

SAFETY DATA SHEET

Prepared in accordance with OSHA Hazard Communication Standard (29 CFR 1910.1200)

Prepared using the format established by GHS Rev. 9 and EU REACH Annex II

SECTION 1 – IDENTIFICATION

1.1 Product Identifiers

Product Name: InScriptase™ mRNA Synthesis 2x Master Mix : +CC / m1Ψ

Product number: IMM410

1.2 Relevant identified uses of the substance or mixture and uses advised against

This product is intended exclusively for laboratory research and development only

Uses Advised Against:

This product is not intended for:

- Human therapeutic use
- Veterinary use
- Clinical diagnosis
- Food processing
- Cosmetic manufacture
- Household applications
- Consumer use

1.3 Supplier Information

Manufacturer: IRES Biosciences

Address: 867 Boylston St, Boston, MA

Telephone: +1 774-999-5790

Email: info@iresbiosciences.com

SECTION 2 – HAZARD IDENTIFICATION

2.1 Classification

The product is not classified as a hazardous chemical under the OSHA Hazard Communication Standard (29 CFR 1910.1200) when supplied.

2.2 Label Elements

Mixture not classified as hazardous

Hazard Statements

Mixture not classified as hazardous. No hazard statements are required for the supplied formulation.

Prevention

- Handle using accepted laboratory safety practices.
- Avoid unnecessary contact with skin and eyes.
- Avoid inhalation of aerosols generated during laboratory procedures.
- Do not consume food or beverages while handling laboratory reagents.
- Wash hands thoroughly after use.

Response

If accidental exposure occurs, follow the first aid recommendations provided in Section 4.

Storage

Maintain containers securely closed.

Store under recommended laboratory storage conditions.

Protect from contamination.

Disposal

Dispose of product and contaminated materials in accordance with institutional chemical waste procedures and applicable regulations.

2.3 Other Hazards

No endocrine-disrupting properties have been identified for the proprietary formulation based on available data.

No additional hazards have been identified beyond those described in this Safety Data Sheet.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS**3.1 Product Type**

Mixture

3.2 Composition**Chemical Name Weight % Specific Concentration limit**

Trade Secret	5-10	-
Trade Secret	5-10	-
Trade Secret	2-4	-

Functional Description

The formulation contains proprietary combinations of:

- biochemical substrates
- catalytic proteins
- buffering agents

- inorganic salts
- stabilizing compounds
- formulation excipients
- preservative components

The formulation has been evaluated as supplied for hazard classification.

Acute Toxicity Estimates

The following Acute Toxicity Estimates (ATE) are representative of the proprietary formulation.

Toxicological Endpoint	Acute Toxicity Estimate
Oral ATE	73,684.2 mg/kg
Dermal ATE	52,631.6 mg/kg
Inhalation ATE (Gas)	99,999 ppm
Inhalation ATE (Vapor)	99,999 mg/L
Inhalation ATE (Dust/Mist)	99,999 mg/L

Additional Information

The product does not contain hazardous constituents requiring disclosure above applicable regulatory reporting thresholds based on the formulation evaluated.

SECTION 4 – FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice

Show this Safety Data Sheet to medical personnel.

Eye Contact

Rinse with large amounts of water for at least fifteen minutes. Remove contact lenses.
Seek medical evaluation.

Skin Contact

Wash exposed skin thoroughly using soap and water.

Inhalation

Move the affected individual into fresh air. If respiratory symptoms continue or worsen, obtain medical attention.

Ingestion

Rinse the mouth thoroughly with water. Seek medical advice if symptoms occur or if significant quantities have been swallowed.

SECTION 5 – FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

Use extinguishing measures appropriate for the surrounding environment. Suitable media include: water spray, alcohol-resistant foam, dry chemical, or carbon dioxide (CO₂).

Unsuitable Extinguishing Media

Avoid using high-pressure water streams that may spread contaminated material.

5.2 Special Hazards Arising from the Substance or Mixture

No information available

5.3 Advice for Firefighters

Firefighters should wear self-contained breathing apparatus (SCBA) and full protective clothing. Use protective equipment appropriate to the surrounding fire conditions.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Avoid contact with spilled material. Ensure adequate ventilation if aerosols are generated. Wear appropriate personal protective equipment. Restrict access until cleanup is complete.

6.2 Environmental Precautions

Prevent release to drains, surface water, groundwater, and soil. Contain spills using good laboratory practices.

6.3 Methods and Materials for Containment and Cleaning Up

Stop the leak if it can be done safely. Contain the spill and absorb with an inert material. Collect waste in suitable containers for disposal. Wash the affected area with water after material removal.

6.4 Reference to Other Sections

For personal protective equipment, see **Section 8**. For disposal information, see **Section 13**.

SECTION 7 – HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Handle in accordance with good laboratory practices. Avoid contact with eyes, skin, and clothing. Do not pipette by mouth. Avoid generating aerosols. Do not eat, drink, or smoke while handling. Wash thoroughly after use.

7.2 Conditions for Safe Storage

Keep container tightly closed and store under recommended laboratory conditions. Protect from contamination and direct sunlight. Avoid repeated freeze-thaw cycles. Store separately from incompatible materials, including strong oxidizing agents, strong acids, and strong bases.

7.3 Specific End Use(s)

For laboratory research use only

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters

Components with Workplace Control Parameters

No occupational exposure limits have been established for this proprietary formulation.

Engineering Controls

General laboratory ventilation is normally sufficient. Use local exhaust ventilation where aerosols or mists may be generated.

Personal Protective Equipment

Respiratory Protection:

Not normally required. Use appropriate respiratory protection if aerosols or mists are generated.

Hand Protection:

Chemical-resistant gloves (e.g., nitrile).

Eye Protection:

Safety glasses with side shields or chemical splash goggles meeting applicable national standards.

Skin and Body Protection:

Laboratory coat or other suitable protective clothing.

Hygiene Measures

Avoid contact with eyes, skin, and clothing. Do not eat, drink, or smoke while handling. Wash hands thoroughly after handling and remove contaminated clothing before reuse.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

The following information represents the proprietary formulation supplied under normal laboratory storage conditions. Unless otherwise noted, values are representative of the finished formulation rather than individual proprietary constituents.

Property	Value
Physical State	Liquid
Appearance	Clear solution
Color	Colorless to nearly colorless
Odor	Mild characteristic laboratory odor
Odor Threshold	No data available
pH	Approximately neutral (product dependent)
Melting Point	No data available
Freezing Point	No data available
Initial Boiling Point	No data available
Boiling Range	No data available
Flash Point	Not determined; aqueous formulation
Evaporation Rate	No data available
Flammability	Not classified as flammable
Upper Explosive Limit	No data available
Lower Explosive Limit	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Relative Density	No data available
Density	Comparable to aqueous laboratory solutions
Water Solubility	Completely miscible
Solubility in Other Solvents	No data available
Partition Coefficient (n-octanol/water)	No data available
Auto-ignition Temperature	No data available
Decomposition Temperature	No data available
Dynamic Viscosity	No data available
Kinematic Viscosity	No data available
Explosive Properties	None identified
Oxidizing Properties	Not classified as oxidizing

9.2 Other Information

Physical Hazard Characteristics

No additional physical hazards have been identified for the proprietary formulation.

Particle Characteristics

Not applicable to a liquid formulation.

Property	Value
Particle Size	Not applicable
Particle Size Distribution	Not applicable

SECTION 10 – STABILITY AND REACTIVITY

10.1 Reactivity

The formulation is not expected to exhibit hazardous reactivity during storage, transport, or intended laboratory use.

10.2 Chemical Stability

Stable when handled and stored under recommended laboratory conditions.

10.3 Possibility of Hazardous Reactions

Hazardous reactions are not anticipated during normal handling.

Hazardous polymerization will not occur.

10.4 Conditions to Avoid

Avoid conditions that may adversely affect product integrity, including:

- prolonged exposure to elevated temperatures
- contamination with incompatible chemicals
- repeated unnecessary freeze-thaw cycles
- excessive evaporation
- storage outside recommended conditions

10.5 Incompatible Materials

Avoid direct contact with:

- strong oxidizing agents
- strong mineral acids
- concentrated alkalis
- reactive halogenating agents

Compatibility should be evaluated before combining with other laboratory reagents.

10.6 Hazardous Decomposition Products

Thermal decomposition may generate:

Possible Decomposition Products

Carbon oxides

Nitrogen oxides

Phosphorus oxides

Irritating organic vapors

Other combustion by-products depending upon fire conditions

Stability Summary

Property	Result
Chemical Stability	Stable
Hazardous Polymerization	Will not occur
Hazardous Reactions	None anticipated
Mechanical Impact Sensitivity	None known
Static Discharge Sensitivity	None known

SECTION 11 – TOXICOLOGICAL INFORMATION

11.1 Information on Likely Routes of Exposure

Potential exposure may occur through:

- Eye contact
- Skin contact
- Inhalation of aerosols or mists
- Accidental ingestion

Normal laboratory handling is not expected to produce significant exposure.

Symptoms Associated with Exposure

Potential symptoms following accidental exposure may include:

Route	Potential Effects
Eyes	Mild transient irritation
Skin	Mild irritation or dryness following prolonged contact
Inhalation	Temporary respiratory discomfort if aerosols are generated
Ingestion	Mild gastrointestinal discomfort

No delayed toxic effects are expected based on available information.

Numerical Measures of Toxicity

The following Acute Toxicity Estimates (ATE) are representative of the proprietary formulation.

Endpoint	Value
ATEmix (Oral)	73,684.2 mg/kg
ATEmix (Dermal)	52,631.6 mg/kg
ATEmix (Inhalation – Gas)	99,999 ppm
ATEmix (Inhalation – Vapor)	99,999 mg/L
ATEmix (Inhalation – Dust/Mist)	99,999 mg/L

Component Acute Toxicity Information

Specific identities are withheld as trade secrets.

Proprietary Component	Oral LD ₅₀	Dermal LD ₅₀	Inhalation LC ₅₀
Proprietary Biochemical Reaction Matrix	Trade Secret	Trade Secret	Trade Secret
Proprietary Catalytic Protein System	Trade Secret	Trade Secret	Trade Secret
Proprietary Buffer, Stabilizer & Excipient System	Trade Secret	Trade Secret	Trade Secret

Acute Toxicity Assessment

Based on available information, the formulation exhibits low acute toxicity and does not require classification for acute oral, dermal, or inhalation toxicity under the supplied conditions.

Skin Corrosion / Irritation

The formulation is not expected to cause corrosive effects.

Repeated or prolonged exposure may result in mild transient irritation in susceptible individuals.

Serious Eye Damage / Eye Irritation

Direct eye contact may produce temporary irritation characterized by:

- redness
- watering
- mild discomfort

Respiratory Sensitization

No evidence indicates respiratory sensitization under intended conditions of use.

Skin Sensitization

No sensitizing effects are anticipated based on available information.

Germ Cell Mutagenicity

No information suggests mutagenic potential for the proprietary formulation.

Carcinogenicity

The proprietary formulation is not known to contain components classified as carcinogenic by:

- IARC
- NTP
- OSHA
- ACGIH

at concentrations requiring disclosure.

Reproductive Toxicity

No reproductive hazards have been identified based on available formulation information.

Specific Target Organ Toxicity – Single Exposure

No target organ toxicity is anticipated following a single exposure during intended laboratory use.

Specific Target Organ Toxicity – Repeated Exposure

Repeated occupational exposure under normal laboratory conditions is not expected to produce target organ toxicity.

Aspiration Hazard

The aqueous nature of the formulation indicates that aspiration hazard is not anticipated.

Delayed and Chronic Effects

No chronic adverse health effects have been identified for the supplied formulation when used according to recommended laboratory practices.

Medical Conditions Potentially Aggravated by Exposure

Individuals with pre-existing:

- skin disorders
- eye conditions
- respiratory sensitivities

may experience increased irritation following exposure.

SECTION 12 – ECOLOGICAL INFORMATION

12.1 Ecotoxicity

The proprietary formulation has not been tested as a complete mixture for environmental toxicity. Based on available information from the source SDSs, significant adverse environmental effects are not expected under normal conditions of laboratory use. Releases to the environment should nevertheless be minimized.

Ecotoxicological Summary

Endpoint	Assessment
Aquatic Toxicity	No classification indicated for supplied formulation
Terrestrial Toxicity	No information available
Toxicity to Microorganisms	No information available
Unknown Aquatic Toxicity	No known components contributing to classification based on available formulation data

12.2 Persistence and Degradability

No experimental degradation studies have been performed on the proprietary formulation. The aqueous nature of the formulation suggests that many constituents are expected to degrade through normal biological or chemical processes; however, quantitative degradation data are not available.

Property	Result
Biodegradability	No information available
Persistence	No information available

12.3 Bioaccumulative Potential

No bioaccumulation study has been conducted for the proprietary mixture.

Bioaccumulation Assessment

Property	Result
Bioaccumulation Potential	Not expected to be significant
Partition Coefficient (Log Kow)	No information available for proprietary formulation

12.4 Mobility in Soil

No mobility studies are available for the complete formulation. Because the product is supplied as an aqueous solution, released material is expected to disperse readily in water.

Property	Result
Mobility in Soil	No information available
Water Mobility	Expected to be high due to aqueous formulation

12.5 Results of PBT and vPvB Assessment

Assessment of the proprietary formulation based on currently available information indicates that the product is not expected to meet the criteria for Persistent, Bioaccumulative and Toxic (PBT) or very Persistent and very Bioaccumulative (vPvB) substances.

Assessment	Result
PBT	Not expected to meet criteria
vPvB	Not expected to meet criteria

12.6 Endocrine Disrupting Properties

No information is available indicating endocrine-disrupting properties for the proprietary formulation.

12.7 Other Adverse Effects

No additional adverse ecological effects have been identified based on currently available information.

SECTION 13 – DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Dispose of product, residues, and contaminated absorbent materials in accordance with applicable federal, state, provincial, local, and institutional regulations.

Waste classification should be determined by the generator based upon the final composition of the waste and applicable regulatory requirements.

Product Disposal

- Collect unused product in properly labeled chemical waste containers.
- Prevent unnecessary discharge into drains or the environment.
- Minimize waste generation whenever practical.

Contaminated Packaging

Empty containers may contain product residue.

Do not reuse containers for unrelated materials.

Dispose of packaging according to institutional procedures and applicable regulations.

Waste Summary

Waste Stream	Recommended Practice
Unused Product	Chemical waste disposal
Spill Cleanup Materials	Dispose with laboratory chemical waste
Empty Containers	Dispose or recycle according to local regulations

SECTION 14 – TRANSPORT INFORMATION

The proprietary formulation is not regulated as a dangerous good for transport under applicable international transport regulations.

Transport Classification

Regulation	UN Number	Proper Shipping Name	Hazard Class	Packing Group	Environmental Hazard
DOT (United States)	Not regulated	Not regulated	Not regulated	Not regulated	No
IATA	Not regulated	Not regulated	Not regulated	Not regulated	No
ICAO	Not regulated	Not regulated	Not regulated	Not regulated	No
IMDG	Not regulated	Not regulated	Not regulated	Not regulated	No
ADR	Not regulated	Not regulated	Not regulated	Not regulated	No
RID	Not regulated	Not regulated	Not regulated	Not regulated	No
ADN	Not regulated	Not regulated	Not regulated	Not regulated	No

Special Precautions

Transport containers should remain tightly closed and protected from physical damage.
Maintain recommended storage temperatures where temperature-sensitive handling is required.

SECTION 15 – REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations

OSHA Hazard Communication Standard

The proprietary formulation has been evaluated according to OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III

Regulation	Status
Section 302	No reportable substances identified
Section 311/312	Product evaluated according to applicable hazard categories
Section 313	No reportable constituents identified based on available formulation information

CERCLA

No components are known to require reporting under CERCLA based on available formulation information.

Clean Air Act (CAA)

No regulated hazardous air pollutants are known to be present at reportable concentrations.

Clean Water Act (CWA)

No reportable pollutants have been identified based on available information.

California Proposition 65

No constituents are known to require a Proposition 65 warning based on available formulation information.

REACH

Regulation	Status
REACH Annex XIV (Authorization)	No substances identified based on available formulation information
REACH Annex XVII (Restriction)	No substances identified based on available formulation information

Persistent Organic Pollutants (POPs)

No known applicable substances identified.

Ozone Depleting Substances

No known ozone-depleting substances identified.

International Chemical Inventories

Inventory status for proprietary constituents may vary by jurisdiction.

Inventory	Status
TSCA	Contact supplier for compliance status
DSL/NDSL	Contact supplier
EINECS/ELINCS	Contact supplier
IECSC	Contact supplier
ENCS	Contact supplier
KECL	Contact supplier
PICCS	Contact supplier
AIIC	Contact supplier
NZIoC	Contact supplier

Chemical Safety Assessment

No chemical safety assessment has been performed for the proprietary formulation as supplied.

SECTION 16 – OTHER INFORMATION**Abbreviations**

Abbreviation	Definition
OSHA	Occupational Safety and Health Administration
GHS	Globally Harmonized System

Abbreviation	Definition
SDS	Safety Data Sheet
ATE	Acute Toxicity Estimate
PBT	Persistent, Bioaccumulative and Toxic
vPvB	Very Persistent and Very Bioaccumulative
DNEL	Derived No Effect Level
PNEC	Predicted No Effect Concentration
DOT	Department of Transportation
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
TSCA	Toxic Substances Control Act
SARA	Superfund Amendments and Reauthorization Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CAA	Clean Air Act
CWA	Clean Water Act
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals

References

This Safety Data Sheet was prepared using safety information provided in the source Safety Data Sheets supplied for the proprietary formulation and applicable hazard communication requirements. Regulatory formatting was developed to align with OSHA Hazard Communication Standard (29 CFR 1910.1200) and the organizational structure of REACH Annex II.

Disclaimer

The information contained in this Safety Data Sheet is believed to be accurate based on the information available at the date of preparation, but it is not exhaustive. It is intended solely to assist in the safe handling, storage, transportation, use, and disposal of the product. This information should not be interpreted as a guarantee of specific product characteristics or suitability for any particular application. Users are responsible for ensuring that handling, storage, use, and disposal are conducted in compliance with applicable laws, regulations, and institutional safety practices.