

Material Safety Data Sheet

Section 1: Identification of the Substance or Mixture

Product Code: 10018, 10097

Product Name: Revolution cfDNA Binding Buffer

For *In Vitro* Diagnostic Use in conjunction with nRichDX Revolution cfDNA Max 20XL, Max 20, and Reagent 0.5 kits.

Details of the supplier of the material safety data sheet



Address: 15339 Barranca Parkway

Irvine, CA 92618 USA

Phone: +1.949.341.1980

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Support: info@nrichdx.com

Website: www.nrichdx.com

24 hour Emergency Response for Hazardous Materials [or Dangerous Goods] Incident, or Accident: Call CHEMTREC

+1.703.741.5970 / 1.800.424.9300

Section 2: Hazards Identification

GHS Classification

Signal Word: DANGER

Hazard pictograms:



Health Hazards:

Acute oral toxicity	Category 4
Skin Corrosion/irritation	Category 1C
Serious eye damage/eye irritation	Category 1

Physical Hazards: Not hazardous

Environmental Hazards:

Chronic aquatic toxicity	Category 3
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Hazard Statements:

H302 - Harmful if swallowed

H314 - Causes severe skin burns and eye damage

H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements

Prevention:

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P264 - Wash hands thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P273 - Avoid release to the environment

P280 - Wear protective gloves/protective clothing/eye protection/face protection

Response:

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor/physician

P330 - Rinse mouth

Storage: Not Applicable.

Disposal:

P501 - Dispose of contents/ container to an approved waste disposal plant.

Other hazards: Contains a known or suspected endocrine disruptor

HMIS

Health	3
Flammability	0
Reactivity	0

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Section 3: Composition/Information on Ingredients

Component	CAS No.	EINECS-No.	Concentration
Nonionic surfactants	-	Not Listed	15 – 24%
Guanidine thiocyanate	539-84-0	209-812-1	≥ 30 - <50%
Acrylamide	79-06-1	201-173-7	<0.01

We recommend handling all chemicals with caution.

Section 4: First Aid Measures

Description of First Aid Measures

Skin contact: Rinse with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before reuse. Immediate medical attention is required.

Eye contact: Rinse cautiously with water for several minutes, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

Ingestion: Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Immediate medical attention is required.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If conditions persist, call a physician

Notes to Physician: Treat Symptomatically.

Most important symptoms and effects, both acute and delayed:

H302 - Harmful if swallowed.

H314 - Causes severe skin burns and eye damage.

H412 - Harmful to aquatic life with long lasting effects.

Indication of any immediate medical attention and special treatment needed: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED, remove person to fresh air and keep comfortable for breathing.

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Section 5: Firefighting Measures

Extinguishing Media

Suitable extinguishing media: Water-spray, Carbon Dioxide (CO₂), Foam, Dry chemical

Special hazards arising from the substance or mixture: Not known.

Advice for fire-fighters: Wear self-contained breathing apparatus and protective suit.

Section 6: Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures: Ensure adequate ventilation. Always wear recommended Personal Protective Equipment. Do not ingest. Use only with adequate ventilation or wear appropriate respirator, if during normal use the material presents a respiratory hazard.

Environmental precautions: Prevent product from entering drains. Do not allow material to contaminate ground water system.

Methods and material for containment and cleaning up: Soak up with inert absorbent material and dispose of as hazardous waste. Do not flush with water.

Reference to other sections: See section 8.

Section 7: Handling and Storage

Precautions for safe handling: Use personal protective equipment as required. Do not get into eyes, on skin, or on clothing. Do not ingest. Use only with adequate ventilation or wear appropriate respirator, if during normal use the material presents a respiratory hazard.

Conditions for safe storage, including any incompatibilities: Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers.

Specific end use(s): For in vitro diagnostic use in conjunction with nRichDX Revolution cfDNA Max 20XL, Max 20, and Reagent 0.5 kits.

Section 8: Exposure Controls/Personal Protection

Control Parameters

Chemical Name	OSHA PEL	OSHA PEL (Ceiling)	EINECS-No
Nonionic surfactants	None	None	None
Guanidine thiocyanate	None	None	None
Acrylamide	0.3 mg/m ³	None	None

Engineering measures: Ensure adequate ventilation, especially in confined areas.

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Exposure Controls

Respiratory protection: In case of insufficient ventilation, wear respirators and components tested under appropriate government standards

Hand protection: Wear suitable gloves. Glove material: Compatible chemical-resistant gloves.

Eye protection: Tight sealing safety goggles.

Skin and Body Protection: Wear laboratory coat for body protection.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls: Prevent from entering drains. Do not allow material to contaminate ground water.

Section 9: Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

Appearance:	Liquid
Odor:	No information available.
Odor Threshold:	Mixture has not been tested.
pH:	4 - 6
Melting point/melting range:	Mixture has not been tested.
Boiling point/boiling range:	Mixture has not been tested.
Flash point:	Mixture has not been tested.
Autoignition temperature:	Mixture has not been tested.
Decomposition temperature:	Mixture has not been tested.
Evaporation rate:	No data.
Flammability (solid, gas):	Not applicable.
Upper explosion limit:	Mixture has not been tested.
Lower explosion limit:	Mixture has not been tested.
Vapor pressure:	Mixture has not been tested.
Relative density:	Mixture has not been tested.
Specific gravity:	No data.
Solubility:	Soluble in water.
Partition coefficient: n-octanol/water	No data.
Viscosity:	Mixture has not been tested.
Explosive properties:	Mixture has not been tested.
Oxidizing properties:	Mixture has not been tested.
Other information:	No data.

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Section 10: Stability and Reactivity

Reactivity: Not known

Chemical stability: Stable under normal conditions.

Possibility of hazardous reactions: Hazardous reaction has not been reported.

Conditions to avoid: Contact with acids or bleach liberates toxic gases. DO NOT ADD acids or bleach to any liquid wasters containing this product.

Incompatible materials: No dangerous reaction known under normal conditions of use.

Hazardous decomposition products: No known hazardous decomposition products.

Section 11: Toxicological Information

Information on Toxicological Effects

Chemical Name	LD50 (oral – rat/mouse)	LD50 (dermal – rat/mouse)	LC50 (inhalation – rat/mouse)
Nonionic surfactants	=1800 mg/kg (Rat)=4190 mg/kg (Rat)=1700 mg/kg Rat	No data available	No data available
Guanidine thiocyanate	503 mg/kg	No data available	No data available
Acrylamide	= 124 mg/kg (Rat)	No data available	No data available

Physical Routes of Exposure

Skin Corrosion/Irritation: Causes severe burns.

Serious eye damage/irritation: Causes serious eye damage.

Respiratory or skin sensitization: Conclusive but not sufficient for classification.

Specific Target Organ Toxicity – single exposure: Conclusive but not sufficient for classification.

Specific Target Organ Toxicity – repeated exposure: Conclusive but not sufficient for classification.

Carcinogenicity: Conclusive but not sufficient for classification.

Mutagenicity: Conclusive but not sufficient for classification.

Reproductive toxicity: Conclusive but not sufficient for classification.

Aspiration hazard: Conclusive but not sufficient for classification.

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Section 12: Ecological Information

Ecotoxicity

Chemical Name	Algae Toxicity	Daphnia and other Aquatic Invertebrates Toxicity	Fish Toxicity	Microtox Data	Log Pow
Nonionic surfactants	No data available	No data available	No data available	No data available	No data available
Guanidine thiocyanate	No data available	No data available	No data available	No data available	No data available
Acrylamide	No data available	Daphnia magna EC50=98mg/L (48h)	No data available	No data available	logPow -1.24

Persistence and degradability: No information available.

Bioaccumulative potential: No data available

Results of PBT and vPvB assessment: No data available

Other adverse effects: Contains a known or suspected endocrine disruptor.

Section 13: Disposal Considerations

Waste Treatment Methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in accordance with approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.

Section 14: Transport Information

IAT/ADR/DOT-US/IMDG: Classified as dangerous in the meaning of transport regulations.

UN number: 1760

UN proper shipping name: Corrosive liquid, n.o.s. (Guanidine thiocyanate)

Transport hazard class(es): 8

Packing group: III

Environmental hazards: Yes.

Special precautions for user: Not applicable.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: Not applicable.

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Section 15: Regulatory Information

Component	US TSCA
Guanidine thiocyanate (30 – 50)	Listed
Acrylamide 79-06-1 (<0.01)	Listed
Nonionic surfactant (15-24)	Listed

US Federal Regulations

SARA 313: This product contains the following toxic chemical(s) subject to the notification requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986. This law requires certain manufacturers to report on annual emissions of specified chemicals and chemical categories. Please note that if you repackage, or otherwise redistribute, this product to industrial customers, a notice similar to this one should be sent to those customers.

<u>Chemical Name</u>	<u>CAS-No</u>	<u>Weight %</u>	<u>SARA 313 – Threshold Values</u>
Acrylamide	79-06-1	< 0.01	0.1

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following HAPs:

<u>Chemical Name</u>	<u>CAS-No</u>	<u>Weight %</u>	<u>HAPS data</u>
Acrylamide	79-06-1	< 0.01	Present

US State Regulations

California Proposition 65: This product contains the following Proposition 65 chemicals:

<u>Chemical Name</u>	<u>CAS-No</u>	<u>Weight %</u>	<u>Category</u>
Acrylamide	79-06-1	< 0.01	Carcinogen Developmental

WHMIS Hazard Class:

E-Corrosive material



This product has been classified in accordance with the hazard criteria of the controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

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Section 16: Other Information

Reason for revision: Original version

Revision number: A

Revision date: 17-December-2019

Use: For *In Vitro* Diagnostic Use

References:

- ECHA: <http://echa.europa.eu/>
- TOXNET: <http://toxnet.nlm.nih.gov/>
- eChemPortal: <http://www.echemportal.org/>
- LOLI database: <https://www.chemadvisor.com/loli-database>

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End of Safety Data Sheet