

SAFETY DATA SHEET



AdvanceBio 2-AB glycan labeling kit (96 samples), Part Number 5190-8008

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

False

1.1 Product identifier

Product name : AdvanceBio 2-AB glycan labeling kit (96 samples), Part Number 5190-8008
Part no. (chemical kit) : 5190-8008
Part no. : Reductant solution Not available.
2-AB solution Not available.

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

Material uses : Reagents and Standards for Analytical Chemistry Laboratory Use
Reductant solution 375 µL
2-AB solution 375 µL

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000

e-mail address of person responsible for this SDS : pdl-msds_author@agilent.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation) : CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Reductant solution Mixture
2-AB solution Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Reductant solution

H300 ACUTE TOXICITY (oral) - Category 2
H311 ACUTE TOXICITY (dermal) - Category 3
H330 ACUTE TOXICITY (inhalation) - Category 2
H314 SKIN CORROSION/IRRITATION - Category 1B
H411 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2

2-AB solution

H314 SKIN CORROSION/IRRITATION - Category 1B
H412 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

Ingredients of unknown toxicity : 2-AB solution Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10%
Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10%














See Section 16 for the full text of the H statements declared above.

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

Date of issue/Date of revision : 22/10/2018

SECTION 2: Hazards identification

2.2 Label elements

Hazard pictograms	:  Reductant solution	   
	2-AB solution	 
Signal word	:  Reductant solution 2-AB solution	Danger Danger
Hazard statements	:  Reductant solution 2-AB solution	H300 + H330 - Fatal if swallowed or if inhaled. H311 - Toxic in contact with skin. H314 - Causes severe skin burns and eye damage. H411 - Toxic to aquatic life with long lasting effects. H314 - Causes severe skin burns and eye damage. H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements		
Prevention	:  Reductant solution 2-AB solution	P280 - Wear protective gloves. Wear protective clothing. Wear eye or face protection. P273 - Avoid release to the environment. P260 - Do not breathe vapour. P280 - Wear protective gloves. Wear protective clothing. Wear eye or face protection. P273 - Avoid release to the environment.
Response	:  Reductant solution 2-AB solution	P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. P303 + P361 + P353 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or physician. P305 + P310 - IF IN EYES: Immediately call a POISON CENTER or physician. P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. P303 + P361 + P353 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or physician. P305 + P310 - IF IN EYES: Immediately call a POISON CENTER or physician.
Storage	:  Reductant solution 2-AB solution	P405 - Store locked up. P405 - Store locked up.
Disposal	:  Reductant solution 2-AB solution	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazardous ingredients	: Reductant solution 2-AB solution	- sodium cyanotrihydroborate - acetic acid - anthranilamide

AdvanceBio 2-AB glycan labeling kit (96 samples), Part Number 5190-8008

SECTION 2: Hazards identification

Supplemental label elements : Reductant solution 2-AB solution Not applicable.
Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Reductant solution 2-AB solution Not applicable.
Not applicable.

Special packaging requirements

Tactile warning of danger : Reductant solution 2-AB solution Not applicable.
Not applicable.

2.3 Other hazards

Other hazards which do not result in classification : Reductant solution 2-AB solution Causes digestive tract burns.
Causes digestive tract burns.

SECTION 3: Composition/information on ingredients

3.1 Substances : Reductant solution 2-AB solution Mixture
Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
<input checked="" type="checkbox"/> Reductant solution Dimethyl sulfoxide	EC: 200-664-3 CAS: 67-68-5	≥75 - ≤90	Aquatic Chronic 3, H412	[1]
sodium cyanotrihydroborate	EC: 247-317-2 CAS: 25895-60-7	≥10 - <25	Flam. Sol. 1, H228 Acute Tox. 2, H300 Acute Tox. 2, H310 Acute Tox. 2, H330 Skin Corr. 1B, H314 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1) EUH032	[1]
2-AB solution Dimethyl sulfoxide	EC: 200-664-3 CAS: 67-68-5	≥50 - ≤75	Aquatic Chronic 3, H412	[1]
acetic acid	EC: 200-580-7 CAS: 64-19-7 Index: 607-002-00-6	≥25 - ≤50	Flam. Liq. 3, H226 Skin Corr. 1A, H314	[1] [2]
anthranilamide	EC: 201-851-2 CAS: 88-68-6	≥10 - <25	Acute Tox. 4, H302 Eye Dam. 1, H318 See Section 16 for the full text of the H statements declared above.	[1]

There are no 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.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	: Reductant solution	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
	2-AB solution	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
Inhalation	: Reductant solution	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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-to-mouth 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 waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	2-AB solution	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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-to-mouth 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 waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Skin contact	: Reductant solution	Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	2-AB solution	Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

SECTION 4: First aid measures

Ingestion	: Reductant solution	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Chemical burns must be treated promptly by a physician. 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.
	2-AB solution	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Chemical burns must be treated promptly by a physician. 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.
Protection of first-aiders	: Reductant solution	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 it, or wear gloves.
	2-AB solution	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 it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact	: Reductant solution	Causes serious eye damage.
	2-AB solution	Causes serious eye damage.
Inhalation	: Reductant solution	Fatal if inhaled.
	2-AB solution	No known significant effects or critical hazards.
Skin contact	: Reductant solution	Causes severe burns. Toxic in contact with skin.
	2-AB solution	Causes severe burns.
Ingestion	: Reductant solution	Fatal if swallowed. Corrosive to the digestive tract. Causes burns.
	2-AB solution	Corrosive to the digestive tract. Causes burns.

Over-exposure signs/symptoms

SECTION 4: First aid measures

Eye contact	: Reductant solution	Adverse symptoms may include the following: pain watering redness
	2-AB solution	Adverse symptoms may include the following: pain watering redness
Inhalation	: Reductant solution	No specific data.
	2-AB solution	No specific data.
Skin contact	: Reductant solution	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	2-AB solution	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion	: Reductant solution	Adverse symptoms may include the following: stomach pains
	2-AB solution	Adverse symptoms may include the following: stomach pains

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	: Reductant solution	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	2-AB solution	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	: Reductant solution	No specific treatment.
	2-AB solution	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	: Reductant solution	Use an extinguishing agent suitable for the surrounding fire.
	2-AB solution	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: Reductant solution	None known.
	2-AB solution	None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	: Reductant solution	In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
	2-AB solution	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

SECTION 5: Firefighting measures

Hazardous combustion products	: Reductant solution	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides metal oxide/oxides
	2-AB solution	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides

5.3 Advice for firefighters

Special precautions for fire-fighters	: Reductant solution	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 training.
	2-AB solution	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 training.
Special protective equipment for fire-fighters	: Reductant solution	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	2-AB solution	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: Reductant solution	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 spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	2-AB solution	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 spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	: Reductant solution	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	2-AB solution	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

AdvanceBio 2-AB glycan labeling kit (96 samples), Part Number 5190-8008

SECTION 6: Accidental release measures

6.2 Environmental precautions	: Reductant solution	Avoid dispersal of spilt 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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
	2-AB solution	Avoid dispersal of spilt 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). Water polluting material. May be harmful to the environment if released in large quantities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	: Reductant solution	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	2-AB solution	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections	: See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.
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SECTION 7: Handling and storage


7.1 Precautions for safe handling

Protective measures	: Reductant solution	Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. 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 container.
	2-AB solution	Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. 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 container.
Advice on general occupational hygiene	: Reductant solution	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. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
	2-AB solution	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,

SECTION 7: Handling and storage


drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Storage	:  Reductant solution	Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). 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. Store locked up. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	2-AB solution	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. Store locked up. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Seveso Directive - Reporting thresholds (in tonnes)

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
 Reductant solution		
H2	50	200
E2	200	500


7.3 Specific end use(s)

Recommendations	: Reductant solution 2-AB solution	Industrial applications, Professional applications. Industrial applications, Professional applications.
Industrial sector specific solutions	: Reductant solution 2-AB solution	Not applicable. Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
 2-AB solution acetic acid	EU OEL (Europe, 2/2017). Notes: list of indicative occupational exposure limit values STEL: 20 ppm 15 minutes. STEL: 50 mg/m ³ 15 minutes.

SECTION 8: Exposure controls/personal protection

Recommended monitoring procedures : 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. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls : 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.

Individual protection measures

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.

Eye/face protection : 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. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : 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 necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body 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 this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: Reductant solution 2-AB solution	Liquid. Liquid.
Colour	: Reductant solution 2-AB solution	Colourless. Liquid. Clear.
Odour	: Reductant solution 2-AB solution	Not available. Not available.
Odour threshold	: Reductant solution 2-AB solution	Not available. Not available.
pH	: Reductant solution 2-AB solution	7.5 8.8
Melting point/freezing point	: Reductant solution 2-AB solution	Not available. Not available.
Initial boiling point and boiling range	: Reductant solution 2-AB solution	Not available. Not available.
Flash point	: Reductant solution 2-AB solution	Not available. Closed cup: >93.3°C
Evaporation rate	: Reductant solution 2-AB solution	Not available. Not available.
Flammability (solid, gas)	: Reductant solution 2-AB solution	Not applicable. Not applicable.
Upper/lower flammability or explosive limits	: Reductant solution 2-AB solution	Not available. Not available.
Vapour pressure	: Reductant solution 2-AB solution	Not available. Not available.
Vapour density	: Reductant solution 2-AB solution	Not available. Not available.
Relative density	: Reductant solution 2-AB solution	Not available. Not available.
Solubility(ies)	: Reductant solution 2-AB solution	Soluble in the following materials: cold water and hot water. Soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: Reductant solution 2-AB solution	Not available. Not available.
Auto-ignition temperature	: Reductant solution 2-AB solution	Not available. Not available.
Decomposition temperature	: Reductant solution 2-AB solution	Not available. Not available.
Viscosity	: Reductant solution 2-AB solution	Not available. Not available.
Explosive properties	: Reductant solution 2-AB solution	Not available. Not available.
Oxidising properties	: Reductant solution 2-AB solution	Not available. Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: Reductant solution 2-AB solution	No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: Reductant solution 2-AB solution	The product is stable. The product is stable.
10.3 Possibility of hazardous reactions	: Reductant solution 2-AB solution	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: Reductant solution 2-AB solution	No specific data. No specific data.
10.5 Incompatible materials	: Reductant solution 2-AB solution	May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials.
10.6 Hazardous decomposition products	: Reductant solution 2-AB solution	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Reductant solution Dimethyl sulfoxide	LD50 Dermal	Rat	40000 mg/kg	-
	LD50 Oral	Rat	14500 mg/kg	-
2-AB solution Dimethyl sulfoxide acetic acid	LD50 Dermal	Rat	40000 mg/kg	-
	LD50 Oral	Rat	14500 mg/kg	-
	LC50 Inhalation Vapour	Rat	11000 mg/m ³	4 hours
	LD50 Dermal	Rabbit	1060 mg/kg	-
	LD50 Oral	Rat	3310 mg/kg	-

Acute toxicity estimates

Route	ATE value
Reductant solution Oral Dermal Inhalation (dusts and mists)	25 mg/kg 250 mg/kg 0.25 mg/l
2-AB solution Oral	5000 mg/kg

Irritation/Corrosion

AdvanceBio 2-AB glycan labeling kit (96 samples), Part Number 5190-8008

SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Reductant solution Dimethyl sulfoxide	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	100 milligrams	-
2-AB solution Dimethyl sulfoxide	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	100 milligrams	-
acetic acid	Skin - Severe irritant	Rabbit	-	525 milligrams	-

Sensitiser

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Reductant solution
2-AB solution

Routes of entry anticipated: Oral, Dermal, Inhalation.
Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation : Reductant solution
2-AB solution

Fatal if inhaled.
No known significant effects or critical hazards.

Ingestion : Reductant solution
2-AB solution

Fatal if swallowed. Corrosive to the digestive tract. Causes burns.
Corrosive to the digestive tract. Causes burns.

Skin contact : Reductant solution
2-AB solution

Causes severe burns. Toxic in contact with skin.
Causes severe burns.

Eye contact : Reductant solution
2-AB solution

Causes serious eye damage.
Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics

SECTION 11: Toxicological information

Inhalation	: Reductant solution 2-AB solution	No specific data. No specific data.
Ingestion	: Reductant solution 2-AB solution	Adverse symptoms may include the following: stomach pains Adverse symptoms may include the following: stomach pains
Skin contact	: Reductant solution 2-AB solution	Adverse symptoms may include the following: pain or irritation redness blistering may occur Adverse symptoms may include the following: pain or irritation redness blistering may occur
Eye contact	: Reductant solution 2-AB solution	Adverse symptoms may include the following: pain watering redness Adverse symptoms may include the following: pain watering redness

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	: Reductant solution 2-AB solution	No known significant effects or critical hazards. No known significant effects or critical hazards.
Carcinogenicity	: Reductant solution 2-AB solution	No known significant effects or critical hazards. No known significant effects or critical hazards.
Mutagenicity	: Reductant solution 2-AB solution	No known significant effects or critical hazards. No known significant effects or critical hazards.
Teratogenicity	: Reductant solution 2-AB solution	No known significant effects or critical hazards. No known significant effects or critical hazards.
Developmental effects	: Reductant solution 2-AB solution	No known significant effects or critical hazards. No known significant effects or critical hazards.
Fertility effects	: Reductant solution 2-AB solution	No known significant effects or critical hazards. No known significant effects or critical hazards.
Other information	: Reductant solution 2-AB solution	Not available. Not available.

AdvanceBio 2-AB glycan labeling kit (96 samples), Part Number 5190-8008

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Reductant solution Dimethyl sulfoxide	Acute EC50 18299 µg/l Marine water Acute LC50 37.437 mg/l Marine water Acute LC50 25000 ppm Fresh water	Algae - Nitzschia pungens Crustaceans - Artemia sp. Daphnia - Daphnia magna - Neonate	96 hours 48 hours 48 hours
	Acute LC50 34000000 µg/l Fresh water Chronic NOEC 3323 µg/l Marine water	Fish - Pimephales promelas Algae - Nitzschia pungens	96 hours 96 hours
2-AB solution Dimethyl sulfoxide	Acute EC50 18299 µg/l Marine water Acute LC50 37.437 mg/l Marine water Acute LC50 25000 ppm Fresh water	Algae - Nitzschia pungens Crustaceans - Artemia sp. Daphnia - Daphnia magna - Neonate	96 hours 48 hours 48 hours
	Acute LC50 34000000 µg/l Fresh water Chronic NOEC 3323 µg/l Marine water	Fish - Pimephales promelas Algae - Nitzschia pungens	96 hours 96 hours
acetic acid	Acute EC50 73400 µg/l Fresh water Acute EC50 65000 µg/l Fresh water	Algae - Navicula seminulum Daphnia - Daphnia magna - Neonate	96 hours 48 hours
	Acute LC50 32 mg/l Marine water Acute LC50 75000 µg/l Fresh water Acute LC50 395000 µg/l Fresh water	Crustaceans - Artemia salina Fish - Lepomis macrochirus Fish - Pimephales promelas	48 hours 96 hours 96 hours

12.2 Persistence and degradability

Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
2-AB solution acetic acid	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Reductant solution Dimethyl sulfoxide	-1.35	3.16	low
2-AB solution Dimethyl sulfoxide	-1.35	3.16	low
acetic acid	-0.17	3.16	low
anthranilamide	0.35	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

AdvanceBio 2-AB glycan labeling kit (96 samples), Part Number 5190-8008

SECTION 15: Regulatory information

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

Category

Reductant solution

H2

E2

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

- Australia** : Not determined.
- Canada** : At least one component is not listed in DSL but all such components are listed in NDSL.
- China** : All components are listed or exempted.
- Europe** : All components are listed or exempted.
- Japan** : **Japan inventory (ENCS)**: Not determined.
Japan inventory (ISHL): All components are listed or exempted.
- Malaysia** : Not determined.
- New Zealand** : All components are listed or exempted.
- Philippines** : All components are listed or exempted.
- Republic of Korea** : All components are listed or exempted.
- Taiwan** : All components are listed or exempted.
- Thailand** : Not determined.
- Turkey** : Not determined.
- United States** : All components are listed or exempted.
- Viet Nam** : Not determined.

15.2 Chemical safety assessment

- : This product contains substances for which Chemical Safety Assessments might still be required.

AdvanceBio 2-AB glycan labeling kit (96 samples), Part Number 5190-8008

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms

: ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Reductant solution Acute Tox. 2, H300 Acute Tox. 3, H311 Acute Tox. 2, H330 Skin Corr. 1B, H314 Aquatic Chronic 2, H411	Calculation method Calculation method Calculation method Calculation method Calculation method
2-AB solution Skin Corr. 1B, H314 Aquatic Chronic 3, H412	Calculation method Calculation method

Full text of abbreviated H statements

Reductant solution H228 H300 H310 H311 H314 H330 H400 H410 H411 H412	Flammable solid. Fatal if swallowed. Fatal in contact with skin. Toxic in contact with skin. Causes severe skin burns and eye damage. Fatal if inhaled. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. Toxic to aquatic life with long lasting effects. Harmful to aquatic life with long lasting effects.
2-AB solution H226 H302 H314 H318 H412	Flammable liquid and vapour. Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. Harmful to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

Reductant solution Acute Tox. 2, H300 Acute Tox. 2, H310 Acute Tox. 2, H330 Acute Tox. 3, H311 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Aquatic Chronic 2, H411 Aquatic Chronic 3, H412 EUH032 Flam. Sol. 1, H228 Skin Corr. 1B, H314	ACUTE TOXICITY (oral) - Category 2 ACUTE TOXICITY (dermal) - Category 2 ACUTE TOXICITY (inhalation) - Category 2 ACUTE TOXICITY (dermal) - Category 3 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3 Contact with acids liberates very toxic gas. FLAMMABLE SOLIDS - Category 1 SKIN CORROSION/IRRITATION - Category 1B
2-AB solution Acute Tox. 4, H302 Aquatic Chronic 3, H412 Eye Dam. 1, H318 Flam. Liq. 3, H226	ACUTE TOXICITY (oral) - Category 4 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 FLAMMABLE LIQUIDS - Category 3

Date of issue/Date of revision : 22/10/2018

AdvanceBio 2-AB glycan labeling kit (96 samples), Part Number 5190-8008

SECTION 16: Other information

Skin Corr. 1A, H314	SKIN CORROSION/IRRITATION - Category 1A
Skin Corr. 1B, H314	SKIN CORROSION/IRRITATION - Category 1B

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