1 Identification

Product identifier

Product name: 9-Vinylcarbazole

Stock number: H56174
CAS Number: 1484-13-5
EC number: 216-055-0
Index number: 613-169-00-6

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: 800-322-4757
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)

GHS08 Health hazard
Muta. 2 H341 Suspected of causing genetic defects.

GHS07
Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H312 Harmful in contact with skin.
Skin Irrit. 2 H315 Causes skin irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.

Hazard pictograms

GHS07 GHS08

Signal word Warning

Hazard statements
H302+H312 Harmful if swallowed or in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H341 Suspected of causing genetic defects.

Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P281 Use personal protective equipment as required.
P362 Take off contaminated clothing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification
D1A - Very toxic material causing immediate and serious toxic effects
D2B - Toxic material causing other toxic effects

Classification system

HMIS ratings (scale 0-4)

Health (acute effects) = 3
Flammability = 1
Physical Hazard = 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:
1484-13-5 9-Vinylcarbazole
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 immediate medical advice.

**After eye contact**
Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing**
Seek medical treatment.

5 Fire-fighting measures

**Extinguishing media**
Suitable extinguishing agents: Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**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 dioxide
Nitrogen oxides (NOx)

**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:**
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.

**Prevention of secondary hazards:**
No special measures required.

7 Handling and storage

**Handling**
Precautions for safe handling:
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Prevent formation of dust.

**Information about protection against explosions and fires:**
No information known.

**Conditions for safe storage, including any incompatibilities**
Storage
Requirements to be met by storerooms and receptacles:
Store away from oxidizing agents.

**Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

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:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

**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:** Use suitable respirator when high concentrations are present.

**Protection of hands:**
Impervious gloves

**Eye protection:**
Safety glasses

**Body protection:** Protective work clothing.
### 9 Physical and chemical properties

**Information on basic physical and chemical properties**

**General Information**

**Appearance:**
- **Form:** Crystalline or powder
- **Color:** White to off-white
- **Odor threshold:** Not determined

**pH-value:** Not applicable.

**Change in condition**
- **Melting point/Melting range:** $60-65^\circ \text{C} (140-149^\circ \text{F})$
- **Boiling point/Boiling range:** $154-155^\circ \text{C} (309-311^\circ \text{F})$
- **Sublimation temperature/start:** Not determined
- **Explosion temperature:** Not determined
- **Auto igniting:** Not determined
- **Flammability (solid, gaseous):** Not determined
- **Decomposition temperature:** Not determined

**Danger of explosion:** Not determined.

**Explosion limits:**
- **Lower:** Not determined
- **Upper:** Not determined
- **Vapor pressure:** Not applicable.
- **Density:** Not determined
- **Vapor density:** Not applicable.
- **Evaporation rate:** Not applicable.
- **Solubility in / Miscibility with Water:** Not determined
- **Partition coefficient (n-octanol/water):** Not determined
- **Viscosity:**
  - **Dynamic:** Not applicable.
  - **Kinematic:** Not applicable.

**Other information**
No further relevant information available.

### 10 Stability and reactivity

**Reactivity**
No information known.

**Chemical stability**
Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided**
Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions**
Reacts with strong oxidizing agents

**Conditions to avoid**
No further relevant information available.

**Incompatible materials**
Oxidizing agents

**Hazardous decomposition products**
- Carbon monoxide and carbon dioxide
- Nitrogen oxides

### 11 Toxicological information

**Information on toxicological effects**

**Acute toxicity:**
- Harmful in contact with skin.
- Harmful if swallowed.
- Danger through skin absorption.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.

**LD/LC50 values that are relevant for classification:**

**Oral LD50** 90 mg/kg (mouse)

**Skin irritation or corrosion:** Causes skin irritation.

**Eye irritation or corrosion:** May cause irritation

**Sensitization:** May cause an allergic skin reaction.

**Germ cell mutagenicity:** Suspected of causing genetic defects.

**Carcinogenicity:** No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**Reproductive toxicity:** No effects known.

**Specific target organ system toxicity - repeated exposure:** No effects known.

**Specific target organ system toxicity - single exposure:** No effects known.

**Aspiration hazard:** No effects known.

**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.

### 12 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.

**Ecotoxical effects**

**Remark:** Very toxic for aquatic organisms

**Additional ecological information:**

**General notes:**
Do not allow material to be released to the environment without proper governmental permits.

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

May cause long lasting harmful effects to aquatic life.

Avoid transfer into the environment.

Very toxic for aquatic organisms

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects**
No further relevant information available.
13 Disposal considerations

Waste treatment methods
Recommendation Consult state, local or national regulations to ensure proper disposal.
Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number
DOT, IMDG, IATA UN2811

UN proper shipping name
DOT Toxic solids, organic, n.o.s. (9-Vinylcarbazole)
IMDG, IATA TOXIC SOLID, ORGANIC, N.O.S. (9-Vinylcarbazole)

Transport hazard class(es)
DOT

Class 6.1 Toxic substances.
Label 6.1

IMDG, IATA

Class 6.1 (T2) Toxic substances
Label 6.1

Packing group
DOT, IMDG, IATA II

Environmental hazards:
DOT Environmentally hazardous substance, solid
IMDG, IATA Warning: Toxic substances

Special precautions for user
DOT Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable.

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)

GHS07 GHS08

Signal word Warning
Hazard statements
H302+H312 Harmful if swallowed or in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H341 Suspected of causing genetic defects.

Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
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National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).
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 Substance is not listed.
Prop 65 - Developmental toxicity, female Substance is not listed.
Prop 65 - Developmental toxicity, male Substance is not listed.

Information about limitation of use:
For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
Substance is not listed.
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.

Department issuing SDS: Global Marketing Department
## Product name: 9-Vinylcarbazole

### Date of preparation / last revision
11/23/2015 / -

### Abbreviations and acronyms:
- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- EINECS: European Inventory of Existing Commercial Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- HMIS: Hazardous Materials Identification System (USA)
- WHMIS: Workplace Hazardous Materials Information System (Canada)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- vPvB: very Persistent and very Bioaccumulative
- ACGIH: American Conference of Governmental Industrial Hygienists (USA)
- OSHA: Occupational Safety and Health Administration (USA)
- NTP: National Toxicology Program (USA)
- IARC: International Agency for Research on Cancer
- EPA: Environmental Protection Agency (USA)