

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Identity ThruPLEX® Tag-seq Kit

Alternate Names ThruPLEX Tag-seq 6S Kit [R400584]
ThruPLEX Tag-seq 48S Kit [R400585]
ThruPLEX Tag-seq 96D Kit [R400586]

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

Intended use See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name Rubicon Genomics, Inc.
4743 Venture Drive
Ann Arbor, MI 48108
Website: www.rubicongenomics.com
Fax: 734-477-9902

Emergency Telephone No. 734-677-4845

2. Hazard identification of the product

The hazards identified with this kit are those associated with substances found within the following components.

Kit Components:


Template Preparation Buffer	Library Synthesis Enzyme
Template Preparation Enzyme	Library Amplification Buffer
Library Synthesis Buffer	Library Amplification Enzyme

2.1. Classification of the substance or mixture

Template Preparation Buffer	Skin Irrit. 3;H316 Causes mild skin irritation. (Not adopted by US OSHA)
Template Preparation Enzyme	No applicable GHS categories
Library Synthesis Buffer	Skin Irrit. 3;H316 Causes mild skin irritation. (Not adopted by US OSHA)
Library Synthesis Enzyme	No applicable GHS categories
Library Amplification Buffer	Acute Tox. 5;H303 May be harmful if swallowed. (Not adopted by US OSHA) Skin Irrit. 3;H316 Causes mild skin irritation. (Not adopted by US OSHA) STOT SE 2;H371 May cause damage to organs. Specific Target Organs: (central nervous system)
Library Amplification Enzyme	No applicable GHS categories
Nuclease-Free Water	No applicable GHS categories
Index Plates/Reagents	No applicable GHS categories

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

Template Preparation Buffer	<p>Signal Word: Warning H316 Causes mild skin irritation. [Prevention]: No GHS prevention statements [Response]: P332+313 If skin irritation occurs: Get medical advice / attention. [Storage]: No GHS storage statements [Disposal]: No GHS disposal statement</p>
Library Synthesis Buffer	<p>Signal Word: Warning H316 Causes mild skin irritation. [Prevention]: No GHS prevention statements [Response]: P332+313 If skin irritation occurs: Get medical advice / attention. [Storage]: No GHS storage statements [Disposal]: No GHS disposal statement</p>
Library Amplification Buffer	<p></p> <p>Signal Word: Warning H303 May be harmful if swallowed. H316 Causes mild skin irritation. H371 May cause damage to organs. [Prevention]: P260 Do not breathe mist / vapors / spray. P264 Wash thoroughly after handling. P270 Do not eat, drink or smoke when using this product. [Response]: P309+311 IF exposed or you feel unwell Call a POISON CENTER or doctor / physician. P312 Call a POISON CENTER or doctor / physician if you feel unwell. P332+313 If skin irritation occurs: Get medical advice / attention. [Storage]: P405 Store locked up. [Disposal]: P501 Dispose of contents / container in accordance with local / national regulations</p>
Template Preparation Enzyme; Library Synthesis Enzyme; Library Amplification Enzyme; Nuclease-Free Water; Index Plates/Reagents	<p>No applicable GHS categories [Prevention]: No GHS prevention statements [Response]: No GHS response statements [Storage]: No GHS storage statements [Disposal]: No GHS disposal statement</p>

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Template Preparation Buffer

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Tromethamine CAS Number: 0000077-86-1	1.0 - 10	Skin Irrit. 2;H315 Eye Irrit. 2;H319 STOT SE 3;H335	[1]

Template Preparation Enzyme

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Glycerol CAS Number: 0000056-81-5	50 - 75		[1][2]

Library Synthesis Buffer

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Tromethamine CAS Number: 0000077-86-1	1.0 - 10	Skin Irrit. 2;H315 Eye Irrit. 2;H319 STOT SE 3;H335	[1]

Library Synthesis Enzyme

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Glycerol CAS Number: 0000056-81-5	50 - 75		[1][2]

Library Amplification Buffer

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Glycerol CAS Number: 0000056-81-5	25 - 50		[1][2]
Tetramethylammonium chloride CAS Number: 0000075-57-0	1.0 - 10	Acute Tox. 2;H300 Acute Tox. 3;H311 Skin Irrit. 2;H315 STOT SE 1;H370 Aquatic Chronic 2;H411	[1]
Tromethamine CAS Number: 0000077-86-1	1.0 - 10	Skin Irrit. 2;H315 Eye Irrit. 2;H319 STOT SE 3;H335	[1]

Library Amplification Enzyme

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Glycerol CAS Number: 0000056-81-5	50 - 75		[1][2]

Nuclease-Free Water, Index Plates/Reagents

There are no ingredients in these components which are classified as hazardous.

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General

In all cases of doubt, or when symptoms persist, seek medical attention.
Never give anything by mouth to an unconscious person.

Inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eyes

Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.

Skin Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.

Ingestion If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Overview No specific symptom data available.
See section 2 for further details.

5. Fire-fighting measures

5.1. Extinguishing media

Carbon Dioxide, dry chemical powder or appropriate foam.

5.2. Special hazards arising from the substance or mixture

Slight Flammability. Material must be heated before ignition will occur.

5.3. Advice for fire-fighters

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

ERG Guide No. ----

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8).

6.2. Environmental precautions

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Absorb spill with inert material, then place in a chemical waste container.

7. Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes.

Avoid inhalation.

Avoid Ingestion.

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Keep all containers tightly closed.

Store at -20 C.

Incompatible materials: Strong oxidizing agents, strong bases

See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

No data available.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0000056-81-5	Glycerol	OSHA	TWA 15 mg/m3 (total) TWA 5 mg/m3 (resp)
		ACGIH	TWA: 3 mg/m3 (respirable) 10 mg/m3 (mist)
		NIOSH	No established RELs
		Supplier	No Established Limit
0000075-57-0	Tetramethylammonium chloride	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
0000077-86-1	Tromethamine	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
0000056-81-5	Glycerol	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0000075-57-0	Tetramethylammonium chloride	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0000077-86-1	Tromethamine	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Exposure Controls: No special measures or monitoring required. Facility should be equipped with an eyewash facility and a safety shower.

Personal Protective Equipment: The usual precautionary measures are to be adhered to. Use protective gloves, clothing, and safety goggles.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Reagent vials containing liquid
Odor	Unknown
Odor threshold	Not Measured
pH	Not Measured
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	Not Measured
Flash Point	Not Measured
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable

Upper/lower flammability or explosive limits

Lower Explosive Limit: Not Measured

Upper Explosive Limit: Not Measured

Vapor pressure (Pa)

Not Measured

Vapor Density

Not Measured

Specific Gravity

Not Measured

Solubility in Water

Not Measured

Partition coefficient n-octanol/water (Log Kow)

Not Measured

Auto-ignition temperature

Not Measured

Decomposition temperature

Not Measured

Viscosity (cSt)

Not Measured

9.2. Other information

No other relevant information.

10. Stability and reactivity**10.1. Reactivity**

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Keep away from oxidizing agents, excessive heat, and ignition sources.

10.5. Incompatible materials

Strong oxidizing agents, strong bases

10.6. Hazardous decomposition products

Oxides of phosphorus, oxides of sulfur, phosphine.

11. Toxicological information**Acute toxicity**

See section 2 for GHS Classifications.

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr	Inhalation Gas LD50, ppm
Glycerol - (56-81-5)	12,600.00, Rat - Category: NA	10,000.00, Rabbit - Category: NA	No data available	No data available	No data available
Tetramethylammonium chloride - (75-57-0)	47.00, Rat - Category: 2	500.00, Rabbit - Category: 3	No data available	No data available	No data available
Tromethamine - (77-86-1)	No data available	No data available	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

12. Ecological information**12.1. Toxicity**

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Glycerol - (56-81-5)	67,500.00, Oncorhynchus mykiss	10,000.00, Daphnia magna	Not Available
Tetramethylammonium chloride - (75-57-0)	462.00, Pimephales promelas	Not Available	Not Available
Tromethamine - (77-86-1)	Not Available	Not Available	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

13. Disposal considerations

13.1. Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

14. Transport information

DOT

Proper Shipping Name: None

Non-Hazardous for Transport: This substance is considered to be non-hazardous for ground transport

IATA

Non-Hazardous for Air Transport: Non-Hazardous for air transport.

15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

Toxic Substance Control Act (TSCA) All components of this material are either listed or exempt from listing on the TSCA Inventory.

WHMIS Classification Not Regulated

Canadian DSL/NDSL: CAS# 56-81-5 is listed on Canada's DSL List.

Canada Ingredient Disclosure List: No Product Ingredients Listed

US EPA Tier II Hazards

Fire: No

Sudden Release of Pressure: No

Reactive: No

Immediate (Acute): Yes

Delayed (Chronic): No

EPCRA 311/312 Chemicals and RQs:

(No Product Ingredients Listed)

EPCRA 302 Extremely Hazardous :

(No Product Ingredients Listed)

EPCRA 313 Toxic Chemicals:

(No Product Ingredients Listed)

Proposition 65 - Carcinogens (>0.0%):

(No Product Ingredients Listed)

Proposition 65 - Developmental Toxins (>0.0%):

(No Product Ingredients Listed)

Proposition 65 - Female Repro Toxins (>0.0%):

(No Product Ingredients Listed)

Proposition 65 - Male Repro Toxins (>0.0%):

(No Product Ingredients Listed)

N.J. RTK Substances (>1%):

Glycerol

Penn RTK Substances (>1%):

Glycerol

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H300 Fatal if swallowed.

H311 Toxic in contact with skin.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H370 Causes damage to organs.

H411 Toxic to aquatic life with long lasting effects.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

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