SAFETY DATA SHEET

Ipomoea batatas-Ingredient Probe qPCR Kit | Cat. No. BF-32622988

Compliant with GHS (Globally Harmonized System) · OSHA HazCom 2012 · EU REACH · GB/T 16483 / GB/T 17519

Version	1.0
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SDS ID	BF-SDS-RTPCR-001
Supersedes	All previous versions

SECTION 1: IDENTIFICATION

1.1 Product Identifiers

Product Name	Ipomoea batatas-Ingredient Probe qPCR Kit
Catalog Number	BF-32622988
Brand	BIOFARGO
Product Type	Research Reagent Kit — One-Step RT-PCR Kit
CAS Number	Mixture — see Section 16

1.2 Supplier / Manufacturer

Company	BIOFARGO, Inc.
Address	1716 E. Parham Road, Richmond, VA 23228, USA
Telephone	+1 (804) 529-2296
Email	contact@biofargo.com
Website	www.biofargo.com

1.3 Emergency Telephone Number

Emergency (24 h)	+1 (804) 529-2296 (BIOFARGO Technical Support)
CHEMTREC (US)	+1 (800) 424-9300

1.4 Recommended Use and Restrictions

Identified Use: For Research and Development (R&D) use only.

Uses Advised Against: Not for pharmaceutical, veterinary, household, diagnostic, food, or therapeutic use.

This is a summary SDS for a multi-component kit. Individual component SDS documents are available at www.biofargo.com. See Section 16 for kit component list.

SECTION 2: HAZARD IDENTIFICATION

2.1 GHS Classification of the Mixture

Flammable Liquids	Category 4 — H227
Acute Toxicity (oral)	Not classified
Skin Irritation	Not classified
Eye Irritation	Not classified
Reproductive Toxicity	Not classified

2.2 GHS Label Elements

Pictogram: No GHS hazard pictogram required for Category 4 flammable liquid.

Signal Word: WARNING

Hazard Statements:

- H227 Combustible liquid.

Precautionary Statements:

Prevention:

- P210 Keep away from heat, sparks, open flames, and hot surfaces. No smoking.
- P280 Wear protective gloves / eye protection / face protection.

Response:

- P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

- P403 + P235 Store in a well-ventilated place. Keep cool.

Disposal:

- P501 Dispose of contents and container in accordance with local regulations.

2.3 Hazards Not Otherwise Classified (HNOC)

- Vapors are heavier than air and may spread along floors or accumulate in low areas.
- Forms explosive air-vapor mixtures upon intense heating.
- Hazardous combustion gases or vapors may develop in a fire.

2.4 Health Hazards

Based on currently available information, no known health hazards are associated with this kit under normal conditions of use when handled in accordance with good laboratory practice.

2.5 Environmental Hazards

Based on currently available information, no known environmental hazards are associated with this product. Do not allow undiluted product or large quantities to reach groundwater, water courses, or sewage systems.

2.6 Other Hazards — PBT / vPvB Assessment

This mixture does not contain substances identified as PBT (Persistent, Bioaccumulative, and Toxic) or vPvB (very

Persistent and very Bioaccumulative) at concentrations ≥ 0.1%.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substance / 3.2 Mixture

This product is a multi-component research reagent kit (mixture). The kit contains aqueous enzyme-buffer solutions, lyophilized oligonucleotides, and non-infectious plasmid-based control material.

Individual component composition and CAS numbers are provided in the component-level SDS documents available at www.biofargo.com. See Section 16 for kit component inventory.

The primary flammable component contributing to H227 classification is glycerol or equivalent polyol stabilizer present in enzyme storage buffers at concentrations below OSHA action levels for individual hazard classification triggers.

SECTION 4: FIRST-AID MEASURES

4.1 Description of First-Aid Measures

Inhalation	Remove person to fresh air immediately. If symptoms persist, seek medical attention.
Skin contact	Remove contaminated clothing immediately. Wash affected area thoroughly with soap and water for at least 15 minutes. If irritation develops or persists, seek medical attention.
Eye contact	Immediately flush eyes with large amounts of water for at least 15 minutes, occasionally lifting upper and lower eyelids. Remove contact lenses if present and easy to do. Seek immediate medical attention.
Ingestion	Do NOT induce vomiting. Rinse mouth with water. Give 1–2 glasses of water to drink. Seek medical attention immediately. Never give anything by mouth to an unconscious person.

4.2 Most Important Symptoms and Effects, Acute and Delayed

No specific acute toxicity data are available for this mixture. Symptoms may include mild irritation of eyes, skin, or respiratory tract upon prolonged or repeated exposure.

4.3 Indication of Immediate Medical Attention and Special Treatment

Treat symptomatically. Provide product SDS to treating physician.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing Media

Suitable	Dry chemical powder, CO_2, alcohol-resistant foam, dry sand
Unsuitable	High-volume water jet (may spread fire)

5.2 Special Hazards Arising from the Substance or Mixture

- Combustible liquid (Category 4). Flash point > 60 °C.
- Vapors may accumulate in low-lying areas and ignite.

- Hazardous decomposition products may include CO, CO_2, and nitrogen oxides.

5.3 Advice for Firefighters

- Wear self-contained breathing apparatus (SCBA) and full protective gear.
- Cool containers exposed to fire with water spray.
- Prevent fire-fighting water from contaminating drainage or waterways.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, PPE, and Emergency Procedures

- Evacuate personnel from affected area.
- Wear appropriate PPE: nitrile gloves, safety glasses, and lab coat.
- Eliminate all ignition sources if spill is significant.

6.2 Environmental Precautions

- Prevent entry into drains, sewers, and waterways.
- Report significant spills to local environmental authorities as required.

6.3 Methods and Materials for Containment and Cleaning Up

- Absorb with inert absorbent material (vermiculite, dry sand, or paper towels).
- Transfer to suitable, labeled waste containers for disposal.
- Clean contaminated surface with water. Allow area to ventilate.

6.4 Reference to Other Sections

See Section 8 for personal protection. See Section 13 for disposal guidance.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for Safe Handling

- Handle in a well-ventilated laboratory area.
- Keep away from open flames, hot surfaces, and all sources of ignition.
- Take precautionary measures against static discharge when handling larger quantities.
- Avoid contact with eyes, skin, and clothing.
- Wash hands and exposed skin thoroughly after handling.
- Change contaminated clothing immediately.

7.2 Conditions for Safe Storage

Recommended temperature	2–8 °C (refrigerator)
Container type	Original manufacturer containers, tightly sealed
Special conditions	Store away from heat, light, and incompatible materials
Storage class (TRGS 510)	10 — Combustible liquids

Incompatibilities	Strong oxidizing agents, strong acids, strong bases
Shelf life	See product label or 12 months from date of manufacture

7.3 Specific End Uses

For Research and Development use only. Refer to the product manual for detailed handling and usage instructions.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters

No OSHA PEL, ACGIH TLV, or NIOSH REL have been established for this product or its individual components at the concentrations present in this kit.

8.2 Appropriate Engineering Controls

- Handle in a laboratory equipped with general and local exhaust ventilation.
- Provide eyewash station and emergency shower in the work area.
- Standard laboratory biosafety practices should be followed.

8.3 Individual Protection Measures / PPE

Eye / Face protection	Safety glasses with side shields; chemical splash goggles if splash risk exists
Skin / Hand protection	Nitrile or latex examination gloves (0.1 mm minimum thickness)
Body protection	Laboratory coat; flame-resistant lab coat if working near ignition sources
Respiratory protection	Not required under normal conditions of use. Use NIOSH-approved respirator if ventilation is inadequate.
General hygiene	Do not eat, drink, or smoke in areas where this product is used. Wash hands before breaks and after use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

Appearance	Clear to slightly opaque aqueous solution (liquid components); white lyophilized powder (primer-probe component)
Odor	Odorless to slightly characteristic
Odor threshold	Not determined
pH	7.0–8.5 (aqueous components)
Melting point / Freezing point	Not applicable (mixture)
Boiling point	≥ 100 °C (aqueous components)
Flash point	> 60 °C (estimated; Category 4 flammable liquid)
Evaporation rate	Similar to water

Flammability (solid, gas)	Not applicable
Upper/Lower flammability limits	Not determined
Vapor pressure	Similar to water at ambient temperature
Vapor density	> 1 (air = 1) for glycerol-containing components
Relative density	~1.0–1.1 g/mL
Solubility	Fully miscible with water
Partition coefficient (log Pow)	Not applicable (mixture)
Auto-ignition temperature	Not determined
Decomposition temperature	Not determined
Viscosity	Low viscosity liquid

9.2 Other Information

Detailed physical and chemical data for individual components are available in component-specific SDS documents at www.biofargo.com.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No dangerous reactions known under conditions of normal storage and use.

10.2 Chemical Stability

Stable under recommended storage conditions (2–8 °C, dry environment, original sealed containers).

10.3 Possibility of Hazardous Reactions

No hazardous polymerization will occur.

10.4 Conditions to Avoid

- Excessive heat (> 60 °C), open flames, and ignition sources.
- Prolonged exposure to light.
- Repeated freeze-thaw cycling (may reduce enzyme activity).

10.5 Incompatible Materials

- Strong oxidizing agents (e.g., permanganates, peroxides, chlorates).
- Strong acids (pH < 3) or strong bases (pH > 11).
- Heavy metal ions (may inhibit enzyme activity).

10.6 Hazardous Decomposition Products

- Under fire conditions: carbon monoxide (CO), carbon dioxide (CO_2), nitrogen oxides (NO_x).
- Under normal conditions: none known.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects

Acute toxicity (oral)	No data available for mixture. Components not expected to be acutely toxic at concentrations present.
Acute toxicity (dermal)	No data available. Not expected to cause significant skin absorption hazard.
Acute toxicity (inhalation)	Not expected to present inhalation hazard under normal laboratory conditions.
Skin corrosion / irritation	Not classified. May cause mild irritation with prolonged contact.
Serious eye damage / irritation	Not classified. Transient mild irritation possible.
Respiratory / skin sensitization	No sensitization data available. Not expected to be a sensitizer.
Germ cell mutagenicity	No data available. Not expected to be mutagenic based on composition.
Carcinogenicity	Not listed as carcinogen by IARC, NTP, or OSHA.
Reproductive toxicity	No data available. Not expected.
STOT — single exposure	Not classified.
STOT — repeated exposure	Not classified.
Aspiration hazard	Not classified (aqueous mixture).

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

No ecotoxicological data are available for this mixture. Components are not expected to exhibit significant aquatic toxicity at concentrations present.

12.2 Persistence and Degradability

The aqueous buffer components are expected to be readily biodegradable. Nucleic acid components will degrade in the environment.

12.3 Bioaccumulative Potential

Not expected to bioaccumulate (mixture of hydrophilic components, log Kow < 3).

12.4 Mobility in Soil

Aqueous components are expected to be mobile in soil. Contains no persistent organic compounds of concern.

12.5 Results of PBT and vPvB Assessment

This product does not contain PBT or vPvB substances at ≥ 0.1%.

12.6 Other Adverse Effects

Avoid release to the environment. Do not allow to enter drains, sewers, or waterways.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

- Dispose of in accordance with all applicable federal, state, and local regulations.
- Incinerate in a licensed facility, or arrange for pickup by a licensed waste disposal contractor.
- Do not pour down the drain unless local regulations explicitly permit.
- Container disposal: Decontaminate and dispose of according to applicable regulations.

Waste code (EU): 18 01 06* — chemicals consisting of or containing hazardous substances (laboratory waste). Consult your local hazardous waste disposal authority for specific requirements.

SECTION 14: TRANSPORT INFORMATION

UN Number	Not regulated for transport
UN Proper Shipping Name	Not a dangerous good
Transport Hazard Class(es)	None
Packing Group	Not applicable
Environmental Hazards	Not classified as environmentally hazardous for transport purposes
Special Precautions for User	Transport in original, tightly sealed containers at 2–8 °C (cold pack recommended).
ADR/RID (road/rail)	Not regulated
IMDG (sea)	Not regulated
IATA-DGR (air)	Not regulated

14.7 Transport in Bulk

Not applicable for laboratory quantities.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, Health, and Environmental Regulations

OSHA HazCom 2012 (29 CFR 1910.1200)	This SDS complies with OSHA Hazard Communication Standard.
EPA TSCA (US)	Components are listed or exempt under TSCA inventory.
CERCLA / SARA Title III	No SARA 302 Extremely Hazardous Substances. No CERCLA reportable quantities apply.
California Prop 65	No Prop 65 listed chemicals at concentrations requiring warning.
EU REACH	Components comply with REACH registration requirements where applicable.
GB/T 16483 / GB/T 17519 (China)	This SDS conforms to Chinese national standard for safety data sheets.
China NRCO Hazardous Chemicals	Components are listed in the Catalogue of Hazardous Chemicals where applicable.

15.2 Chemical Safety Assessment

A formal Chemical Safety Assessment has not been performed for this research reagent kit. Users should perform their own risk assessment based on their specific conditions of use.

SECTION 16: OTHER INFORMATION

16.1 H-Statement Full Text

H227	Combustible liquid.

16.2 Abbreviations and Acronyms

GHS	Globally Harmonized System of Classification and Labelling of Chemicals
SDS	Safety Data Sheet
PBT	Persistent, Bioaccumulative, and Toxic
vPvB	Very Persistent and Very Bioaccumulative
STOT	Specific Target Organ Toxicity
OSHA	Occupational Safety and Health Administration (USA)
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (EU)
TSCA	Toxic Substances Control Act (USA)
PCR	Polymerase Chain Reaction
RT-PCR	Reverse Transcription Polymerase Chain Reaction

16.3 Kit Component Inventory

Component	Description	Volume	Vial	Lid Color
2× One-Step RT-PCR Master Mix	Contains optimized buffer and enzyme mix	500 µL	0.5 mL Vial	Blue
Primer-Probe Powder	Lyophilized target-specific lyophilized primer and probe set	50 T	1.5 mL Vial	Brown
Positive Control (1E7 copies/µL)	Non-infectious plasmid-based control	0.5 ml	0.5 mL Vial	Yellow
Nuclease-free water / Dilution Buffer	For reaction setup	1 ml	1.5 mL Vial	Green
Manual	Instruction booklet	1 Set	N/A	N/A

** After reconstitution with Nuclease-free Water per protocol.*

16.4 GHS Hazard Classification per Component

2× One-Step RT-PCR Master Mix	H227 — Combustible liquid (Category 4). Signal word: Warning.
Primer-Probe Powder	No hazard classification required.
Positive Control (1E7 copies/µL)	No hazard classification required. Non-infectious.
Nuclease-free Water	No hazard classification required.

16.5 Preparation / Revision History

Prepared by	BIOFARGO Technical Documentation Team
Initial issue date	January 1, 2025
Revision date	April 1, 2026
Reason for revision	Format upgrade to GHS / OSHA HazCom 2012 / Sigma-Aldrich standard structure; correction of Section 2 emergency summary; completion of Sections 3–15; addition of Section 16.2–16.5.

16.6 Disclaimer

The information in this Safety Data Sheet is based on data believed to be reliable. It is provided in good faith and is believed to be accurate as of the revision date. BIOFARGO, Inc. makes no warranty, express or implied, regarding the accuracy or completeness of this information.

This SDS is intended only as a guideline for safe handling, use, processing, storage, transportation, and disposal of this product. It is not to be treated as a guarantee of any specific property. Users are responsible for assessing the suitability of this product for their particular purposes and for ensuring compliance with applicable laws and regulations.

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