

• SAFETY DATA SHEET

Version 6.19
Revision Date 11/27/2025
Print Date 11/28/2025

SECTION 1. IDENTIFICATION

1.1 Product identifiers

Product name : α -Naphthyl Butyrate Esterase, Lymphocyte

Product Number : 181B

Brand : Sigma

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

Identified uses : Laboratory chemicals, Synthesis of substances

Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765

Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

This is a summary SDS for a kit. For the full SDS for each of the components listed in section 16 please visit our website.

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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards for the product as supplied

Flammable liquids	: Category 3
Oxidizing liquids	: Category 3
Corrosive to metals	: Category 1
Acute toxicity (Oral)	: Category 3
Acute toxicity (Inhalation)	: Category 4
Acute toxicity (Dermal)	: Category 4
Skin irritation	: Category 2
Eye irritation	: Category 2A
Carcinogenicity	: Category 1B
Specific target organ toxicity - single exposure	: Category 1 (Eyes, Central nervous system)
Specific target organ toxicity - single exposure	: Category 3 (Respiratory system)
Short-term (acute) aquatic hazard	: Category 1

Other hazards

None known.

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H226 Flammable liquid and vapour.
H272 May intensify fire; oxidizer.
H290 May be corrosive to metals.
H301 Toxic if swallowed.
H312 + H332 Harmful in contact with skin or if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

H335 May cause respiratory irritation.
H350 May cause cancer.
H370 Causes damage to organs (Eyes, Central nervous system).
H400 Very toxic to aquatic life.

Precautionary statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220 Keep away from clothing and other combustible materials.
P233 Keep container tightly closed.
P234 Keep only in original packaging.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

P390 Absorb spillage to prevent material damage.
P391 Collect spillage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P406 Store in a corrosion resistant container with a resistant inner liner.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Refer to component SDS

SECTION 4. FIRST AID MEASURES

Refer to component SDS

SECTION 5. FIREFIGHTING MEASURES

Refer to component SDS

SECTION 6. ACCIDENTAL RELEASE MEASURES

Refer to component SDS

SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

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|---|---|--|
| Advice on protection against fire and explosion | : | Keep away from open flames, hot surfaces and sources of ignition.
Take precautionary measures against static discharge. |
| Advice on safe handling | : | Work under hood. Do not inhale substance/mixture.
Avoid generation of vapours/aerosols. |
| Conditions for safe storage | : | Keep container tightly closed in a dry and well-ventilated place.

No metal containers. |
| Further information on storage conditions | : | Tightly closed.
Away from combustible materials and sources of ignition and heat. |

Keep locked up or in an area accessible only to qualified or authorised persons.
Do not store near combustible materials.

Storage class : 5.1B, Oxidizing hazardous materials

Recommended storage temperature : 36 - 46 °F / 2 - 8 °C

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Refer to component SDS

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Refer to component SDS

SECTION 10. STABILITY AND REACTIVITY

Refer to component SDS

SECTION 11. TOXICOLOGICAL INFORMATION

Refer to component SDS

SECTION 12. ECOLOGICAL INFORMATION

Refer to component SDS

SECTION 13. DISPOSAL CONSIDERATIONS

Refer to component SDS

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No. : UN 3316
Proper shipping name : Chemical kit
Class : 9
Packing group : II
Labels : Class 9 - Miscellaneous dangerous substances and articles
Packing instruction (cargo aircraft) : 960
Packing instruction (passenger aircraft) : 960

IMDG-Code

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UN number : UN 3316
Proper shipping name : CHEMICAL KIT

Class : 9
Packing group : II
Labels : 9
EmS Code : F-A, S-P
Marine pollutant : no

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

National Regulations

49 CFR Road

UN/ID/NA number : UN 3316
Proper shipping name : Chemical kits

Class : 9
Packing group : II
Labels : Class 9 - Miscellaneous dangerous substances and articles
ERG Code : 171
Marine pollutant : no

Poison Inhalation Hazard : No

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SECTION 16. OTHER INFORMATION

Kit Components:

Citrate Solution	Sigma	915
Pararosaniline solution	Sigma	1804
Phosphate buffer	Sigma	1805
Methylene Blue solution	Sigma-Aldrich	1808
Sodium nitrite	Sigma	1809
α -Naphthyl Butyrate solution	Sigma	1801

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); EC_x - Concentration associated with x% response; EHS - Extremely Hazardous Substance; EL_x - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErC_x - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC₅₀ - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC₅₀ - Lethal Concentration to 50 % of a test population; LD₅₀ - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact mlsbranding@sial.com.

US / EN

Kit Components:

Citrate Solution					
Product identifier	Pictogram	Signal word	Hazard statements	Precautionary statements	Supplemental information
Sigma - 915					No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

Pararosaniline solution					
Product identifier	Pictogram	Signal word	Hazard statements	Precautionary statements	Supplemental information
Sigma - 1804		Danger	<p>May be corrosive to metals.</p> <p>Causes skin irritation.</p> <p>Causes serious eye irritation.</p> <p>May cause respiratory irritation.</p> <p>May cause cancer.</p>	<p>Obtain special instructions before use. IF ON SKIN: Wash with plenty of water. Store in a well-ventilated place. Keep container tightly closed. Dispose of contents/ container to an approved waste disposal plant. Do not handle until all safety precautions have been read and understood. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel</p>	

				<p>unwell. Store locked up. Keep only in original packaging. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Store in a corrosion resistant container with a resistant inner liner. Avoid breathing mist or vapours. IF exposed or concerned: Get medical advice/attention. Wash skin thoroughly after handling. If skin irritation occurs: Get medical advice/attention. Use only outdoors or in a well-ventilated area. If eye irritation persists: Get medical advice/attention. Wear protective gloves/ protective clothing/ eye protection/ face protection. Absorb spillage to prevent material damage.</p>	
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Phosphate buffer					
Product identifier	Pictogram	Signal word	Hazard statements	Precautionary statements	Supplemental information
Sigma - 1805					No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

Methylene Blue solution					
Product identifier	Pictogram	Signal word	Hazard statements	Precautionary statements	Supplemental information
Sigma-Aldrich - 1808		Danger	Highly flammable liquid and vapour. Causes serious eye irritation.	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Store in a well-ventilated place. Keep cool. Dispose of contents/container to an approved waste disposal plant. Keep container tightly closed. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Ground and bond container	

				<p>and receiving equipment. If eye irritation persists: Get medical advice/ attention. Use explosion-proof electrical/ ventilating/ lighting equipment. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. Use non-sparking tools. Take action to prevent static discharges. Wash skin thoroughly after handling. Wear protective gloves/ protective clothing/ eye protection/ face protection.</p>	
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Sodium nitrite					
Product identifier	Pictogram	Signal word	Hazard statements	Precautionary statements	Supplemental information
Sigma - 1809		Danger	<p>May intensify fire; oxidizer. Toxic if swallowed. Causes serious eye irritation. Very toxic to aquatic life.</p>	<p>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth. Store locked up. Dispose of contents/ container to an</p>	

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				<p>approved waste disposal plant. Keep away from clothing and other combustible materials. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Wash skin thoroughly after handling. If eye irritation persists: Get medical advice/ attention. Do not eat, drink or smoke when using this product. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. Avoid release to the environment. Collect spillage. Wear protective gloves/ protective clothing/ eye protection/ face protection.</p>	
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α -Naphthyl Butyrate solution

Product identifier	Pictogram	Signal word	Hazard statements	Precautionary statements	Supplemental information
Sigma - 1801		Danger	<p>Flammable liquid and vapour. Harmful if swallowed, in</p>	<p>Keep away from heat, hot surfaces, sparks, open flames and</p>	

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			<p>contact with skin or if inhaled. Causes damage to organs (Eyes, Central nervous system).</p>	<p>other ignition sources. No smoking. IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth. Store in a well-ventilated place. Keep cool. Dispose of contents/ container to an approved waste disposal plant. Keep container tightly closed. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. Store locked up. Ground and bond container and receiving equipment. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell. Use explosion-proof electrical/ ventilating/ lighting equipment. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. Use non-</p>	
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				<p>sparkling tools. Take action to prevent static discharges. Do not breathe mist or vapours. Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/ protective clothing/ eye protection/ face protection.</p>	
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