

# • SAFETY DATA SHEET

Version 6.12  
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## SECTION 1. IDENTIFICATION

### 1.1 Product identifiers

Product name : *tert*-Butylamine

Product Number : 391433  
Brand : Aldrich  
CAS-No. : 75-64-9

### 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

## 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 2

Acute toxicity (Oral)	: Category 4
Acute toxicity (Inhalation)	: Category 3
Skin corrosion	: Category 1A
Serious eye damage	: Category 1
Short-term (acute) aquatic hazard	: Category 3
Long-term (chronic) aquatic hazard	: Category 3

### **Other hazards**

None known.

### **GHS label elements**

Hazard pictograms	: 
Signal word	: Danger
Hazard statements	: <p>H225 Highly flammable liquid and vapour.          H302 Harmful if swallowed.          H314 Causes severe skin burns and eye damage.          H331 Toxic if inhaled.          H412 Harmful to aquatic life with long lasting effects.</p>
Precautionary statements	: <p><b>Prevention:</b></p> <p>P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.          P233 Keep container tightly closed.          P240 Ground/bond container and receiving equipment.          P241 Use explosion-proof electrical/ ventilating/ lighting equipment.          P242 Use only non-sparking tools.          P243 Take precautionary measures against static discharge.          P261 Avoid breathing 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.</p>

**Response:**

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
Immediately call a POISON CENTER/ doctor.  
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.  
P363 Wash contaminated clothing before reuse.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

**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.

**Disposal:**

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

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Substance

CAS-No. : 75-64-9

**Components**

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
tert.-butylamine	75-64-9*	>= 90 - <= 100	-

\* Indicates that the identifier is a CAS No.

Actual concentration is withheld as a trade secret

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**SECTION 4. FIRST AID MEASURES**

General advice : First aiders need to protect themselves.  
Show this safety data sheet to the doctor in

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	attendance.
If inhaled	<p>: After inhalation: fresh air. Immediately call in physician.</p> <p>If breathing stops: immediately apply artificial respiration, if necessary also oxygen.</p>
In case of skin contact	<p>: In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.</p>
In case of eye contact	<p>: After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.</p>
If swallowed	<p>: After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately.</p> <p>Do not attempt to neutralise.</p>
Most important symptoms and effects, both acute and delayed	<p>: The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11</p>
Protection of first-aiders	<p>: For personal protection see section 8.</p>
Notes to physician	<p>: No data available</p>

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## SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	<p>: Carbon dioxide (CO2)</p> <p>Foam</p> <p>Dry powder</p>
Unsuitable extinguishing media	<p>: For this substance/mixture no limitations of extinguishing agents are given.</p>
Specific hazards during fire fighting	<p>: Combustible.</p>

Pay attention to flashback.

Vapours are heavier than air and may spread along floors.

Development of hazardous combustion gases or

vapours possible in the event of fire.

Forms explosive mixtures with air at ambient temperatures.

Hazardous combustion products	: Carbon oxides  Nitrogen oxides (NOx)
Specific extinguishing methods	: No data available
Further information	: Remove container from danger zone and cool with water. Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for fire-fighters	: Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: For personal protection see section 8.
Environmental precautions	: Do not let product enter drains. Risk of explosion.
Methods and materials for containment and cleaning up	: Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

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## SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

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.
Further information on storage conditions	: Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorised persons.
Storage class	: 3, Flammable liquids
Recommended storage temperature	: Recommended storage temperature see product label.
Further information on storage stability	: Handle and store under inert gas.

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

**Engineering measures** : No data available

### Personal protective equipment

Respiratory protection : required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: : Filter type AX

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Hand protection	
Material	: Viton®
Break through time	: 60 min
Glove thickness	: 0.7 mm
Protective index	: Splash contact
Manufacturer	: Vitoject® (KCL 890 / Aldrich Z677698, Size M)
Remarks	: This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: <a href="http://www.kcl.de">www.kcl.de</a> ).
Eye protection	: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles
Skin and body protection	: Flame retardant antistatic protective clothing.
Hygiene measures	: Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid (68 °F / 20 °C, 1,013 hPa)
Color	: colourless
Odor	: No data available
Odor Threshold	: 0.24 ppm
pH	: 12.1 (77 °F / 25 °C) Concentration: 100 g/l
Melting point/ range	: -89 °F / -67 °C Method: lit.
Boiling point/boiling range	: 115 °F / 46 °C Method: lit.
Flash point	: -36 °F / -38 °C (1,013 hPa) Method: closed cup

Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Flammability (liquids)	: No data available
Burning rate	: No data available
Self-ignition	: 716 °F / 380 °C 1,013 hPa
Upper explosion limit / Upper flammability limit	: 9.8 %(V)
Lower explosion limit / Lower flammability limit	: 1.7 %(V)
Vapor pressure	: 392.9 hPa (68 °F / 20 °C)
Relative vapour density	: 2.53 (Air = 1.0)
Relative density	: No data available
Density	: 0.696 g/cm3 (77 °F / 25 °C) Method: lit.
Solubility(ies)	
Water solubility	: 1,000 g/l (77 °F / 25 °C)
Partition coefficient: n-octanol/water	: log Pow: 0.4 (77 °F / 25 °C) Bioaccumulation is not expected.
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Flow time	: No data available
Explosive properties	: No data available
Oxidizing properties	: none
Molecular weight	: 73.14 g/mol

#### Particle characteristics

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Particle size : No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity : Vapours may form explosive mixture with air.

Chemical stability : The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions : Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines!  
Violent reactions possible with:  
anhydrides  
Oxidizing agents  
Nitriles  
phenols  
polymerisable substances  
acids

Conditions to avoid : Warming.

Incompatible materials : Copper  
Zinc  
zinc alloys  
Tin

Hazardous decomposition : In the event of fire: see section 5 products

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### **Acute toxicity**

LD50 Oral - Rat - male and female - 464 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - male - 4 h - 3.8 mg/l - vapour

Remarks: (ECHA)

Dermal: No data available

#### **Skin corrosion/irritation**

Skin - Rabbit

Result: Corrosive after 3 minutes or less of exposure - 3 min

(OECD Test Guideline 404)

#### **Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Risk of serious damage to eyes.

Remarks: (ECHA)

Remarks: Causes serious eye damage.

## **Respiratory or skin sensitization**

No data available

## **Germ cell mutagenicity**

Test Type: Ames test

Test system: *Salmonella typhimurium*

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (ECHA)

## **Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

## **Reproductive toxicity**

No data available

## **Specific target organ toxicity - single exposure**

No data available

## **Specific target organ toxicity - repeated exposure**

No data available

## **Aspiration hazard**

No data available

## **11.2 Additional Information**

RTECS: EO3330000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Systemic effects:

narcosis

Damage to:

Kidney

Under given conditions, contact with nitrites or nitric acid can lead to the formation of nitrosamines, which have shown themselves to be carcinogenic in animal experiments.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. ECOLOGICAL INFORMATION

### **Ecotoxicity**

#### **Components:**

##### **tert.-butylamine:**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 28 mg/l End point: mortality Exposure time: 96 h Test Type: static test Analytical monitoring: yes Remarks: (ECHA)
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata): 16 mg/l Exposure time: 96 h Test Type: static test Analytical monitoring: yes Method: US-EPA

### **Persistence and degradability**

#### **Components:**

##### **tert.-butylamine:**

Biodegradability	:	aerobic Concentration: 100 mg/l Result: Not biodegradable Biodegradation: 0 % Exposure time: 28 d Method: OECD Test Guideline 301C
BOD/ThOD	:	< 10 % Remarks: (External MSDS)

### **Bioaccumulative potential**

#### **Components:**

##### **tert.-butylamine:**

Bioaccumulation	:	Remarks: No data available
Partition coefficient: n-octanol/water	:	log Pow: 0.4 (77 °F / 25 °C) Remarks: Bioaccumulation is not expected.

### **Mobility in soil**

No data available

## Other adverse effects

### Components:

#### **tert.-butylamine:**

Additional ecological information : Biological effects:

Forms corrosive mixtures with water even if diluted.

When discharged properly, no impairments in the function of adapted biological wastewater treatment plants are to be expected.

Discharge into the environment must be avoided.

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## SECTION 13. DISPOSAL CONSIDERATIONS

### **Disposal methods**

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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## SECTION 14. TRANSPORT INFORMATION

### **International Regulations**

#### **IATA-DGR**

UN/ID No. : UN 2734  
Proper shipping name : Amines, liquid, corrosive, flammable, n.o.s.  
(tert.-butylamine)  
Class : 8  
Subsidiary risk : 3  
Packing group : I  
Labels : Class 8 - Corrosive substances, Class 3 - Flammable liquids  
Packing instruction (cargo aircraft) : 854  
Packing instruction (passenger aircraft) : 850

#### **IMDG-Code**

UN number : UN 2734  
Proper shipping name : AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S.  
(tert.-butylamine)  
Class : 8  
Subsidiary risk : 3  
Packing group : I  
Labels : 8 (3)  
EmS Code : F-E, S-C

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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 2734
Proper shipping name	: Amines, liquid, corrosive, flammable, n.o.s. (tert.-butylamine)
Class	: 8
Subsidiary risk	: 3
Packing group	: I
Labels	: Class 8 - Corrosive substances, Class 3 - Flammable liquids
ERG Code	: 132
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.

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## SECTION 15. REGULATORY INFORMATION

### CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
tert.-butylamine	75-64-9	1000	1000

### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

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

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### US State Regulations

#### Massachusetts Right To Know

tert.-butylamine 75-64-9

## Pennsylvania Right To Know

tert.-butylamine

75-64-9

### Maine Chemicals of High Concern

Product does not contain any listed chemicals

### Vermont Chemicals of High Concern

Product does not contain any listed chemicals

### Washington Chemicals of High Concern

Product does not contain any listed chemicals

### The components of this product are reported in the following inventories:

TSCA : All substances listed as active on the TSCA inventory

### TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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## SECTION 16. OTHER INFORMATION

### 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); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - 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 -

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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

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](http://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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