KIT SAFETY DATA SHEET



Kit Product Name	Transformation Reagent Refill Kit
Kit Catalog Number(s)	1660555, 1660555EDU

Revision date

28-Mar-2022

Kit Contents

Catalog Number(s)	Product Name
1660405, 1660405EDU, 9703031	Plasmid (pGLO) lyophilized
1660407, 1660407EDU, 9702928	Ampicillin, lyophilized
1660406, 1660406EDU, 9702997	Arabinose Lyophilized
1660421, 1660421EDU, 9702927	LB Broth
9702925	Transformation Solution
1660408, 1660408EDU, 9702924	E. coli HB101 Lyophilized

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Page 1/44

SAFETY DATA SHEET

Revision date 22-Feb-2021



Revision Number 2

1. Identification

Product identifier		
Product Name	Plasmid (pGLO) lyophilized	
Other means of identification		
Catalog Number(s)	1660405, 1660405EDU, 9703031	
Recommended use of the chemica	l and restrictions on use	
Recommended use	Laboratory chemicals	
Details of the supplier of the safety Corporate Headquarters Bio-Rad Laboratories Inc. 1000 Alfred Nobel Drive Hercules, CA 94547 USA	<u>data sheet</u> <u>Manufacturer Address</u> Bio-Rad Laboratories, Life Science Group 2000 Alfred Nobel Drive Hercules, California 94547 USA	Legal Entity / Contact Address Bio-Rad Laboratories Life Science 2000 Alfred Nobel Drive Hercules, California 94547
Technical Service	1-800-424-6723 support@bio-rad.com	
Emergency telephone number		
24 Hour Emergency Phone Numbe	r CHEMTREC USA: 1 (800) 424-9300	

2. Hazard(s) identification

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Hazard statements

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

The product contains no substances which at their given concentration, are considered to be hazardous to health.

Appearance Solid, (white to off-white) powder or cake, lyophilized

Physical state Solid

Odor Odorless

Other information No information available.

3. Composition/information on ingredients

Substance

Not applicable.

<u>Mixture</u>

Chemical name	CAS No	Weight-%	Trade secret
Deoxyribonucleic acids, plasmid cole1	100209-25-4	50 - 100	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water.
Ingestion	Rinse mouth.
Most important symptoms and effe	cts, both acute and delayed
Symptoms	No information available.
Indication of any immediate medica	I attention and special treatment needed
Note to physicians	Treat symptomatically.
	5. Fire-fighting measures
Suitable Extinguishing Media	5. Fire-fighting measures Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Suitable Extinguishing Media Specific hazards arising from the chemical	Use extinguishing measures that are appropriate to local circumstances and the
Specific hazards arising from the	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. No information available.
Specific hazards arising from the chemical Explosion data	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. No information available.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions

Ensure adequate ventilation.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

7. Handling and storage		
Precautions for safe handling		
Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.	
Conditions for safe storage, includi	ing any incompatibilities	
Storage Conditions	Store according to product and label instructions.	
8	. Exposure controls/personal protection	
Control parameters		
Exposure Limits	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.	
Appropriate engineering controls		
Engineering controls	Showers Eyewash stations Ventilation systems.	
Individual protection measures, suc	ch as personal protective equipment	
Eye/face protection	No special protective equipment required.	
Skin and body protection	No special protective equipment required.	
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.	
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.	
9. Physical and chemical properties		

Information on basic physical and chemical properties			
Physical state	Solid		
Appearance	Solid, (white to off-white) powder or cake, lyophilized		
Color	colorless		
Odor	Odorless		
Odor threshold	No information available		
Property	Values_	Remarks • Method	
рН		None known	
Melting point / freezing point	No data available	None known	

Plasmid (pGLO) lyophilized

Boiling point / boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive	No data available	
limits		
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	Soluble in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Other information		
Explosive properties	No information available	
Oxidizing properties	No information available	
Softening point	No information available	
Molecular weight	No information available	
VOC Content (%)	No information available	

No information available

No information available

10. Stability and reactivity

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	None known based on information supplied.
Incompatible materials	None known based on information supplied.
Hazardous decomposition products None known based on information supplied.	

11. Toxicological information

Information on likely routes of exposure

Inhalation	Specific test data for the substance or mixture is not available.	
Eye contact	Specific test data for the substance or mixture is not available.	
Skin contact	Specific test data for the substance or mixture is not available.	
Ingestion	Specific test data for the substance or mixture is not available.	
Symptoms related to the physical, chemical and toxicological characteristics		
Symptoms	No information available.	

Acute toxicity

Liquid Density

Bulk density

Numerical measures of toxicity

No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure		
Skin corrosion/irritation	No information available.	
Serious eye damage/eye irritation	No information available.	
Respiratory or skin sensitization	No information available.	
Germ cell mutagenicity	No information available.	
Carcinogenicity	No information available.	
Reproductive toxicity	No information available.	
STOT - single exposure	No information available.	
STOT - repeated exposure	No information available.	
Aspiration hazard	No information available.	
Other adverse effects	No information available.	
Interactive effects	No information available.	

12. Ecological information

Ecotoxicity	The environmental impact of this product has not been fully investigated.
Persistence and degradability	No information available.
Bioaccumulation	There is no data for this product.
Other adverse effects	No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused	Dispose of in accordance with local regulations. Dispose of waste in accordance with
products	environmental legislation. Dispose of in accordance with local regulations. Dispose of waste
	in accordance with environmental legislation.

Contaminated packaging

Do not reuse empty containers.

14. Transport information

DOT	Not regulated
TDG	Not regulated
MEX	Not regulated
	Not regulated
IMDG_	Not regulated

15. Regulatory information

International Inventories Contact supplier for inventory compliance status

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA HMIS	Health hazards 0 Health hazards 0	Flammability Flammability		Instability 0 Physical hazards 0	Special hazards - Personal protection X
	obreviations and acrony				
TWĂ	EXPOSURE CONTROLS TWA (time-weighted avera Maximum limit value	ge) s	STEL		rm Exposure Limit) า
Agency for Toxic Su U.S. Environmental European Food Safe EPA (Environmental Acute Exposure Gui U.S. Environmental Food Research Jour Hazardous Substan International Uniform National Institute of Australia National Ins NIOSH (National Ins National Library of M National Library of M National Toxicology New Zealand's Cher Organization for Ecc	deline Level(s) (AEGL(s)) Protection Agency Federa Protection Agency High P rnal ce Database n Chemical Information Da Technology and Evaluatio dustrial Chemicals Notifica stitute for Occupational Sa Medicine's ChemID Plus (N Medicine's PubMed databa Program (NTP) mical Classification and In ponomic Co-operation and I ponomic Co-operation and I	istry (ATSDR) iew Database Insecticide, Fungic oduction Volume C tabase (IUCLID) (NITE) tion and Assessme ety and Health) LM CIP) se (NLM PUBMED) prmation Database evelopment Enviro evelopment High P	ide, and hemica nt Sche (CCID) nment, iroducti	d Rodenticide Act s eme (NICNAS) Health, and Safety Publicati on Volume Chemicals Progr	
	ovided in this Safety Dat	a Sheet is correct	to the b	pest of our knowledge, info	

date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET

Revision date 24-Feb-2021



Revision Number 1

1. Identification

Product identifier		
Product Name	Ampicillin, lyophilized	
Other means of identification		
Catalog Number(s)	1660407, 1660407EDU, 9702928	
Recommended use of the chemical	and restrictions on use	
Recommended use	Laboratory chemicals	
Details of the supplier of the safety	data sheet	
Corporate Headquarters Bio-Rad Laboratories Inc. 1000 Alfred Nobel Drive Hercules, CA 94547 USA	<u>Manufacturer Address</u> Bio-Rad Laboratories, Life Science Group 2000 Alfred Nobel Drive Hercules, California 94547 USA	Legal Entity / Contact Address Bio-Rad Laboratories Life Science 2000 Alfred Nobel Drive Hercules, California 94547
Technical Service	1-800-424-6723	
Emergency telephone number	support@bio-rad.com	
24 Hour Emergency Phone Number	CHEMTREC USA: 1 (800) 424-9300	
	2. Hazard(s) identification	
<u>Classification</u>		
Respiratory sensitization		Category 1
Skin sensitization		Category 1A
Hazards not otherwise classified (He Not applicable	<u>NOC)</u>	
Label elements		
Danger		
Hazard statements May cause allergy or asthma symptom May cause an allergic skin reaction	s or breathing difficulties if inhaled	

Physical state Solid

Odor Odorless

Ampicillin, lyophilized

Precautionary Statements - Prevention

Avoid breathing dust/fume/gas/mist/vapors/spray In case of inadequate ventilation wear respiratory protection Contaminated work clothing must not be allowed out of the workplace Wear protective gloves/protective clothing/eye protection/face protection

IF ON SKIN: Wash with plenty of water and soap If skin irritation or rash occurs: Get medical advice/attention Wash contaminated clothing before reuse IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing If experiencing respiratory symptoms: Call a POISON CENTER or doctor

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Other information

No information available.

3. Composition/information on ingredients

Substance

Not applicable.

<u>Mixture</u>

Chemical name	CAS No	Weight-%	Trade secret
Sodium	69-52-3	50 - 100	*
[2S-[2.alpha.,5.alpha.,6.beta.(S*)]]-6-(aminophenyla			
cetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.			
2.0]heptane-2-carboxylate			

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures **Description of first aid measures General advice** Show this safety data sheet to the doctor in attendance. Inhalation May cause allergic respiratory reaction. If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Get immediate medical advice/attention. Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. Wash with soap and water. May cause an allergic skin reaction. In the case of skin irritation Skin contact or allergic reactions see a physician. Ingestion May produce an allergic reaction. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention. Clean mouth with water and drink afterwards plenty of water. Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eves or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. See section 8 for more information.

Most important symptoms and effects, both acute and delayed

Symptoms	May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing and/ or wheezing. Itching. Rashes. Hives.
Indication of any immediate medica	l attention and special treatment needed
Note to physicians	May cause sensitization in susceptible persons. Treat symptomatically.
	5. Fire-fighting measures
Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Specific hazards arising from the chemical	Product is or contains a sensitizer. May cause sensitization by inhalation and skin contact. May cause sensitization by skin contact.
Explosion data Sensitivity to mechanical impac	t None.
Sensitivity to static discharge	None.
Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
Other information	Refer to protective measures listed in Sections 7 and 8.
Methods and material for containm	ent and cleaning up
Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

7. Handling and storage

Precautions for safe handling	
Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Provide extract ventilation to points where emissions occur. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash before reuse.
Conditions for safe storage, includ	ing any incompatibilities
Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children. Store according to product and label instructions.

8. Exposure controls/personal protection

Control parameters	
Exposure Limits	The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.
Appropriate engineering controls	
Engineering controls	Showers Eyewash stations Ventilation systems.
Individual protection measures, su	ch as personal protective equipment
Eye/face protection	Wear safety glasses with side shields (or goggles).
Hand protection	Wear suitable gloves.
Skin and body protection	Wear suitable protective clothing.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General hygiene considerations	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

9. Physical and chemical properties

Information on basic physical and o	hemical properties	
Physical state	Solid	
Appearance	crystalline	
Color	light yellow	
Odor	Odorless	
Odor threshold	No information available	
Property	Values	Remarks • Method
Property pH	values	None known
рп Melting point / freezing point	240 °C / 464 °F	
	No data available	None known
Boiling point / boiling range Flash point	No data available	None known
•	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	NO UALA AVAIIADIE	None known
Flammability Limit in Air	No data available	NOTE KIOWIT
Upper flammability or explosive limits	NO data avaliable	
Lower flammability or explosive	No data available	
limits		
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	Soluble in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known

Dynamic viscosity	No data available	None known
Other information		
Explosive properties	No information available	
Oxidizing properties	No information available	
Softening point	No information available	
Molecular weight	No information available	
VOC Content (%)	No information available	
Liquid Density	No information available	
Bulk density	No information available	
	10. Stability and	reactivity
Reactivity	No information available.	
Chemical stability	Stable under normal conditions	
Possibility of hazardous reactions	None under normal processing.	
		in a compliant
Conditions to avoid	None known based on informat	ion supplied.
Conditions to avoid Incompatible materials	None known based on informat	

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. May cause sensitization in susceptible persons. (based on components).
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). May cause sensitization by skin contact.
Ingestion	Specific test data for the substance or mixture is not available. May cause additional affects as listed under "Inhalation".
Symptoms related to the physical,	chemical and toxicological characteristics
Symptoms	Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Coughing and/ or wheezing. Itching. Rashes. Hives.

Acute toxicity

Numerical measures of toxicity

No information available

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium	> 5314 mg/kg (Rat)	-	-
[2S-[2.alpha.,5.alpha.,6.beta.(S*			
)]]-6-(aminophenylacetamido)-3,			
3-dimethyl-7-oxo-4-thia-1-azabi			
cyclo[3.2.0]heptane-2-carboxyla			
te			

69-52-3		

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	No information available.
Respiratory or skin sensitization	May cause sensitization by inhalation. May cause sensitization by skin contact.
Germ cell mutagenicity	No information available.

Carcinogenicity

No information available. The table below indicates whether each agency has listed any ingredient as a carcinogen

	s whether each agency has	s listed any ingredient as a	carcinogen.	
Chemical name	ACGIH	IARC	NTP	OSHA
Sodium	-	Group 3	-	-
[2S-[2.alpha.,5.alpha.,6.b				
eta.(S*)]]-6-(aminophenyl				
acetamido)-3,3-dimethyl-				
7-oxo-4-thia-1-azabicyclo				
[3.2.0]heptane-2-carboxyl				
ate				
69-52-3				

Legend

IARC (International Agency for Research on Cancer)

Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.
Other adverse effects	No information available.
Interactive effects	No information available.

12. Ecological information

Ecotoxicity	The environmental impact of this product has not been fully investigated.
Persistence and degradability	No information available.
Bioaccumulation	There is no data for this product.
Other adverse effects	No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused
productsDispose of in accordance with local regulations. Dispose of waste in accordance with
environmental legislation. Dispose of in accordance with local regulations. Dispose of waste
in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

14. Transport information

DOT	Not regulated
TDG	Not regulated
<u>MEX</u>	Not regulated
	Not regulated
IMDG_	Not regulated

15. Regulatory information

International Inventories

Contact supplier for inventory compliance status

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

		16. Other inforr	nation	
NFPA HMIS Chronic Hazard Star I	Health hazards 2 Health hazards 2 * Legend *= Chronic I	Flammability 0 Flammability 0 Health Hazard	Instability 0 Physical hazards 0	Special hazards - Personal protection X
	abbreviations and acronyms used acronyms used acronyme controls/PE TWA (time-weighted average)		ON	rm Exposure Limit)
Ceiling	Maximum limit value	*	Skin designatior	
Agency for Toxic S U.S. Environmenta European Food Sa EPA (Environmenta Acute Exposure Gu U.S. Environmenta V.S. Environmenta Food Research Jou Hazardous Substar International Unifor National Institute of Australia National I NIOSH (National In National Library of National Library of National Library of National Toxicology New Zealand's Che Organization for Eco Organization for Eco World Health Organ	nce Database m Chemical Information Database f Technology and Evaluation (N ndustrial Chemicals Notification istitute for Occupational Safety a Medicine's ChemID Plus (NLM Medicine's PubMed database (I y Program (NTP) emical Classification and Inform conomic Co-operation and Deve conomic Co-operation and Deve	y (ATSDR) Database ecticide, Fungicide, an ction Volume Chemic ase (IUCLID) ITE) and Assessment Sch and Health) CIP) NLM PUBMED) ation Database (CCIE lopment Environment lopment High Produc lopment Screening In	nd Rodenticide Act als eme (NICNAS)) , Health, and Safety Publicati ion Volume Chemicals Progr	
Revision date Revision Note Disclaimer	24-Feb-202 SDS sectio	21 ns updated. 1. 2.		
The information p	rovided in this Safety Data Sh tion. The information given is			

ate of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET

Revision date 19-Aug-2021



Revision Number 2

1. Identification

Product identifier		
Product Name	Arabinose Lyophilized	
Other means of identification		
Catalog Number(s)	1660406, 1660406EDU, 9702997	
Recommended use of the chemica	and restrictions on use	
Recommended use	Laboratory chemicals	
Details of the supplier of the safety Corporate Headquarters Bio-Rad Laboratories Inc. 1000 Alfred Nobel Drive Hercules, CA 94547 USA	<u>data sheet</u> <u>Manufacturer Address</u> Bio-Rad Laboratories, Life Science Group 2000 Alfred Nobel Drive Hercules, California 94547 USA	Legal Entity / Contact Address Bio-Rad Laboratories Life Science 2000 Alfred Nobel Drive Hercules, California 94547
Technical Service	1-800-424-6723 support@bio-rad.com	
Emergency telephone number		
24 Hour Emergency Phone Numbe	CHEMTREC USA: 1 (800) 424-9300	

2. Hazard(s) identification

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Hazard statements

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

The product contains no substances which at their given concentration, are considered to be hazardous to health.

Appearance powder or cake, lyophilized Physical state Solid Odor Odorless

Other information No information available.

Arabinose Lyophilized

3. Composition/information on ingredients

Substance

Chemical name	CAS No	Weight-%	Trade secret
L-Arabinose	5328-37-0	50 - 100	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water.
Ingestion	Rinse mouth.
Most important symptoms and effe	cts, both acute and delayed
Symptoms	No information available.
Indication of any immediate medica	al attention and special treatment needed
Note to physicians	Treat symptomatically.
	5. Fire-fighting measures
Suitable Extinguishing Media	5. Fire-fighting measures Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Suitable Extinguishing Media Specific hazards arising from the chemical	Use extinguishing measures that are appropriate to local circumstances and the
Specific hazards arising from the	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. No information available.
Specific hazards arising from the chemical Explosion data	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. No information available.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Pick up and transfer to properly labeled containers.

7. Handling and storage

Precautions for safe handling			
Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.		
Conditions for safe storage, incluc	ling any incompatibilities		
Storage Conditions	Store according to product and label instructions.		
l l	3. Exposure controls/personal protection		
Control parameters			
Exposure Limits	The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.		
Appropriate engineering controls			
Engineering controls	Showers Eyewash stations Ventilation systems.		
Individual protection measures, su	ch as personal protective equipment		
Eye/face protection	No special protective equipment required.		
Skin and body protection	No special protective equipment required.		
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.		
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.		

9. Physical and chemical properties

°F

Property	values
рН	
Melting point / freezing point	158 °C / 316.4
Boiling point / boiling range	No data available

Remarks • Method None known

None known

Arabinose Lyophilized

Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	Soluble in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Other information		
Explosive properties	No information available	
Oxidizing properties	No information available	
Softening point	No information available	
Molecular weight	No information available	
VOC Content (%)	No information available	
Liquid Density	No information available	
Bulk density	No information available	

10. Stability and reactivity

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	None known based on information supplied.
Incompatible materials	None known based on information supplied.
Hazardous decomposition products None known based on information supplied.	

11. Toxicological information

Information on likely routes of exposure

Inhalation	Specific test data for the substance or mixture is not available.	
Eye contact	Specific test data for the substance or mixture is not available.	
Skin contact	Specific test data for the substance or mixture is not available.	
Ingestion	Specific test data for the substance or mixture is not available.	
Symptoms related to the physical, chemical and toxicological characteristics		

Symptoms

No information available.

Acute toxicity

Numerical measures of toxicity No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure		
Skin corrosion/irritation	No information available.	
Serious eye damage/eye irritation	No information available.	
Respiratory or skin sensitization	No information available.	
Germ cell mutagenicity	No information available.	
Carcinogenicity	No information available.	
Reproductive toxicity	No information available.	
STOT - single exposure	No information available.	
STOT - repeated exposure	No information available.	
Aspiration hazard	No information available.	
Other adverse effects	No information available.	

Interactive effects No information available.

12. Ecological information

Ecotoxicity	The environmental impact of this product has not been fully investigated.
Persistence and degradability	No information available.
Bioaccumulation	There is no data for this product.
Other adverse effects	No information available.

13. Disposal considerations

Waste treatment methods	
Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

14. Transport information

DOT	Not regulated
TDG	Not regulated
MEX	Not regulated
	Not regulated
IMDG	Not regulated

15. Regulatory information

International Inventories Contact supplier for inventory compliance status

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA	
HMIS	

Health hazards 0 Health hazards 0 Flammability 0 Flammability 0 Instability 0 Physical hazards 0 Special hazards - Personal protection X

Key or legend to abbreviations and acronyms used in the safety data sheet Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit) Ceiling Maximum limit value Skin designation Key literature references and sources for data used to compile the SDS Agency for Toxic Substances and Disease Registry (ATSDR) U.S. Environmental Protection Agency ChemView Database European Food Safety Authority (EFSA) EPA (Environmental Protection Agency) Acute Exposure Guideline Level(s) (AEGL(s)) U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act U.S. Environmental Protection Agency High Production Volume Chemicals Food Research Journal Hazardous Substance Database International Uniform Chemical Information Database (IUCLID) National Institute of Technology and Evaluation (NITE) Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS) NIOSH (National Institute for Occupational Safety and Health) National Library of Medicine's ChemID Plus (NLM CIP) National Library of Medicine's PubMed database (NLM PUBMED) National Toxicology Program (NTP) New Zealand's Chemical Classification and Information Database (CCID) Organization for Economic Co-operation and Development Environment, Health, and Safety Publications Organization for Economic Co-operation and Development High Production Volume Chemicals Program Organization for Economic Co-operation and Development Screening Information Data Set World Health Organization 19-Aug-2021 **Revision date Revision Note**

SDS sections updated. 1. 2.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET

Revision date 06-Nov-2020



Revision Number 1

1. Identification

Product identifier			
Product Name	LB Broth		
Other means of identification			
Catalog Number(s)	1660421, 1660421EDU, 9702927		
Recommended use of the chemical and restrictions on use			
Recommended use	Laboratory chemicals		
Details of the supplier of the safety data sheet			
<u>Corporate Headquarters</u> Bio-Rad Laboratories Inc. 1000 Alfred Nobel Drive Hercules, CA 94547 USA	<u>Manufacturer Address</u> Bio-Rad Laboratories, Life Science Group 2000 Alfred Nobel Drive Hercules, California 94547 USA	Legal Entity / Contact Address Bio-Rad Laboratories Life Science 2000 Alfred Nobel Drive Hercules, California 94547	
Technical Service	1-800-424-6723 support@bio-rad.com		
Emergency telephone number			
24 Hour Emergency Phone Number	CHEMTREC USA: 1 (800) 424-9300		

2. Hazard(s) identification

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Hazard statements

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Appearance Liquid

Physical state Liquid

Odor Odorless

Other information

No information available.

Substance

Not applicable.

<u>Mixture</u>

Chemical name	CAS No	Weight-%	Trade secret
Water	7732-18-5	50 - 100	*
Yeast extract	8013-01-2	0.3 - 0.999	*
Sodium chloride	7647-14-5	0.3 - 0.999	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water.
Ingestion	Rinse mouth.
Most important symptoms and effe	cts, both acute and delayed
Symptoms	No information available.
Indication of any immediate medica	al attention and special treatment needed
Note to physicians	Treat symptomatically.
	5. Fire-fighting measures
Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the
	surrounding environment.
Specific hazards arising from the chemical	surrounding environment. No information available.
	No information available.
chemical Explosion data	No information available.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions

Ensure adequate ventilation.

Methods and material for containment and cleaning up Methods for containment Prevent further leakage or spillage if safe to do so. Methods for cleaning up Pick up and transfer to properly labeled containers. 7. Handling and storage Precautions for safe handling Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Conditions for safe storage, including any incompatibilities **Storage Conditions** Store according to product and label instructions. 8. Exposure controls/personal protection Control parameters This product, as supplied, does not contain any hazardous materials with occupational **Exposure Limits** exposure limits established by the region specific regulatory bodies. Appropriate engineering controls **Engineering controls** Showers Eyewash stations Ventilation systems. Individual protection measures, such as personal protective equipment Eye/face protection No special protective equipment required.

Skin and body protection N	lo special protective equipment required.
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Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are
	exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Information on basic physical and	d chemical properties	
Physical state	Liquid	
Appearance	Liquid	
Color	colorless	
Odor	Odorless	
Odor threshold	No information available	
Property_	Values	Remarks • Method
рН		None known
Melting point / freezing point	0 °C / 32 °F	

LB Broth

Liquid Density

Bulk density

Boiling point / boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive	No data available	
limits		
Lower flammability or explosive	No data available	
limits		
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	Miscible in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Other information		
Explosive properties	No information available	
Oxidizing properties	No information available	
Softening point	No information available	
Molecular weight	No information available	
VOC Content (%)	No information available	

No information available

No information available

10. Stability and reactivity

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	None known based on information supplied.
Incompatible materials	None known based on information supplied.
Hazardous decomposition products	None known based on information supplied.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.
Symptoms related to the physical, o	chemical and toxicological characteristics
Symptoms	No information available.

Acute toxicity

Numerical measures of toxicity

No information available

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water	> 90 mL/kg (Rat)	-	-
7732-18-5	$\rho_{\rm ext}$		
Sodium chloride 7647-14-5	= 3 g/kg (Rat)	> 10000 mg/kg (Rabbit)	> 42 mg/L (Rat)1 h
7047-14-5			
Delayed and immediate effects	as well as chronic effects fror	n short and long-term exposure	9
Skin corrosion/irritation	No information available.		_
Serious eye damage/eye irritati	on No information available.		
Respiratory or skin sensitizatio	n No information available.		
Germ cell mutagenicity	No information available.		
Carcinogenicity	No information available.		
Reproductive toxicity	No information available.		
STOT - single exposure	No information available.		
STOT - repeated exposure	No information available.		
Aspiration hazard	No information available.		
Other adverse effects	No information available.		
Interactive effects	No information available.		

12. Ecological information

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Sodium chloride 7647-14-5	-	LC50: 4747 - 7824mg/L (96h, Oncorhynchus mykiss) LC50: 5560 - 6080mg/L (96h, Lepomis macrochirus) LC50: 6020 - 7070mg/L (96h, Pimephales promelas) LC50: 6420 - 6700mg/L (96h, Pimephales promelas) LC50: =12946mg/L (96h,	-	EC50: 340.7 - 469.2mg/L (48h, Daphnia magna) EC50: =1000mg/L (48h, Daphnia magna)

	Lepomis macrochirus) LC50: =7050mg/L (96h, Pimephales promelas)	
Persistence and degradability	No information available.	
Bioaccumulation	There is no data for this product.	
Other adverse effects	No information available.	
	13. Disposal considerations	
Waste treatment methods		
Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.	
Contaminated packaging	Do not reuse empty containers.	
	14. Transport information	
DOT	Not regulated	

DOT	Not regulated
TDG	Not regulated
MEX	Not regulated
IATA	Not regulated
IMDG	Not regulated

15. Regulatory information

International Inventories

Contact supplier for inventory compliance status

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level

pertaining to releases of this material.

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Water	-	-	Х
7732-18-5			

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information							
NFPA HMIS	Health hazar Health hazar	-	Flammability Flammability		Instability 0 Physical hazards	0	Special hazards $\ -$ Personal protection $\ X$
Key or legend t	o abbreviations and a	ronyms	used in the safe	ty data sh	eet		
Legend Section TWA Ceiling	n 8: EXPOSURE CON TWA (time-weighted Maximum limit value			ECTION STEL	STEL (Short Skin designa		Exposure Limit)
Key literature references and sources for data used to compile the SDS Agency for Toxic Substances and Disease Registry (ATSDR) U.S. Environmental Protection Agency ChemView Database European Food Safety Authority (EFSA) EPA (Environmental Protection Agency) Acute Exposure Guideline Level(s) (AEGL(s)) U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act U.S. Environmental Protection Agency High Production Volume Chemicals Food Research Journal Hazardous Substance Database International Uniform Chemical Information Database (IUCLID) National Institute of Technology and Evaluation (NITE) Australia National Institute for Occupational Safety and Health) National Library of Medicine's ChemID Plus (NLM CIP) National Library of Medicine's ChemID Plus (NLM CIP) National Toxicology Program (NTP) New Zealand's Chemical Casification and Information Database (CCID) Organization for Economic Co-operation and Development Environment, Health, and Safety Publications Organization for Economic Co-operation and Development Environment, Health, and Safety Publications Organization for Economic Co-operation and Development Environment, Health, and Safety Publications Organization for Economic Co-operation and Development Environment, Health, and Safety Publications Organization for Economic Co-operation and Development Environment, Health, and Safety Publications Organization for Economic Co-operation and Development Screening Information Data Set World Health Organization							
	:	ty Data S	ons updated. 1. 2	o the best			nation and belief at the

ate of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET

Revision date 26-Feb-2021



Revision Number 1

Product identifier		
Product Name	Transformation Solution	
Other means of identification		
Catalog Number(s)	9702925	
Recommended use of the chemical	and restrictions on use	
Recommended use	Laboratory chemicals	
Details of the supplier of the safety of Corporate Headquarters Bio-Rad Laboratories Inc. 1000 Alfred Nobel Drive Hercules, CA 94547 USA	Manufacturer Address Bio-Rad Laboratories, Life Science Group 2000 Alfred Nobel Drive Hercules, California 94547 USA	Legal Entity / Contact Address Bio-Rad Laboratories Life Science 2000 Alfred Nobel Drive Hercules, California 94547
Technical Service	1-800-424-6723 support@bio-rad.com	
Emergency telephone number		
24 Hour Emergency Phone Number	CHEMTREC USA: 1 (800) 424-9300	

2. Hazard(s) identification

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Hazard statements

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Appearance aqueous solution

Physical state Liquid

Odor Odorless

Other information

No information available.

Substance

Not applicable.

Mixture

Chemical name	CAS No	Weight-%	Trade secret
Water	7732-18-5	50 - 100	*
Calcium chloride, hexahydrate	7774-34-7	1 - 2.5	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures		
Description of first aid measures		
Inhalation	Remove to fresh air.	
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.	
Skin contact	Wash skin with soap and water.	
Ingestion	Rinse mouth.	
Most important symptoms and effe	ects, both acute and delayed	
Symptoms	No information available.	
Indication of any immediate medical attention and special treatment needed		
Note to physicians	Treat symptomatically.	
	5. Fire-fighting measures	
	J. The hynning measures	
Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.	
Specific hazards arising from the chemical	No information available.	
Explosion data Sensitivity to mechanical impact None.		
Sensitivity to static discharge	None.	
Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.	

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Conditions for safe storage, including any incompatibilities

Storage Conditions

Store according to product and label instructions.

8. Exposure controls/personal protection

Control parameters	
Exposure Limits	The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.
Appropriate engineering controls	
Engineering controls	Showers Eyewash stations Ventilation systems.
Individual protection measures, su	ch as personal protective equipment
Eye/face protection	No special protective equipment required.
Skin and body protection	No special protective equipment required.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	aqueous solution
Color	colorless
Odor	Odorless
Odor threshold	No information available

Transformation Solution

Property	<u>Values</u> 6-7	Remarks • Method
pH Melting point / freezing point	0 °C / 32 °F	
	100 °C / 212 °F	
Boiling point / boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data avallable	
Flammability Limit in Air		None known
Upper flammability or explosive	No data available	
limits		
Lower flammability or explosive	No data available	
limits		
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	Miscible in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Other information		
Explosive properties	No information available	
Oxidizing properties	No information available	
Softening point	No information available	
Molecular weight	No information available	
VOC Content (%)	No information available	
Liquid Density	No information available	
Bulk density	No information available	

10. Stability and reactivity

Reactivity	No information available.	
Chemical stability	Stable under normal conditions.	
Possibility of hazardous reactions	None under normal processing.	
Conditions to avoid	None known based on information supplied.	
Incompatible materials	None known based on information supplied.	
Hazardous decomposition products None known based on information supplied.		

11. Toxicological information

Information on likely routes of exposure

Inhalation	Specific test data for the substance or mixture is not available.	
Eye contact	Specific test data for the substance or mixture is not available.	
Skin contact	Specific test data for the substance or mixture is not available.	
Ingestion	Specific test data for the substance or mixture is not available.	
Symptoms related to the physical, chemical and toxicological characteristics		
Symptoms	No information available.	

Acute toxicity

Numerical measures of toxicity No information available

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50		
Water	> 90 mL/kg (Rat)	-	-		
7732-18-5					
Delayed and immediate effects	Delayed and immediate effects as well as chronic effects from short and long-term exposure				
Skin corrosion/irritation	No information available.				
Serious eye damage/eye irritati	ion No information available.				
Respiratory or skin sensitization	on No information available.				
Germ cell mutagenicity	No information available.				
0	No information and the later				
Carcinogenicity	No information available.				
Reproductive toxicity	No information available.				
	No information available.				
STOT - single exposure					
STOT - repeated exposure	No information available.				
Aspiration hazard	No information available.				
Other adverse effects	No information available.				
Interactive effects	No information available.				
	12. Ecologica	al information			
			. in time to d		
Ecotoxicity	The environmental impact	t of this product has not been fully	investigated.		
Persistence and degradability	No information available.				
Bioaccumulation	There is no data for this p	roduct			
Other adverse effects	No information available.				

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

14. Transport information

DOT	Not regulated
TDG	Not regulated
MEX	Not regulated
IATA	Not regulated
IMDG	Not regulated

15. Regulatory information

International Inventories

Contact supplier for inventory compliance status

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Water	-	-	Х
7732-18-5			

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information				
NFPA HMIS	Health hazards 0 Health hazards 0	Flammability 0 Flammability 0	Instability 0 Physical hazards 0	Special hazards $\ \ -$ Personal protection $\ \ X$
	abbreviations and acronyms u B: EXPOSURE CONTROLS/PEI TWA (time-weighted average) Maximum limit value		l	n Exposure Limit)
Agency for Toxic S U.S. Environmenta European Food Sa EPA (Environment Acute Exposure Gu U.S. Environmenta U.S. Environmenta Food Research Jou Hazardous Substa International Unifor National Institute o Australia National In NIOSH (National In National Library of National Library of National Library of National Toxicolog New Zealand's Che Organization for Ed	nce Database rm Chemical Information Databa f Technology and Evaluation (NI Industrial Chemicals Notification nstitute for Occupational Safety a Medicine's ChemID Plus (NLM (Medicine's PubMed database (N y Program (NTP) emical Classification and Informa conomic Co-operation and Deve conomic Co-operation and Deve conomic Co-operation and Deve	y (ATSDR) Database ecticide, Fungicide, and ction Volume Chemicals use (IUCLID) ITE) and Assessment Schem and Health) CIP) NLM PUBMED) ation Database (CCID) lopment Environment, H lopment High Productior	Rodenticide Act ne (NICNAS) ealth, and Safety Publicatio volume Chemicals Progra	
Revision date Revision Note <u>Disclaimer</u>	26-Feb-202 SDS section	ns updated. 1. 2.		median and balief at the

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET

Revision date 19-Nov-2021



Revision Number 1

1. Identification

Product identifier		
Product Name	E. coli HB101 Lyophilized	
Other means of identification		
Catalog Number(s)	1660408, 1660408EDU, 9702924	
Recommended use of the chemica	and restrictions on use	
Recommended use	Laboratory chemicals	
Details of the supplier of the safety Corporate Headquarters Bio-Rad Laboratories Inc. 1000 Alfred Nobel Drive Hercules, CA 94547 USA	<u>data sheet</u> <u>Manufacturer Address</u> Bio-Rad Laboratories, Life Science Group 2000 Alfred Nobel Drive Hercules, California 94547 USA	Legal Entity / Contact Address Bio-Rad Laboratories Life Science 2000 Alfred Nobel Drive Hercules, California 94547
Technical Service Emergency telephone number	1-800-424-6723 support@bio-rad.com	
24 Hour Emergency Phone Numbe	r CHEMTREC USA: 1 (800) 424-9300	

2. Hazard(s) identification

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Hazard statements

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

The product contains no substances which at their given concentration, are considered to be hazardous to health.

Appearance aqueous solution

Physical state Liquid

Odor Odorless

Other information

E. coli HB101 Lyophilized

No information available.

Biosafety Level 1 - Agents not known to consistently cause disease in healthy adults and that present minimal potential hazard to laboratory personnel and the environment, are present in this product Contains human source material and / or potentially infectious components

3. Composition/information on ingredients

Substance

Chemical name	CAS No	Weight-%	Trade secret
BSL1 Bacteria	NO-CAS-104	50 - 100	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

Inhalation	Remove to fresh air.
Eye contact	Call a physician if irritation persists. Contains human source material and / or potentially infectious components.
Skin contact	Wash skin with soap and water.
Ingestion	Call a physician. Contains human source material and / or potentially infectious components.
Most important symptoms and effe	cts, both acute and delayed
Symptoms	No information available.
Indication of any immediate medica	al attention and special treatment needed
Note to physicians	Contains human source material and / or potentially infectious components.
	5. Fire-fighting measures
Suitable Extinguishing Media	5. Fire-fighting measures Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Suitable Extinguishing Media Specific hazards arising from the chemical	Use extinguishing measures that are appropriate to local circumstances and the
Specific hazards arising from the	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. No information available.
Specific hazards arising from the chemical Explosion data	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. No information available.
Specific hazards arising from the chemical Explosion data Sensitivity to mechanical impac	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. No information available.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Methods and material for containment and cleaning up

Methods for containment	Do not allow into any sewer, on the ground or into any body of water.
Methods for cleaning up	Clean contaminated surface thoroughly. Use:. Disinfectant.

7. Handling and storage

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.	
Conditions for safe storage, including any incompatibilities		
Storage Conditions	Store according to product and label instructions.	

8. Exposure controls/personal protection

Control parameters

Exposure Limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering controls Individual protection measures, suc	Showers Eyewash stations Ventilation systems. ch as personal protective equipment
Eye/face protection	Wear safety glasses with side shields (or goggles).
Hand protection	Wear suitable gloves.
Skin and body protection	Wear suitable protective clothing.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General hygiene considerations	Follow universal and standard precautions for handling potentially infectious materials.

9. Physical and chemical properties

Information on basic physical and chemical propertiesPhysical stateLiquidAppearanceaqueous solutionColorlight pinkOdorOdorlessOdor thresholdNo information available

E. coli HB101 Lyophilized

Property	<u>Values</u>	Remarks • Method
рН	7.5-8.5	
Melting point / freezing point	No data available	None known
Boiling point / boiling range	100 °C / 212 °F	
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive	No data available	
limits		
Lower flammability or explosive	No data available	
limits		
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	Miscible in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Other information		
Explosive properties	No information available	
Oxidizing properties	No information available	
Softening point	No information available	
Molecular weight	No information available	
VOC Content (%)	No information available	
Liquid Density	No information available	
Bulk density	No information available	
Lan actiony		

10. Stability and reactivity

Reactivity	No information available.	
Chemical stability	Stable under normal conditions.	
Possibility of hazardous reactions	None under normal processing.	
Conditions to avoid	None known based on information supplied.	
Incompatible materials	None known based on information supplied.	
Hazardous decomposition products None known based on information supplied.		

11. Toxicological information

Information on likely routes of exposure

Symptoms	No information available.	
Symptoms related to the physical	ptoms related to the physical, chemical and toxicological characteristics	
Ingestion	Specific test data for the substance or mixture is not available.	
Skin contact	Specific test data for the substance or mixture is not available.	
Eye contact	Specific test data for the substance or mixture is not available.	
Inhalation	Specific test data for the substance or mixture is not available.	

Acute toxicity

Numerical measures of toxicity No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure				
Skin corrosion/irritation No information available.				
Serious eye damage/eye irritation	No information available.			
Respiratory or skin sensitization	No information available.			
Germ cell mutagenicity	No information available.			
Carcinogenicity	No information available.			
Reproductive toxicity	No information available.			
STOT - single exposure	No information available.			
STOT - repeated exposure	No information available.			
Aspiration hazard	No information available.			
Other adverse effects	No information available.			
Interactive effects	No information available.			
Other adverse effects	No information available.			

12. Ecological information

Ecotoxicity	The environmental impact of this product has not been fully investigated.
Persistence and degradability	No information available.
Bioaccumulation	There is no data for this product.
Other adverse effects	No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused

products	environmental legislation.
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Contaminated packaging Do not reuse empty containers.

14. Transport information

DOT	Not regulated
TDG	Not regulated
MEX	Not regulated
	Not regulated
IMDG_	Not regulated

15. Regulatory information

International Inventories

Contact supplier for inventory compliance status

US Federal Regulations

<u>SARA 313</u>

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

	lealth hazards 0 lealth hazards 0	Flammability Flammability		Instability 0 Physical hazards	0	Special hazards - Personal protection X
	SURE CONTROLS/PI me-weighted average)	ERSONAL PROT	ECTIO	N STEL (Shor		n Exposure Limit)
Ceiling Maximu	ım limit value	*		Skin designa	ation	
Key literature references Agency for Toxic Substance U.S. Environmental Protect European Food Safety Auth EPA (Environmental Protect Acute Exposure Guideline I U.S. Environmental Protect U.S. Environmental Protect Food Research Journal Hazardous Substance Data International Uniform Chern National Institute of Techno Australia National Industria NIOSH (National Industria NIOSH (National Institute fo National Library of Medicine National Library of Medicine National Toxicology Progra New Zealand's Chemical C Organization for Economic Organization for Economic World Health Organization	es and Disease Regist ion Agency ChemView hority (EFSA) ction Agency) Level(s) (AEGL(s)) ion Agency Federal In ion Agency High Prod abase hical Information Datab ology and Evaluation (N I Chemicals Notificatio or Occupational Safety e's ChemID Plus (NLW e's PubMed database m (NTP) lassification and Inform Co-operation and Dev Co-operation and Dev	ry (ATSDR) v Database secticide, Fungici uction Volume Ch vase (IUCLID) NITE) n and Assessmer and Health) I CIP) (NLM PUBMED) nation Database (elopment Environ elopment High Pr	de, and emicals t Scher (CCID) ment, F oductio	Rodenticide Act s me (NICNAS) Health, and Safety Publi n Volume Chemicals P		
Revision date	19-Nov-20					
Revision Note Disclaimer	Significan	t changes through	nout SD	S. Review all sections.		
The information provided date of its publication. Th						

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet