

Part of Thermo Fisher Scientific

: Thermo Fisher Scientific

Pierce Biotechnology

Refer to the instruction booklet for

P.O. Box 117

Material Safety Data Sheet

Product and company identification

: Prestained Protein MW Marker **Product name**

Supplier : Thermo Fisher Scientific Manufacturer

Pierce Biotechnology P.O. Box 117 Rockford, IL 61105 United States 815.968.0747 or 800 874 3723

Rockford, IL 61105 United States 815.968.0747 800 874 3723

: 0026612 0026613 **Product No.**

MSDS# : 8529 Validation date : 10/11/2010. Print date : 10/11/2010. : MSDS Specialist Responsible name

In case of emergency : CHEMTREC: Use of

800.424.9300 Substance/Preparation

OUTSIDE US: proper and intended use. 202.483.7616 Otherwise, contact supplier for specific applications.

Hazards identification

Physical state Liquid

Odor : Weak, Characteristic.

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard

(29 CFR 1910.1200).

: WARNING! **Emergency overview**

> HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT CAN CAUSE

TARGET ORGAN DAMAGE.

Toxic by inhalation and in contact with skin. Harmful if swallowed. Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact. Avoid exposure obtain special instructions before use. Do not breathe vapor or mist. Do not ingest. Do not get in eyes or on skin or clothing. Contains material that can cause target organ damage. Use only with adequate ventilation. Keep container tightly closed and sealed

until ready for use. Wash thoroughly after handling.

: Dermal contact. Eye contact. Inhalation. Ingestion. Routes of entry

Potential acute health effects

Inhalation : Toxic by inhalation. Irritating to respiratory system.

: Harmful if swallowed. Ingestion

: Toxic in contact with skin. Irritating to skin. May cause sensitization by skin contact. Skin

: Irritating to eyes.

Potential chronic health effects

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Hazards identification

; Contains material that can cause target organ damage. Chronic effects

Carcinogenicity : No known significant effects or critical hazards. Mutagenicity : No known significant effects or critical hazards. Teratogenicity : No known significant effects or critical hazards. **Developmental effects** : No known significant effects or critical hazards. : No known significant effects or critical hazards. Fertility effects

Target organs : Contains material which causes damage to the following organs: kidneys, lungs, upper

respiratory tract, skin, eyes.

Contains material which may cause damage to the following organs: liver,

gastrointestinal tract.

Over-exposure signs/symptoms

: Adverse symptoms may include the following: Inhalation

respiratory tract irritation

coughing

: No specific data. Ingestion

Skin : Adverse symptoms may include the following:

irritation redness

Eyes : Adverse symptoms may include the following:

pain or irritation watering redness

Medical conditions : Pre-existing respiratory, skin and digestive disorders and disorders involving any other

target organs mentioned in this MSDS as being at risk may be aggravated by overaggravated by overexposure to this product.

exposure

The preparation is not classified as dangerous according to Directive 1999/45/EC and its amendments.

: Not classified.

See toxicological information (section 11)

Composition/information on ingredients

United States

Name **CAS** number Glycerol 56-81-5 25 - 45 Sodium Dodecyl Sulfate 151-21-3 1 - 3

Europe

Substance/preparation : Preparation

Ingredient name CAS % EC number Classification number Glycerol 56-81-5 25 - 45 200-289-5 Not classified. Sodium Dodecyl Sulfate 151-21-3 1 - 3 205-788-1 R10 [1] Xn; R21/22

R36/37/38

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Composition/information on ingredients

There are no ingredients or additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in section 8.

First aid measures

Inhalation

Get medical attention immediately. Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or selfcontained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-tomouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or

Ingestion

; Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband

Skin contact

: Get medical attention immediately. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing or wear gloves. Continue to rinse for at least 10 minutes. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Eye contact

: Get medical attention immediately. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses

Protection of first-aiders

: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing or wear gloves.

See section 11 for more detailed information on health effects and symptoms.

Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable

: Use an extinguishing agent suitable for the surrounding fire.

Not suitable

Special exposure hazards

: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable

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Fire-fighting measures

Hazardous combustion products

: Decomposition products may include the following materials: carbon oxides

sulfur oxides metal oxide/oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions

: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions

: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental

pollution (sewers, waterways, soil or air).

Large spill

: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal

Small spill

: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Handling and storage

Handling

: Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse

Storage

: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

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8. Exposure controls/personal protection

United States

glycerin

Exposure limits

ACGIH (United States).

TWA: 10 mg/m³

ACGIH TLV (United States).

TWA: 10 mg/m³ 8 hour(s). Form: Total particulates

TWA: 10 mg/m3 8 hour(s). Form: Mist OSHA PEL (United States, 11/2006).

TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction TWA: 15 mg/m³ 8 hour(s). Form: Total dust

OSHA PEL 1989 (United States, 3/1989).

TWA: 5 mg/m3 8 hour(s). Form: Respirable fraction

TWA: 10 mg/m³ 8 hour(s). Form: Total dust

ACGIH TLV (United States).

TWA: 10 mg/m³ 8 hour(s). Form: Total particulates

OSHA PEL (United States).

TWA: 15 mg/m³ 8 hour(s). Form: Total dust OSHA PEL (United States). Notes: Respirable

TWA: 15 mg/m³ 8 hour(s).

Europe

ACGIH (United States). glycerin

TWA: 10 mg/m³

ACGIH TLV (United States).

TWA: 10 mg/m³ 8 hour(s). Form: Total particulates

TWA: 10 mg/m3 8 hour(s). Form: Mist

TWA: 10 mg/m³ 8 hour(s). Form: Total particulates

Consult local authorities for acceptable exposure limits.

procedures

Recommended monitoring : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any

recommended or statutory limits.

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers

are close to the workstation location.

Personal protection

Respiratory

Hands

: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe

working limits of the selected respirator.

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is

Eyes

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists.

gases or dusts.

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Exposure controls/personal protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases. fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Physical and chemical properties

Physical state : Liquid. : Blue. Color

: Weak. Characteristic. Odor

Dispersibility properties : Dispersible in the following materials: cold water and hot water. : Easily soluble in the following materials: cold water and hot water. Solubility

Result

10. Stability and reactivity

Chemical stability

: The product is stable. Under normal conditions of storage and use, hazardous

Species

polymerization will not occur.

Conditions to avoid Incompatible materials

Hazardous decomposition

: No specific data. : No specific data.

products

: Under normal conditions of storage and use, hazardous decomposition products should

not be produced.

Possibility of hazardous reactions

: Will not occur.

11 . Toxicological information

United States

10/11/2010.

Acute toxicity Product/ingredient name

glycerin	LD50 Dermal	Rat	>21900 mg/kg	-
	LD50 Intraperitoneal	Rat	4420 mg/kg	-
	LD50 Intravenous	Rat	5566 mg/kg	_
	LD50 Oral	Rat	12600 mg/kg	-
	LD50 Oral	Rat	12600 mg/kg	-
	LD50	Rat	100 mg/kg	-
	Subcutaneous			
	LDLo Intramuscular	Rat	10 mL/kg	-
	LDLo Intramuscular	Rat	10 mg/kg	-
	TDLo Intramuscular	Rat	4 mL/kg	-

TDLo Intramuscular TDLo

Rat >5000 mg/kg 4000 mg/kg Rat

Dose

Exposure

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Intramuscular

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I1 . Toxicologic	al iı	nforma	ation								
			TDLo		Rat		8 mL/kg		-		
				uscular nhalation	Rat		>570 mg	/m ³	1 ho	ure	
			Vapor	malation	rtat		- 57 0 mg	/111	1110	uis	
sodium dodecyl sulphate			LD50 Dermal		Rabbit		580 mg/kg		-		
			LD50	ritanaal	Rat		210 mg/l	κg	-		
				ritoneal ntravenous	Rat		118 mg/l	κα	_		
			LD50 (Rat		1288 mg		-		
				nhalation and mists	Rat		>3900 m	g/m³	1 ho	urs	
Conclusion/Summary	:	Not avail	able.								
Chronic toxicity											
Product/ingredient nam	е			Result				Dose 16800 mg/kg		Exposure 28 days Continuous	
glycerin			Sub-chronic TD50 Oral Sub-chronic		Rat 16		16800 m				
					Rat		96 g/kg			30 davs	
			TD50 (Oral			3 3		Inter	mittent	
Conclusion/Summary	:	Not avail	able.								
<u>Carcinogenicity</u>											
Product/ingredient nam	е			Result				Dose		osure	
glycerin			Equivo TDLo	cal - Oral -	Mouse		87.5 g/kg	1		eeks mittent	
Conclusion/Summary		Not avail							iiitoi	iiiitoiit	
Classification	-										
Product/ingredient nam	е		ACGIH	IARC	EF	PA	NIOSH	NT	Р	OSHA	
glycerin			-	-	-		-	-		None.	
sodium dodecyl sulphate			A2	-	-		None.	-		None.	
Mutagenicity			- .					_			
Product/ingredient nam	е		Test		Experiment		nt	Result			
glycerin			DNA Inhibition Cytogenetic Analy			Mammalian-Human sis Mammalian-Animal			ositive ositive		
Conclusion/Summary	:	Not avail	able.								
<u>Teratogenicity</u>											
Conclusion/Summary	:	Not avail	able.								
Reproductive toxicity					_				_	_	
Product/ingredient nam	е		faternal oxicity	Fertility	toxin	lopment	Specie		Dose	Exposure	
glycerin		-		-	-		Rat - N	/lale	Unreported: 862 mg/kg	1 days	
		-		Positive	-		Rat - N	//ale	Oral: 100 mg/kg	1 days	
		-		-	-		Mamn specie unspe	s	Unreported: 119 mg/kg	1 days	
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Biosciences Divi	nion	3747 N. Meri	dian Rd	Rockford, IL	/6	15) 968-0747		iermo.com	Injorno	• • •	



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11 Toxicological information

- Nate
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Conclusion/Summary : Not available.

sodium dodecyl sulphate

Europe

 Chronic effects
 : No known significant effects or critical hazards.

 Carcinogenicity
 : No known significant effects or critical hazards.

 Mutagenicity
 : No known significant effects or critical hazards.

 Teratogenicity
 : No known significant effects or critical hazards.

 Developmental effects
 : No known significant effects or critical hazards.

 Fertility effects
 : No known significant effects or critical hazards.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

United States

Aquatic ecotoxicity

Conclusion/Summary : Not available.

13 . Disposal considerations

Waste disposal

: The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as

hazardous waste, as defined by EU Directive 91/689/EEC.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*
DOT Classification	Not regulated.	-	-	-
IATA-DGR Class	Not available.	Not available.	Not available.	-

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ciences Division 3747 N. Meridian Rd. Rockford, IL (815) 968-0747 De PO Box 117 61105 (815) 968-7316 Fax



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14. Transport information

PG* : Packing group

15. Regulatory information

United States

HCS Classification : Toxic material

Irritating material Sensitizing material Target organ effects

U.S. Federal regulations

: TSCA 8(a) IUR: glycerin

United States inventory (TSCA 8b): At least one component is not listed.

SARA 302/304/311/312 extremely hazardous substances: No products were found. SARA 302/304 emergency planning and notification: No products were found. SARA 302/304/311/312 hazardous chemicals: sodium dodecyl sulphate; glycerin SARA 311/312 MSDS distribution - chemical inventory - hazard identification: sodium dodecyl sulphate: Immediate (acute) health hazard, Delayed (chronic) health hazard; glycerin: Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: No products were found. Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 accidental release prevention: No products were found. Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

Canada

WHMIS (Canada) : Class D-2B: Material causing other toxic effects (Toxic).

: CEPA Toxic substances: None of the components are listed. Canadian lists

> Canadian ARET: None of the components are listed. Canadian NPRI: None of the components are listed.

Alberta Designated Substances: None of the components are listed. Ontario Designated Substances: None of the components are listed. Quebec Designated Substances: None of the components are listed.

Canada inventory

: Canada inventory: Not determined.

EU regulations

: This product is not classified according to EU legislation. Risk phrases

International regulations

International lists

: Australia inventory (AICS): Not determined. China inventory (IECSC): Not determined. Korea inventory (KECI): Not determined.

Philippines inventory (PICCS): Not determined. Japan inventory (ENCS): Not determined.

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16 . Other information

Label requirements

HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Hazardous Material Information System (U.S.A.)



The customer is responsible for determining the PPE code for this material.

National Fire Protection

Association (U.S.A.)



Date of printing : 10/11/2010. Date of issue : 10/11/2010.

: No previous validation. Date of previous issue

Version : 1

Indicates information that has changed from previously issued version.

: R10- Flammable. Full text of R-phrases

R21/22- Harmful in contact with skin and if swallowed. referred to in sections 2 and R36/37/38- Irritating to eyes, respiratory system and skin. 3 - Europe

Full text of classifications Xi - Irritant referred to in sections 2 and

3 - Europe

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

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