



Revie	wed on 03/17/2010
1 Identification	
Product identifier	
Product name: Di-tert-butyl N,N-diethylphosphoramidite	
Stock number: H27380 CAS Number: 117924-33-1	
Relevant identified uses of the substance or mixture and uses advised against. Identified use: SU24 Scientific research and development	
Details of the supplier of the safety data sheet Manufacturer/Supplier:	
Alfa Aesar Thermo Fisher Scientific Chemicals, Inc.	
30 Bond Street Ward Hill, MA 01835-8099	
Tel: 800-343-0660 Fax: 800-32 <u>2</u> -4 <u>7</u> 57	
Email: tech@alfa.com www.alfa.com	
Information Department: Health, Safety and Environmental Department Emergency telephone number:	
During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928	·0789.
2 Hazard(s) identification	
Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)	
GHS07	
Skin Irrit. 2 H315 Causes skin irritation.	
Eye Irrit. 2A H319 Causes serious eye irritation. H227 Combustible liquid.	
Hazards not otherwise classified No information known. Label elements	
GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) Hazard pictograms	
GHS07	
Signal word Warning	
Hazard statements	
H315 Causes skin irritation. H319 Causes serious eye irritation.	
Precautionary statements P280 Wear protective gloves.	
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsir WHMIS classification	ıg.
B3 - Combustible liquid D2B - Toxic material causing other toxic effects	
Classification system HMIS ratings (scale 0-4)	
(Hazardouš Materials Identification System)	
HEALTH I Health (acute effects) = 1 RE 2 Flammability = 2 REALTH I Device Heard = 1	
REACTIVITY []       Physical Házard = 1         Other hazards	
Results of PBT and vPvB assessment PBT: Not applicable.	
vPvB: Not applicable.	
3 Composition/information on ingredients	
Chemical characterization: Substances CAS# Description:	
117924-33-1 Di-tert-butyl N,N-diethylphosphoramidite	
4 First-aid measures	
Description of first aid measures After inhalation	
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.	
After skin contact Immediately wash with water and soap and rinse thoroughly.	
Seek immédiate medical advice. After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.	
After swallowing Seek medical treatment. Information for doctor	
Most important symptoms and effects, both acute and delayed No further relevant information available.	(Contd. on page 2)
	USA -

(Contd. of page 1)

## Product name: Di-tert-butyl N,N-diethylphosphoramidite

Indication of any immediate medical attention and special treatment needed No further relevant information available.

## 5 Fire-fighting measures

Extinguishing media Suitable extinguishing agents CO2, sand, extinguishing powder. Do not use water. Special hazards arising from the substance or mixture If this product is involved in a fire, the following can be released: Carbon monoxide and carbon dióxide Nitrogen oxides (NOx) Possibly Hydrogen cyanide (HCN) Phosphorus oxides Advice for firefighters Protective equipment: Wear self-contained respirator. Wear fully protective impervious suit.

## 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation

Environmental precautions: Do not allow material to be released to the environment without proper governmental permits. Methods and material for containment and cleaning up: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Prevention of secondary hazards: Keep away from ignition sources.

Reference to other sections See Section 7 for information on safe handling See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

## 7 Handling and storage

Handling Precautions for safe handling Handle under dry protective gas. Keep container tightly sealed. Ensure good ventilation at the workplace. Information about protection against explosions and fires: Keep ignition sources away. Conditions for safe storage, including any incompatibilities Storage Requirements to be met by storerooms and receptacles: Refrigerate Information about storage in one common storage facility: Store away from oxidizing agents. Protect from heat. Store away from water/moisture. Store under dry inert gas. This product is moisture sensitive. Keep container tightly sealed. Protect from humidity and water. Refrigerate Specific end use(s) No further relevant information available. 8 Exposure controls/personal protection Additional information about design of technical systems: Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute. Control parameters Components with limit values that require monitoring at the workplace: Not required. Additional information: No data Exposure controls Personal protective equipment General protective and hygienic measures The usual precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin. Maintain an ergonomically appropriate working environment. **Breathing equipment**: **Breathing equipment:** Use suitable respirator when high concentrations are present. Use suitable respiratory protective device in case of insufficient ventilation. Protection of hands: Impervious gloves Check protective gloves prior to each use for their proper condition. The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer. **Penetration time of glove material (in minutes)** Not determined **Eye protection:** Safety glasses **Body protection:** Protective work clothing. 9 Physical and chemical properties Information on basic physical and chemical properties General Information Appearance: Liquid Color: Colorless Odor: Not determined Odor threshold: Not determined pH-value: Not determined Change in condition Melting point/Melting range: Not determined

# Product name: Di-tert-butyl N.N-diethylphosphoramidite

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Specific target organ system toxicity - single exposure: No effects known. Aspiration hazard: No effects known. Subacute to chronic toxicity: Inorganic phosphorus compounds may cause irritation and hemorrhages in the stomach as well as liver and kidney damage. Bone structure may be attacked, especially the jaw and teeth. Subacute to chronic toxicity: No effects known. Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Ecological information Toxicity Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant information available. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Mobility in soil No further relevant information available. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Reneral notes: Do not allow material to be released to the environment without proper governmental permits. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. Results of PBT and vPvB assessment PBT: Not applicable. Other adverse effects No further relevant information available. Disposal considerations Waste treatment methods Recommendation: Disposal must be made according to official regulations. Transport information Transport information	Specific target organ system toxicity	<b>v - repeated exposure:</b> No effects known	
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## Product name: Di-tert-butyl N,N-diethylphosphoramidite

	(Contd. of page 3)		
UN-Number DOT, IMDG, IATA	None		
UN proper shipping name DOT, IMDG, IATA	None		
Transport hazard class(es)			
DOT, ADR, IMDG, IATA Class	None		
Packing group DOT, IMDG, IATA	None		
Environmental hazards:	Not applicable.		
Special precautions for user	Not applicable.		
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.			
Transport/Additional information:	Not dangerous according to the above specifications.		
DOT Marine Pollutant (DOT):	No		

### 15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) Hazard pictograms



Signal word Warning Hazard statements

H227 Combustible liquid. H217 Couses skin irritation. H319 Causes serious eye irritation. Precautionary statements Woor extractive.

P280 Wear protective gloves. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 National regulations
 This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only. This product must be used by or directly under the supervision of a technically qualified individual as defined by TSCA. This product must not be used for commercial purposes or in formulations for commercial purposes.
 SARA Section 313 (specific toxic chemical listings) Substance is not listed.
 California Proposition 65
 Prop 65 - Chemicals known to cause cancer Substance is not listed.
 Prop 65 - Developmental toxicity, female Substance is not listed.
 Prop 65 - Developmental toxicity, female Substance is not listed.
 Prop 65 - Developmental toxicity, male Substance is not listed.
 Prop 65 - Developmental toxicity, male Substance is not listed.
 Prop 65 - Developmental toxicity, male Substance is not listed.
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 Prop 65 - Developmen

market and use must be observed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed. Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

### 16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department
Date of preparation / last revision 11/24/2015 / Abbreviations and acronyms:

RD: Réglement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO: Thermational Air Transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: Thermational Air Transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (ICAO)
IMDG: International Air Transport des for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Information System (ICAn)
ICGO: Lethal Concentration, 50 percent
VPUB very Persistent and very Bioaccumulative
ACGIH: American Chiefernece of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
IATE: National Toxicology Program (USA)
IATE: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)

USA