wet clothing and wash the affected skin with water. Obtain medical advice if irritation continues.
- Inhalation: move away from an aerosol exposure into fresh air. Breathing difficulty requires urgent medical attention.
- Ingestion: rinse the mouth. Do not induce vomiting; contact a medical professional for advice after accidental swallowing.

Mixture-specific symptom and delayed-effect data are unavailable. Splash irritation is possible. Treat according to the exposure and symptoms; no specific antidote has been established for this mixture.

5. Fire-fighting measures

The supplied water-based medium does not sustain combustion. Select the extinguishing agent for the nearby burning materials. Avoid directing a strong water jet through a spill, which can spread contaminated liquid.

A bottle exposed to fire can rupture as pressure rises. After evaporation, heated organic and salt residues may produce irritating gases, including carbon and nitrogen oxides. Fire response requires protective clothing and self-contained breathing apparatus suited to the scene. Cool or move exposed containers only when safe.

6. Accidental release measures

Keep people clear of the wet area and use splash protection and gloves. If a leaking bottle can be handled safely, place it in a secondary container. Absorb the liquid, collect the absorbent in a labeled waste container, and clean the remaining film with water.

Prevent uncontrolled discharge to drains. For a spill involving cultured cells or added chemicals, follow the response procedure for those materials as well as the medium.

7. Handling and storage

Use closed containers when moving the medium. Avoid generating sprays, and wash hands after handling. Keep food and drink outside the work area.

Store at 2–8 °C and protect from light. Keep the cap secure and protect bottles from impact. Avoid freezing and prolonged heat. Separate from strong acids, strong bases and strong oxidizers; acid addition to bicarbonate-containing liquid can release carbon dioxide.

8. Exposure controls/personal protection

Component group	Airborne limit
Soluble iron salts, as Fe	NIOSH REL and ACGIH TLV: 1 mg/m³, time-weighted average. No current OSHA PEL identified.
Other formulation ingredients	No applicable substance-specific airborne limit identified in the reviewed information.

No limit is assigned to the medium as a whole. The iron limit is expressed as airborne elemental iron in soluble salts, not as the mass of liquid medium. A dissolved ingredient concentration does not measure workplace exposure.

Normal laboratory ventilation is suitable for routine bottle transfers. Control mist at its source for aerosol-generating operations and keep an eyewash accessible. Use eye protection appropriate to splash exposure, a laboratory coat and compatible gloves. Routine handling does not require a respirator; select respiratory controls from the exposure

assessment when the work generates aerosols.

9. Physical and chemical properties

Property	Information
Physical state	Liquid
Color	Expected pink to red; depends on pH
Odor and odor threshold	No mixture data available
pH	Nominal comparison range 7.0–7.4; not a measured lot result
Melting/freezing point	Expected around –1 to 0 °C; coarse dilute-solution estimate
Boiling point/range	Approximately 100 °C at 101.3 kPa; aqueous-solution estimate
Flammability	Not combustible as supplied; aqueous medium
Explosion/flammability limits	No mixture data available
Flash point	Not applicable to the supplied noncombustible aqueous liquid
Auto-ignition temperature	No mixture data available
Decomposition temperature	No mixture data available
Kinematic viscosity	About 1 mm ² /s at 20 °C; water-based estimate
Solubility	Aqueous solution; mixes with water
Partition coefficient, n-octanol/water	No single value assigned to this mixture
Vapor pressure and evaporation rate	About 2.3 kPa at 20 °C; water-based estimate. Evaporation rate not determined.
Density/relative density	About 1 g/mL at 20 °C; dilute-solution estimate
Relative vapor density	About 0.62 relative to air = 1; estimate for the water-dominated vapor
Particle characteristics	Not applicable to the supplied liquid

10. Stability and reactivity

The supplied medium is stable during ordinary laboratory handling under its stated storage conditions. No explosive, self-reactive, pyrophoric or water-reactive behavior is expected from this dilute aqueous formulation. Nutrient degradation during storage does not by itself imply a hazardous reaction.

Acids release carbon dioxide from bicarbonate and can pressurize a sealed vessel. Avoid contact with strong oxidizers and concentrated acids or bases. Prolonged heat, freezing or evaporation may alter pH and cause precipitation. Intense heating of dried residue may release irritating decomposition gases. This SDS assigns no shelf life.

11. Toxicological information

Ingredient information and the supplied concentrations do not meet classification criteria for acute toxicity, skin or eye irritation, sensitization, germ-cell mutagenicity, carcinogenicity, reproductive toxicity, specific target-organ toxicity or aspiration hazard. These are composition-based determinations, not reports of tests on the complete medium.

Endpoint	Information
Acute oral, dermal and inhalation toxicity	Not classified. No whole-mixture LD50 or LC50 is available.
Skin and eye effects	Mixture irritation criteria are not met. Temporary discomfort may occur after a splash, especially in the eyes.
Sensitization	No sensitization classification is indicated at the supplied composition.

Endpoint	Information
Mutagenicity and reproductive effects	The formulation does not meet classification criteria for these endpoints.
Carcinogenicity	No constituent triggers mixture carcinogenicity classification at its supplied concentration; the qualified nitrate evaluation is described below.
Target-organ effects	The dilute concentrations of ingredients associated with respiratory irritation do not trigger a target-organ toxicity classification.
Aspiration	No aspiration-toxic ingredient is identified in this aqueous formulation. Low viscosity alone is not an aspiration-hazard criterion.

IARC evaluates nitrate or nitrite ingestion as Group 2A when conditions cause endogenous nitrosation. This qualified exposure evaluation is distinct from a blanket classification of nitrate-containing laboratory media. The trace nitrate level in this formulation does not trigger mixture carcinogenicity classification. No other nominal ingredient was identified as an NTP-listed carcinogen or an OSHA-listed carcinogen at a reportable concentration.

Possible accidental routes are skin or eye contact, swallowing and inhalation of droplets. A substantial swallowed amount may cause gastrointestinal discomfort. Whole-mixture data on delayed effects and interactions are unavailable. Used cultures and medium containing additional reagents need their own assessment.

12. Ecological information

No aquatic-hazard classification is indicated by the nominal ingredient concentrations and available evidence. This conclusion does not authorize disposal into drains, soil or surface water.

Measured whole-mixture aquatic toxicity, degradation, bioaccumulation and soil mobility data are unavailable. Dissolved salts can move with water, and the medium supplies nutrients that may affect receiving systems. Consider cultured material and added reagents when evaluating waste.

13. Disposal considerations

Collect waste according to the laboratory’s applicable chemical and biological waste procedures. Added reagents and cultured material can change the disposal route. Confirm local discharge requirements before using a drain; treat bottles with residual medium as contaminated packaging.

14. Transport information

Transport field	Supplied bottle packs
U.S. DOT / IATA / IMDG	Not regulated as dangerous goods
UN number / proper shipping name	Not assigned
Transport hazard class / packing group	Not applicable
Marine pollutant / transport environmental hazard	No
Bulk carriage under IMO instruments	Not applicable to the supplied bottle packs

Keep bottles closed, upright and secure in packaging that limits breakage and leakage. Maintain labeled product-storage conditions. Refrigerants and any other hazardous materials packed with the medium require their own shipping assessment.

15. Regulatory information

The supplied medium has no assigned OSHA physical or health hazard category for SARA 311/312 hazard categorization. This does not remove ingredient-specific release or facility reporting obligations.

Constituent or category	U.S. regulatory information
Ferric nitrate	CERCLA reportable quantity: 1,000 lb of the listed anhydrous salt, CAS 10421-48-4. The formulation uses its nonahydrate.
Water-dissociable nitrate in aqueous solution	EPCRA 313 category N511; the supplied concentration is below the 1% de minimis level.

Ferric nitrate is also a designated Clean Water Act substance. Where constituent amounts are known, release reporting uses the released listed-substance mass and its applicable quantity threshold; the full mass of the medium is not the ferric-nitrate mass. Preserve the parent-salt and hydrate distinction in that calculation.

Reporting depends on the facility activity, amounts and applicable exemptions. A research-use label does not alone establish an operational exemption. This SDS makes no blanket inventory or pharmaceutical-use certification.

16. Other information

Revised 20 September 2026. The hazard assessment applies to the supplied 1X formulation and uses nominal concentrations with available component information.

PEL means permissible exposure limit; TLV means threshold limit value; REL means recommended exposure limit. Document and formulation revisions appear in the header. Reassess this sheet when formulation or material information changes.

Applicability: 500 mL and 1 L bottles; packs of 1, 6, 12 or 24 bottles.