

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

<b>Trade name or designation of the mixture</b>	DG-CRB Crosslink Reversal Buffer
<b>Registration number</b>	-
<b>Synonyms</b>	None.
<b>Issue date</b>	18-February-2018
<b>Version number</b>	02
<b>Revision date</b>	27-March-2018
<b>Supersedes date</b>	18-February-2018

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

<b>Identified uses</b>	Buffer.
<b>Uses advised against</b>	Use in accordance with manufacturer's recommendations.

### 1.3. Details of the supplier of the safety data sheet

<b>Company name</b>	Dovetail Genomics, LLC
<b>Address</b>	2161 Delaware Ave Santa Cruz, CA 95060 United States of America
<b>Telephone</b>	(831) 713-4465
<b>Website</b>	dovetailgenomics.com
<b>Emergency phone number</b>	0 800 680 0425 (access code: 334943)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

#### Classification according to Regulation (EC) No 1272/2008 as amended

This mixture does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

**Hazard summary** Occupational exposure to the substance or mixture may cause adverse health effects.

### 2.2. Label elements

#### Label according to Regulation (EC) No. 1272/2008 as amended

<b>Hazard pictograms</b>	None.
<b>Signal word</b>	None.
<b>Hazard statements</b>	The product does not meet the criteria for classification.

#### Precautionary statements

<b>Prevention</b>	Observe good industrial hygiene practices.
<b>Response</b>	Wash hands after handling.
<b>Storage</b>	Store away from incompatible materials.
<b>Disposal</b>	Dispose of waste and residues in accordance with local authority requirements.

**Supplemental label information** None.

**2.3. Other hazards** Not a PBT or vPvB substance or mixture.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Sodium Dodecyl Sulfate	1 - 2	151-21-3 205-788-1	01-2119489461-32-XXXX	-	
<b>Classification:</b>	Flam. Sol. 2;H228, Acute Tox. 4;H302, Skin Irrit. 2;H315, Eye Dam. 1;H318, Acute Tox. 4;H332, STOT SE 3;H335, Aquatic Chronic 3;H412				

**Composition comments** All concentrations are in percent by weight unless otherwise indicated.

## SECTION 4: First aid measures

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 4.1. Description of first aid measures

**Inhalation** Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact** Wash off with soap and water. Get medical attention if irritation develops and persists.

**Eye contact** Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion** Rinse mouth. Get medical attention if symptoms occur.

**4.2. Most important symptoms and effects, both acute and delayed** Exposure may cause temporary irritation, redness, or discomfort.

**4.3. Indication of any immediate medical attention and special treatment needed** Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

## SECTION 5: Firefighting measures

**General fire hazards** No unusual fire or explosion hazards noted.

### 5.1. Extinguishing media

**Suitable extinguishing media** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

**5.2. Special hazards arising from the substance or mixture** During fire, gases hazardous to health may be formed.

### 5.3. Advice for firefighters

**Special protective equipment for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Special fire fighting procedures** Move containers from fire area if you can do so without risk.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

**For emergency responders** Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

**6.2. Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

**6.3. Methods and material for containment and cleaning up** Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. The product is soluble in water.

**6.4. Reference to other sections** For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling** Avoid contact with eyes. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

**7.2. Conditions for safe storage, including any incompatibilities** Store in original tightly closed container. Store away from incompatible materials (see section 10 of the SDS). Storage temperature: between 2 and 8°C.

**7.3. Specific end use(s)** Buffer.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

**Occupational exposure limits** No exposure limits noted for ingredient(s).

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Recommended monitoring procedures** Follow standard monitoring procedures.

**Derived no effect levels (DNELs)**

**General Population**

Components	Value	Assessment factor	Notes
Sodium Dodecyl Sulfate (CAS 151-21-3)			
Long-term, Systemic, Dermal	2440 mg/kg bw/day		
Long-term, Systemic, Inhalation	85 mg/m <sup>3</sup>		
Long-term, Systemic, Oral	24 mg/kg bw/day		

**Workers**

Components	Value	Assessment factor	Notes
Sodium Dodecyl Sulfate (CAS 151-21-3)			
Long-term, Systemic, Dermal	4060 mg/kg bw/day		
Long-term, Systemic, Inhalation	285 mg/m <sup>3</sup>		

**Predicted no effect concentrations (PNECs)**

Components	Value	Assessment factor	Notes
Sodium Dodecyl Sulfate (CAS 151-21-3)			
Freshwater	0.176 mg/l		
Marine water	0.018 mg/l		
Sediment (freshwater)	6.97 mg/kg		
Sediment (marine water)	0.697 mg/kg		
Soil	1.29 mg/kg		
STP	1.35 mg/l		

**8.2. Exposure controls**

**Appropriate engineering controls** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

**Individual protection measures, such as personal protective equipment**

**General information** Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye/face protection** Wear safety glasses with side shields (or goggles).

**Skin protection**

**- Hand protection** Wear appropriate chemical resistant gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

**- Other** Wear suitable protective clothing.

**Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**Hygiene measures** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**Environmental exposure controls** Environmental manager must be informed of all major releases.

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

**Appearance**

**Physical state** Liquid.

**Form** Clear liquid.

**Colour** Clear.

**Odour** Not available.

**Odour threshold** Not available.

**pH** Not available.

**Melting point/freezing point** Not available.

**Initial boiling point and boiling range** Not available.

**Flash point** Not combustible.

<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Vapour pressure</b>	Not available.
<b>Vapour density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	Soluble.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Explosive properties</b>	Not explosive.
<b>Oxidising properties</b>	Not oxidising.
<b>9.2. Other information</b>	No relevant additional information available.

## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>10.2. Chemical stability</b>	Material is stable under normal conditions.
<b>10.3. Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>10.4. Conditions to avoid</b>	Contact with incompatible materials.
<b>10.5. Incompatible materials</b>	Strong oxidising agents.
<b>10.6. Hazardous decomposition products</b>	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Nitrogen oxides. Sulphur oxides. Chlorine compounds.

## SECTION 11: Toxicological information

**General information** Occupational exposure to the substance or mixture may cause adverse effects.

### Information on likely routes of exposure

<b>Inhalation</b>	No adverse effects due to inhalation are expected.
<b>Skin contact</b>	Causes mild skin irritation.
<b>Eye contact</b>	Direct contact with eyes may cause temporary irritation.
<b>Ingestion</b>	May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

**Symptoms** Exposure may cause temporary irritation, redness, or discomfort.

### 11.1. Information on toxicological effects

**Acute toxicity** Not expected to be acutely toxic.

<b>Components</b>	<b>Species</b>	<b>Test Results</b>
Sodium Dodecyl Sulfate (CAS 151-21-3)		
<b><u>Acute</u></b>		
<b>Oral</b>		
LD50	Rat	1200 mg/kg

**Skin corrosion/irritation** Causes mild skin irritation.

**Serious eye damage/eye irritation** Direct contact with eyes may cause temporary irritation.

**Respiratory sensitisation** Due to partial or complete lack of data the classification is not possible.

**Skin sensitisation** Based on available data, the classification criteria are not met.

**Germ cell mutagenicity** Based on available data, the classification criteria are not met.

**Carcinogenicity** Based on available data, the classification criteria are not met.

**Reproductive toxicity** Based on available data, the classification criteria are not met.

**Specific target organ toxicity - single exposure** Based on available data, the classification criteria are not met.

<b>Specific target organ toxicity - repeated exposure</b>	Based on available data, the classification criteria are not met.
<b>Aspiration hazard</b>	Due to partial or complete lack of data the classification is not possible.
<b>Mixture versus substance information</b>	No information available.
<b>Other information</b>	None known.

## SECTION 12: Ecological information

**12.1. Toxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Sodium Dodecyl Sulfate (CAS 151-21-3)		
<b>Aquatic</b>		
<i>Acute</i>		
Algae	EC50	Desmodesmus subspicatus > 120 mg/l, 72 hours
Crustacea	LC50	Brine shrimp (Artemia salina) 3.15 mg/l, 48 Hours
Fish	LC50	Cyprinodon variegatus 4.1 mg/l, 96 Hours
<i>Chronic</i>		
Crustacea	NOEC	Ceriodaphnia dubia 0.88 mg/l, 7 days

**12.2. Persistence and degradability** No data is available on the degradability of this product.

### 12.3. Bioaccumulative potential

#### Partition coefficient n-octanol/water (log Kow)

Sodium Dodecyl Sulfate (CAS 151-21-3) 1.6

**Bioconcentration factor (BCF)** Not available.

**12.4. Mobility in soil** This product is water soluble and may disperse in soil.

**12.5. Results of PBT and vPvB assessment** Not a PBT or vPvB substance or mixture.

**12.6. Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

<b>Residual waste</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
<b>EU waste code</b>	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Disposal methods/information</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Special precautions</b>	Dispose in accordance with all applicable regulations.

## SECTION 14: Transport information

### ADR

14.1. - 14.6.: Not regulated as dangerous goods.

### RID

14.1. - 14.6.: Not regulated as dangerous goods.

### ADN

14.1. - 14.6.: Not regulated as dangerous goods.

### IATA

14.1. - 14.6.: Not regulated as dangerous goods.

### IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not established.

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

#### Authorisations

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended**

Not listed.

#### Restrictions on use

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**

Not listed.

#### Other EU regulations

**Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**

Not listed.

#### Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

#### National regulations

Follow national regulation for work with chemical agents.

### 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

### List of abbreviations

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.  
ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road.  
CAS: Chemical Abstract Service.  
CEN: European Committee for Standardization (Comité Européen de Normalisation).  
DNEL: Derived No-Effect Level.  
EC50: Effective Concentration, 50%.  
ECHA: European Chemical Agency.  
IATA: International Air Transport Association.  
IBC: Intermediate Bulk Container.  
IMDG: International Maritime Dangerous Goods.  
LC50: Lethal Concentration, 50%.  
LD50: Lethal Dose, 50%.  
MARPOL: International Convention for the Prevention of Pollution from Ships.  
NOEC: No observed effect concentration.

OEL: Occupational Exposure Limit.  
PBT: Persistent, bioaccumulative, toxic.  
PNEC: Predicted No-Effect Concentration.  
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.  
STEL: Short-Term Exposure Limit.  
TWA : Time Weighed Average.  
vPvB: very Persistent, very Bioaccumulative.  
ECHA registered substances database

## References

### Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

### Full text of any H-statements not written out in full under Sections 2 to 15

H228 Flammable solid.  
H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H332 Harmful if inhaled.  
H335 May cause respiratory irritation.  
H412 Harmful to aquatic life with long lasting effects.

## Training information

Follow training instructions when handling this material.

## Disclaimer

Dovetail Genomics, LLC cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.