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**Rev. 02**
**SDS PN:** 101-423-400

<b>1. PRODUCT AND COMPANY IDENTIFICATION</b>				
<b>1.1 Product Identifier</b>				
Product Name	Sequel® Binding Kit 2.1			
Product Number(s)	101-365-900			
Other means of identification	This product is a kit box containing 9 reagent tubes.			
	<b>Subcomponent Name</b>	<b>Part #</b>	<b>#</b>	<b>Cap Color</b>
	Sequel® DNA Polymerase 2.1	101-369-100	1	Purple
	Sequel® Binding Buffer v1	100-737-700	1	Yellow
	dNTP v3	100-736-700	1	Green
	DTT	001-388-706	2	Red
	Sequel® Additive v1	100-736-200	1	White
	Sequel® Complex Dilution Buffer v1	101-407-100	3	Blue
<b>1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against</b>				
Identified Use	For use with the Pacific Biosciences PacBio Sequel® system			
Restrictions on Use	FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.			
<b>1.3 Details of the Supplier of the Substance or Mixture</b>				
Supplier Name and Address	Pacific Biosciences 1305 O'Brien Drive Menlo Park, CA 94025 U.S.A www.pacificbiosciences.com			
Supplier phone	+1 650-521-8000			
<b>1.4 Emergency Telephone Number</b>				
Within USA & Canada	Call CHEMTREC 1-800-424-9300 (reference CCN# 656805)			
Outside USA and Canada	techsupport@pacb.com			
<b>2. HAZARD(S) IDENTIFICATION</b>				
<b>For UNITED STATES, CANADA, UK, GERMANY, BELGIUM, SWITZERLAND, POLAND, THE NETHERLANDS, FINLAND, NORWAY, QATAR, INDIA, MALAYSIA, SINGAPORE, TAIWAN, JAPAN, AUSTRALIA</b>				
<b>2.1 Classification of the substance or mixture</b>				
The kit as a whole is not a hazardous substance or mixture. <sup>1</sup> Subcomponents are classified as follows.				
	<b>Subcomponent Name</b>	<b>Part #</b>	<b>Classification</b>	
	Sequel® DNA Polymerase 2.1	101-369-100	Not a hazardous substance or mixture.	
	Sequel® Binding Buffer v1	100-737-700	Not a hazardous substance or mixture.	
	dNTP v3	100-736-700	Not a hazardous substance or mixture.	
	DTT	001-388-706	Not a hazardous substance or mixture.	
	Sequel® Additive v1	100-736-200	Not a hazardous substance or mixture.	
	Sequel® Complex Dilution Buffer v1	101-407-100	Not a hazardous substance or mixture.	
<b>2.2 GHS Label Elements and precautionary statements</b>				
Not a hazardous substance or mixture				
<b>2.3 Hazards not otherwise classified (HNOC) or not covered by GHS</b>				
None				

<sup>1</sup> Classification in accordance with 29CFR1910 (OSHA HCS) and UN Globally Harmonized system of classification and labelling of chemicals

For CHINA, SOUTH KOREA				
<b>2.1 Classification of the substance or mixture</b>				
The kit as a whole is not a hazardous substance or mixture. <sup>2</sup> Subcomponents are classified as follows.				
	<b>Subcomponent Name</b>	<b>Part #</b>	<b>Classification</b>	
	Sequel <sup>®</sup> DNA Polymerase 2.1	101-369-100	Not a hazardous substance or mixture.	
	Sequel <sup>®</sup> Binding Buffer v1	100-737-700	Not a hazardous substance or mixture.	
	dNTP v3	100-736-700	Not a hazardous substance or mixture.	
	DTT	001-388-706	Skin Irritation (Category 3)	
	Sequel <sup>®</sup> Additive v1	100-736-200	Not a hazardous substance or mixture.	
	Sequel <sup>®</sup> Complex Dilution Buffer v1	101-407-100	Not a hazardous substance or mixture.	
<b>2.2 GHS Label Elements and precautionary statements</b>				
Information is provided for the hazardous components listed in section 2.1				
	<b>Product</b>	<b>Pictogram</b>	<b>Signal Word</b>	<b>Hazard statement(s)</b>
	DTT Tube		Warning	H316: Causes mild skin irritation
				P332+P313: If skin irritation occurs: Get medical advice/attention
<b>2.3 Hazards not otherwise classified (HNOC) or not covered by GHS</b>				
None				
<b>3. COMPOSITION / INFORMATION ON INGREDIENTS</b>				
<b>3.1 Substances</b>				
	Common Name and Synonyms		Sequel <sup>®</sup> Binding Kit 2.1	
	CAS Number		None	
	Other unique identifiers		None	
<b>3.2 Hazardous components</b>				
The DTT Tube contains the following hazardous ingredients. None of the other reagent tubes contain any hazardous ingredients.				
	<b>Subcomponent</b>	<b>Hazardous Ingredient(s)</b>	<b>CAS</b>	<b>GHS Classification</b>
	DTT Tube	DL-Dithiothreitol	3483-12-3	Acute Toxicity, Oral (Category 4); Skin Irritation (Category 2); Eye Irritation (Category 2A); Specific Target Organ Toxicity – single exposure (Category 3), Respiratory system; Chronic Aquatic Toxicity (Category 3)
				6.17%
<b>4. FIRST AID MEASURES</b>				
<b>4.1 Description of First Aid Measures</b>				
	General advice	Consult a physician. Show this safety data sheet to the physician. Wash hands thoroughly after handling.		
	If inhaled	If breathed in, move person into fresh air. If not breathing, give artificial respiration.		
	In case of skin contact	Wash off with plenty of water. If skin irritation occurs: Get medical advice/attention.		
	In case of eye contact	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.		
	If swallowed	Never give anything by mouth to an unconscious person. Rinse mouth with water.		
<b>4.2 Most important symptoms/effects, both acute and delayed</b>				
No data available. Refer to section 2.2 and section 11 for additional information.				
<b>4.2 Indication of any immediate medical attention and special treatment needed</b>				
No data available				
<b>5. FIRE-FIGHTING MEASURES</b>				
<b>5.1 Suitable Extinguishing Media</b>				
Dry chemical, carbon dioxide, foam or water.				

<sup>2</sup> Classification in accordance with 29CFR1910 (OSHA HCS) and UN Globally Harmonized system of classification and labelling of chemicals

<b>5.2</b>	<b>Special hazards arising from the substance or mixture</b>	
	Combustion will produce oxides of carbon, nitrogen and sulfur.	
<b>5.3</b>	<b>Advice for firefighters (special protective equipment or precautions)</b>	
	Wear self-contained breathing apparatus for fire-fighting as necessary.	
<b>6.</b>	<b>ACCIDENTAL RELEASE MEASURES</b>	
<b>6.1</b>	<b>Personal precautions, protective equipment and emergency procedures</b>	
	Avoid breathing vapors, mists or gas. For personal protection see section 8.0.	
<b>6.2</b>	<b>Environmental precautions</b>	
	Avoid release to the environment. Report spills and releases as required to appropriate authorities.	
<b>6.3</b>	<b>Methods and materials for cleanup</b>	
	Wear personal protective equipment, wipe up with paper towel (or similar), and contain in closed containers.	
<b>6.4</b>	<b>Reference to other sections</b>	
	For disposal see section 13.	
<b>7.</b>	<b>HANDLING AND STORAGE</b>	
<b>7.1</b>	<b>Precautions for safe handling</b>	
	Utilize standard good lab practices. Use in a well-ventilated area and wear standard PPE.	
<b>7.2</b>	<b>Conditions for safe storage, including any incompatibilities</b>	
	Keep containers tightly closed at the recommended storage temperature.	
<b>8.</b>	<b>EXPOSURE CONTROLS / PERSONAL PROTECTION</b>	
<b>8.1</b>	<b>Control Parameters</b>	
	Contains no substances with occupational exposure limit values.	
<b>8.2</b>	<b>Exposure Controls</b>	
	<b>Appropriate engineering controls:</b>	
	General industrial hygiene practice. No special ventilation required for normal use	
	<b>Personal Protective Equipment (PPE):</b>	
	Eye/Face Protection	Safety glasses
	Skin and Body Protection	Latex or nitrile gloves; lab coat /apron
	Respiratory Protection	None required
<b>9.</b>	<b>PHYSICAL AND CHEMICAL PROPERTIES</b>	
<b>9.1</b>	<b>Information on basic physical and chemical properties</b>	
	Appearance	Each reagent tube contains clear colorless liquid.
	Odor	The DTT Tube may have a slight sulfur odor.
	Odor Threshold	No data available
	pH	7.0-8.5
	Melting point/freezing point	No data available
	Initial boiling point and boiling range	No data available
	Flash point	No data available
	Evaporation rate	No data available
	Flammability (solid, gas)	No data available
	Upper/lower flammability or explosive limit	No data available
	Vapor pressure	No data available
	Relative density	No data available
	Solubility(ies)	No data available
	Partition coefficient: n-octonal/water	No data available
	Auto-ignition temperature	No data available
	Decomposition temperature	No data available
	Viscosity	No data available

<b>10. STABILITY AND REACTIVITY</b>	
Reactivity	This product is not reactive under normal conditions of storage and use.
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	No data available
Conditions to Avoid	No data available
Incompatible Materials	Avoid contact with strong acids, bases and oxidizers.
Hazardous Decomposition Products	No data available. In the event of fire see section 5.
<b>11. TOXICOLOGICAL INFORMATION</b>	
<b>11.1 Information on likely routes of exposure</b>	
The most likely route of exposure is via skin or eye contact. Exposure via inhalation or ingestion is less likely.	
<b>11.2 Symptoms related to the physical, chemical and toxicological characteristics</b>	
No data available	
<b>11.3 Delayed and immediate effects and also chronic effects from short and long-term exposure</b>	
Eyes	No data available
Skin	No data available
Inhalation	No data available
Ingestion	No data available
Chronic Effects	No data available
Aggravated Medical Conditions	No data available
Interactions with other Chemicals	No data available
<b>11.4 Numerical measures of toxicity</b>	
Acute toxicity	Dithiothreitol – LD <sub>50</sub> Oral – Rat – 400 mg/kg
Skin corrosion/irritation	No data available
Serious eye damage/irritation	No data available
Respiratory or skin sensitization	No data available
Germ cell mutagenicity	No data available
Reproductive toxicity	No data available
Specific target organ toxicity	No data available
<b>11.5 Carcinogenicity</b>	
No ingredients in this product are listed as carcinogens by ACGIH, IARC, NTP or OSHA.	
<b>12. ECOLOGICAL INFORMATION</b>	
Ecotoxicity	Dithiothreitol – LC <sub>50</sub> – Daphnia Magna (water flea) – 27 mg/L – 48h
Persistence and Degradability	No data available
Bioaccumulative Potential	No data available
Mobility in soil	No data available
Results of PBT and vPvB Assessment	None Required
Other adverse effects	No data available
<b>13. DISPOSAL CONSIDERATIONS</b>	
Dispose all waste in accordance with local, regional and national regulations.	
Product	See above
Contaminated Packaging	See above
US EPA Waste Number	No EPA ID number. Not regulated as a US federal hazardous waste. Not regulated under Title 22 as a California hazardous waste.
<b>14. TRANSPORT INFORMATION</b>	
Transportation of this product is not regulated under ICAO, IMDG or US DOT.	

<b>15. REGULATORY INFORMATION</b>	
<b>15.1 USA Federal Regulations</b>	
SARA 302	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302
SARA 313	This material does not contain any chemical components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313
SARA 311/312	No SARA hazards
TSCA	Research use only
<b>15.2 USA State Regulations</b>	
CA Prop 65	This kit does not contain any chemicals known to the State of California to cause cancer or adverse reproductive health effects
<b>16. OTHER INFORMATION</b>	
Prepared By	Pacific Biosciences Environment, Health and Safety 1305 O'Brien Drive Menlo Park, CA 94025 U.S.A. safety@pacb.com
Further Information	<p>The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. It is not a warranty or quality specification. This information relates only to the specific material designated and may not be valid for use in combination with any other material or in any other process.</p> <p>For Research Use Only. Not for use in diagnostics procedures. © Copyright 2017, Pacific Biosciences of California, Inc. All right reserved. Information in this document is subject to change without notice. Pacific Biosciences assumes no responsibility for any errors or omissions in this document. Certain notices, terms, conditions and/or use restrictions may pertain to your use of Pacific Biosciences products and/or third party products. Please refer to the applicable Pacific Bioscience Terms and Conditions of Sale and to the applicable license terms at <a href="http://www.pacb.com/legal-and-trademarks/product-license-and-use-restrictions/">http://www.pacb.com/legal-and-trademarks/product-license-and-use-restrictions/</a>.</p> <p>Pacific Biosciences, the Pacific Biosciences logo, PacBio, SMRT, SMRTbell, Iso-Seq, and Sequel are trademarks of Pacific Biosciences. BluePippin and SageELF are trademarks of Sage Science. NGS-go and NGSengine are trademarks of GenDx. FEMTO Pulse and Fragment Analyzer are trademarks of Advanced Analytical Technologies. All other trademarks are the sole property of their respective owners.</p>