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SAFETY DATA SHEET

2X M4 Taq Master Mix with Dye

Prepared under WHMIS 2015 (Hazardous Products Regulations, SOR/2015-17) / GHS Rev. 5.

DOCUMENT ID	VERSION	ISSUED	EFFECTIVE
HSS-MM03-SDS	1.0	2026-09-03	2026-09-03

1 Identification

Product name	2X M4 Taq Master Mix with Dye
Catalogue number	M0802-020 · Product size: 200 reactions
Product type	Ready-to-use 2X PCR reaction master mix containing an engineered hot-start thermostable DNA polymerase (M4 Taq), deoxynucleotide triphosphates (dNTPs), reaction buffer, magnesium salt, and an electrophoresis tracking dye, supplied in a glycerol-stabilised storage buffer.
Recommended use	Laboratory reagent for the polymerase chain reaction (PCR) amplification of nucleic acids. For laboratory research use only (RUO).
Restrictions on use	Not for food, drug, pesticide, or biological-product use. Not for human or animal diagnostic or therapeutic use.
Supplier	HoppeSyler Scientific Inc., 79 Bessemer Road, Unit 1, London, ON N6E 1P9, Canada
Origin	Developed and manufactured in Canada.
Emergency telephone	1-833-727-7522 · Email: info@hoppesyler.com

2 Hazard Identification

WHMIS 2015 / GHS classification	Not classified. This product does not meet the criteria for any physical, health, or environmental hazard class under WHMIS 2015 (Hazardous Products Regulations, SOR/2015-17) / GHS Rev. 5.
Basis for non-classification	The shipped tube is the purified, formulated reaction mix (DNA polymerase, dNTPs, reaction buffer, and tracking dye) in a glycerol-based storage buffer. The bacterial production inputs used upstream to express and purify the enzyme (culture medium, selection antibiotic, induction reagent) are removed during purification and are not present in the shipped tube . The components that remain (water, glycerol, buffer salts, a non-ionic detergent, a reducing agent, and trace additives) are each present below their GHS classification cut-offs, individually and under the GHS mixture-additivity rules, so the product is not classified.
Signal word	None.
Pictograms	None.
Hazard statements	None.
Precautionary statements	PREVENTION P264 Wash hands thoroughly after handling. · P280 Wear protective gloves and eye protection. (Voluntary good-laboratory-practice handling for a research reagent; no precautionary statement is required by classification.)
Other hazards	No data indicating a hazard not otherwise classified (HNOC). As with any laboratory reagent, avoid unnecessary skin and eye contact and do not ingest.

3 Composition / Information on Ingredients

Substance type: mixture (aqueous, glycerol-stabilised storage buffer). The composition below is the **shipped** formulation, computed from the manufacturing formulation of record. The upstream bacterial production inputs (culture medium, selection antibiotic, induction reagent) are removed during enzyme purification and are therefore not listed. The table lists the non-enzymatic components; the DNA polymerase itself is a purified protein, not classified as hazardous and present at trace level, and is not tabulated.

Component	CAS-No	Concentration (w/w %, GHS band)
Water (nuclease-free)	7732-18-5	≥50%
Glycerol	56-81-5	25–50%
dNTP mix, aqueous solution (10 mM each dNTP), as an ingredient	Mixture	3–5%
Bromophenol blue (tracking dye)	115-39-9	<0.1%

Components are listed as GHS concentration bands (w/w), computed from the manufacturing formulation of record. The dNTP row is the aqueous nucleotide solution as it enters the formulation; the deoxynucleotides themselves are below 0.1% w/w of the product. The remaining constituents (the reaction-buffer components and stabilizers) are proprietary: this product is not classified as hazardous, so ingredient disclosure beyond this table is not required under the Hazardous Products Regulations (SOR/2015-17). Each proprietary constituent is below its GHS classification cut-off and below every mandatory disclosure threshold, individually and by mixture additivity (Sections 2 and 11), and no carcinogen, mutagen, or reproductive toxicant (CMR) is present at or above its disclosure threshold. The complete quantitative composition of record is on file and is available to regulatory authorities and medical personnel on request.

4 First-Aid Measures

Eye contact	Rinse cautiously with water for several minutes, holding the eyelids open. Remove contact lenses if present and easy to do, then continue rinsing. Get medical attention if irritation develops and persists.
Skin contact	Wash with plenty of soap and water. Remove contaminated clothing. Get medical attention if irritation develops and persists.
Inhalation	Not an expected route of exposure for this aqueous liquid. Remove the person to fresh air if any discomfort occurs.
Ingestion	Rinse mouth with water. Do not induce vomiting. Get medical attention if a large amount is swallowed or if symptoms occur.
Symptoms / effects	None expected under normal handling. Transient mild eye or skin irritation may occur with direct or prolonged contact.
Note to physician	Treat symptomatically.

5 Fire-Fighting Measures

Suitable media	Water spray, water fog, dry chemical, carbon dioxide (CO ₂), or alcohol-resistant foam. Use media appropriate to the surrounding fire.
Unsuitable media	None known.
Specific hazards	Non-flammable aqueous liquid: predominantly water and glycerol with no volatile flammable solvent above trace level; no flash point applies (Section 9). The product as supplied does not support combustion; the dried residue (mainly glycerol) is combustible. Hazardous combustion products of the residue may include carbon monoxide, carbon dioxide, and oxides of nitrogen and sulfur.
Firefighter PPE	Self-contained breathing apparatus (SCBA) and full protective gear for any surrounding fire.

6 Accidental Release Measures

Personal precautions	Wear protective gloves and eye protection. Avoid contact with eyes and skin. No special emergency measures are required for this small-volume, non-classified reagent.
Environmental	Avoid release to drains and waterways where practical; see Section 12. No special environmental precautions are required.
Containment / cleanup	Absorb the spill with paper towel or an inert absorbent. Wipe up, then clean the area with water. Place waste in a labelled container for disposal in accordance with Section 13.

7 Handling and Storage

Safe handling	Handle in accordance with good laboratory practice. Avoid contact with eyes. Wear the PPE in Section 8. Wash hands after handling. Keep the product on ice during use to preserve enzyme activity.
Safe storage	Store frozen at -20 °C, protected from repeated freeze/thaw cycles. Keep the container tightly closed. The glycerol content keeps the product as a viscous, non-frozen liquid at -20 °C.
Incompatibilities	Strong oxidising agents (may degrade the reducing agent and detergent components).

8 Exposure Controls / Personal Protection

Exposure limits	Glycerol: no ACGIH TLV is currently established (the former TLV for glycerin mist was withdrawn in 2013); the US OSHA PEL for glycerin mist is 15 mg/m ³ total particulate and 5 mg/m ³ respirable fraction (8-hour TWA); glycerin is not listed in the Ontario Table of Ontario Regulation 833. The product is a viscous liquid dispensed in small volumes and does not generate a mist in normal use. No other constituent is present at a concentration expected to generate a relevant airborne exposure from this aqueous mixture; the only constituent carrying an established exposure limit is a trace residue below 0.1%. In normal use, no airborne concentration approaching any of these limits is expected. <i>Occupational exposure limits cited from the ACGIH TLV list, US OSHA 29 CFR 1910.1000 Table Z-1, and Ontario Regulation 833 (Ontario Table).</i>
Engineering controls	General laboratory ventilation is sufficient. No special engineering controls are required.
Eye / face protection	Safety glasses meeting CSA Z94.3.
Skin protection	Disposable nitrile gloves and a lab coat.
Respiratory protection	Not required under normal handling of this aqueous liquid.

9 Physical and Chemical Properties

Physical state	Liquid (viscous)	Flash point	Not applicable (predominantly aqueous glycerol mixture; no volatile flammable solvent above trace level; any solvent residue is below 0.1%). No flash point supports a flammability class in Section 2.
Appearance	Clear blue liquid	Boiling point (initial)	No data available
Odour	Odourless to faint	Flammability (solid, gas)	Not applicable (liquid)
Odour threshold	No data available	Flammable / explosive limits	Not applicable
Vapour pressure	No data available	Vapour density (air = 1)	No data available
Colour	Blue (bromophenol blue tracking dye)	Oxidising properties	None
pH	~8 to 9 (buffered)	Relative density	~1.08 (computed from the formulation of record; not measured)
Melting / freezing point	Below -20 °C (glycerol-stabilised)	Solubility	Miscible with water
Evaporation rate	No data available	Partition coeff. (log K _{ow})	No data available
Auto-ignition temperature	No data available	Viscosity	Viscous (glycerol content); no measured value
Decomposition temperature	No data available	Explosive properties	None

As a predominantly aqueous glycerol mixture with no volatile flammable solvent above trace level, this product has no flash point and is not a flammable liquid; this is the basis for the absence of any flammability (H226 / H225) classification in Section 2. Estimated values are marked as estimated or computed; properties without a sourced value are stated as "No data available" rather than calculated.

10 Stability and Reactivity

Reactivity / stability	Stable under the recommended storage and handling conditions. No hazardous polymerisation. No hazardous reactions known.
Conditions to avoid	Repeated freeze/thaw cycles and prolonged storage above -20 °C (reduces enzyme activity but is not a safety hazard).
Incompatible materials	Strong oxidising agents.
Decomposition products	Thermal decomposition of the dried residue may yield carbon monoxide, carbon dioxide, and oxides of nitrogen and sulfur.

11 Toxicological Information

Likely routes of exposure	Eye and skin contact during pipetting are the only realistic routes; ingestion is unlikely; inhalation is not an expected route for this viscous, non-volatile aqueous liquid.
Acute toxicity (product)	Not classified. No component is present at a concentration that would make the mixture acutely toxic by the oral, dermal, or inhalation route.
Skin corrosion / irritation	Not classified. Transient mild irritation may occur with prolonged direct contact.
Serious eye damage / irritation	Not classified. Transient mild irritation may occur with direct contact; the buffered aqueous mixture does not meet the criteria for eye irritation at the shipped concentrations, individually or under the GHS mixture-additivity rules.
Respiratory / skin sensitisation	Not classified. No sensitiser is present at or above its classification cut-off. The polymerase is a non-volatile protein in solution and is not expected to present a sensitisation hazard under the recommended handling conditions.
STOT (single / repeated)	Not classified.
Aspiration hazard	Not classified (aqueous glycerol solution; not a hydrocarbon or other substance of the type that classifies for aspiration).
Carcinogenicity / mutagenicity / reproductive toxicity (CMR)	Not classified. No component present at or above 0.1% is listed as a carcinogen by IARC, NTP, or ACGIH; the only such listed substance in the formulation (a trace solvent residue carrying an ACGIH A3 notation) is present below 0.1%, under the CMR disclosure threshold.
Component reference data	Provided for the disclosed components; reference values for every proprietary constituent are on file, and none is present at a classifying level in the finished mix: - Glycerol: oral LD50 5,570 to 12,600 mg/kg (rat); practically non-toxic. - The dNTPs and bromophenol blue are not classified for acute toxicity. Of the proprietary constituents, none present at or above 0.1% is classified for any health effect at its neat concentration. The constituents that do carry classifications at neat concentration (a protease-inhibitor residue, a reducing agent and a trace solvent) are each present below 0.1%, far below every classification and disclosure cut-off. Where a measured value is not available for a component, classification is by calculation; the finished mixture is not classified by either route.

12 Ecological Information

Ecotoxicity	Not classified as hazardous to the aquatic environment. No component is present at an M-weighted concentration that would classify the mixture. The one constituent classified for long-term aquatic effects at its neat concentration (a non-ionic detergent) is present below 0.1% in the finished mix, far below the mixture-classification threshold.
Persistence	Glycerol and the buffer salts are readily biodegradable or are common environmental ions.
Bioaccumulation	Low potential.
Mobility	Highly mobile in soil and water due to water miscibility.
Other adverse effects	None known.

13 Disposal Considerations

Dispose of contents and container in accordance with local, provincial, and federal regulations. This product is not classified as a hazardous waste on the basis of its composition; however, users must verify their own waste characterisation and applicable institutional requirements. Do not release large volumes to drains. Treat any biological material introduced by the user (template DNA, samples) according to the user's biosafety requirements.

14 Transport Information

TDG (Canada)	Not Regulated. This product meets no transport hazard class under the Transportation of Dangerous Goods Regulations (SOR/2001-286). No UN number or packing group applies.
US DOT / IATA / IMDG	Not regulated for transport under United States DOT (49 CFR), IATA (air) or IMDG (sea). Confirm current requirements before any bulk or air shipment.
Environmental hazards	Not applicable; not a marine pollutant (no aquatic hazard classification, Section 12).
Transport in bulk (MARPOL Annex II / IBC Code)	Not applicable; not shipped in bulk.

15 Regulatory Information

Canada (WHMIS 2015)	Not classified under the Hazardous Products Regulations (SOR/2015-17). Every constituent of the formulation, disclosed and proprietary alike, is listed on the Canadian Domestic Substances List (DSL), with one exception: the deoxynucleotide triphosphates (dNTPs), supplied as a dilute aqueous mixture, are not listed on the DSL.
Other jurisdictions	No component is listed under California Proposition 65 in the form and use present in this product. Confirm inventory status (for example US TSCA) for the destination jurisdiction before export.

16 Other Information

Prepared by HoppeSyler Scientific Inc. · Approved by: HoppeSyler Scientific Inc.

Revision history

Version	Date	Change
1.0	2026-09-03	First HoppeSyler Scientific Safety Data Sheet for this product, prepared under WHMIS 2015 / GHS Rev. 5. Product determined not classified : the shipped tube is the purified, formulated reaction mix in a glycerol-based storage buffer, with the bacterial production inputs removed during purification, and every remaining component below its GHS cut-off, individually and by mixture additivity. Composition computed from the manufacturing formulation of record and disclosed by GHS band. Composition presentation revised 2026-09-03: the proprietary formulation is withheld and presented at the disclosure level required for a not-classified product (complete composition of record on file); no classification data changed. Prepared 2026-08-15; approved for release 2026-09-03.

Legend

GHS = Globally Harmonized System; WHMIS = Workplace Hazardous Materials Information System; TDG = Transportation of Dangerous Goods; DSL = Domestic Substances List; RUO = Research Use Only; PCR = Polymerase Chain Reaction; dNTP = deoxynucleotide triphosphate; CMR = carcinogen / mutagen / reproductive toxicant; STOT = specific target organ toxicity; PPE = personal protective equipment; TLV = threshold limit value (ACGIH); PEL = permissible exposure limit (OSHA); TWA = time-weighted average; STEL = short-term exposure limit; H = hazard statement; P = precautionary statement.

Disclaimer. The information herein is provided in good faith and believed accurate as of the issue date shown above. It is the user's responsibility to determine suitability for their purpose. HoppeSyler Scientific Inc. makes no warranty and assumes no liability for use of this information.

END OF SAFETY DATA SHEET