

SAFETY DATA SHEET

Based on Directive 2001/58/EC of the Commission of the European Communities

7H-DIBENZO[c,g]CARBAZOLE

1. Identification of the substance/preparation and of the company/undertaking

1.1 Identification of the substance or preparation:

Synonyms: none
CAS No. : 194-59-2 BCR number : BCR-266
EC index No. : N.A. NFPA code : N.D.
EINECS No. : N.A. Molecular weight : 237.34
RTECS No. : HO5600000 Formula : C20H13N

1.2 Use of the substance or the preparation:

Certified reference material for laboratory use only

1.3 Company/undertaking identification:

Institute for Reference Materials and Measurements
Retieseweg
2440 Geel
Tel. : +32 14 57 12 11
Fax : +32 14 59 04 06

1.4 Telephone number for emergency:

+32 70 245 245
Antigifcentrum
p/a Militair Hospitaal Koningin Astrid, Bruynstraat, B-1120 Brussel

2. Composition/information on ingredients

Hazardous ingredients	CAS No. EINECS No.	Conc. in %	Hazard symbol	Risks (R-phrases)
7H-dibenzo[c,g]carbazole	194-59-2	100	T	45 (1)

(1) For R-phrases in full: see heading 16

3. Hazards identification

- May cause cancer

4. First aid measures

4.1 Eye contact:

- Consult a doctor/medical service if irritation persists
- Rinse immediately with water
- Do not apply neutralizing agents

4.2 Skin contact:

- Consult a doctor/medical service if irritation persists
- Rinse with water

4.3 After inhalation:

- Consult a doctor/medical service if breathing problems develop
- Remove the victim into fresh air
- Unconscious: maintain adequate airway and respiration

4.4 After ingestion:

- Consult a doctor/medical service if you feel unwell
- Never give water to an unconscious person

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5. Fire-fighting measures

5.1 Suitable extinguishing media:

- Water spray
- Polyvalent foam
- ABC powder
- Carbon dioxide

5.2 Unsuitable extinguishing media:

- No data available

5.3 Special exposure hazards:

- On burning: release of toxic and corrosive gases/vapours nitrous vapours, carbon monoxide - carbon dioxide

5.4 Instructions:

- Dilute toxic gases with water spray
- Take account of toxic firefighting water
- Use firefighting water moderately and contain it

5.5 Special protective equipment for firefighters:

- Heat/fire exposure: compressed air/oxygen apparatus
- Heat/fire exposure: gas-tight suit

6. Accidental release measures

6.1 Personal protection/precautions: see heading 8.1/8.3/10.3

6.2 Environmental precautions:

- Prevent soil and water pollution
- Substance must not be discharged into the sewer
- Dam up the solid spill

6.3 Methods for cleaning up:

- Scoop solid spill into closing containers
- Carefully collect the spill/leftovers
- Take collected spill to manufacturer/competent authority
- Clean contaminated surfaces with an excess of water
- Wash clothing and equipment after handling

7. Handling and storage

7.1 Handling:

- Observe strict hygiene
- Avoid raising dust
- Do not discharge the waste into the drain
- Remove contaminated clothing immediately

7.2 Storage:

- Keep container tightly closed. Store in a cool area. Store in a dry area.
- Store in a dark area.
- Keep away from: heat sources

Storage temperature	: N.D.	°C
Quantity limits	: N.D.	kg
Storage life	: N.D.	
Materials for packaging	:	
- suitable	: glass	
- to avoid	: no data available	

7.3 Specific uses:

- See information supplied by the manufacturer

8. Exposure controls/Personal protection

8.1 Exposure limit values:

TLV-TWA	: not listed
TLV-STEL	: not listed
TLV-Ceiling	: not listed
OES-LTEL	: not listed
OES-STEL	: not listed
MEL-LTEL	: not listed
MEL-STEL	: not listed
MAK	: not listed
TRK	: not listed
MAC-TGG 8 h	: not listed
MAC-TGG 15 min.	: not listed
MAC-Ceiling	: not listed
VME-8 h	: not listed
VLE-15 min.	: not listed
GWBB-8 h	: not listed
GWK-15 min.	: not listed
Momentary value	: not listed
EC	: not listed
EC-STEL	: not listed

Sampling methods:

- No data available

8.2 Exposure controls:

8.2.1 Occupational exposure controls:

- Work under local exhaust/ventilation

8.2.2 Environmental exposure controls: see heading 13

8.3 Personal protection:

8.3.1 respiratory protection:

- Dust production: dust mask with filter type P3
- High dust production: compressed air/oxygen apparatus

8.3.2 hand protection:

- Gloves
- Suitable materials: No data available
- Breakthrough time: N.D.

8.3.3 eye protection:

- Face shield
- In case of dust production: protective goggles

8.3.4 skin protection:

- Protective clothing
- In case of dust production: head/neck protection
- Suitable materials: No data available

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9. Physical and chemical properties

9.1 General information:

Appearance (at 20°C) : Solid / Powder
Odour : N.D.
Colour : No data available

9.2 Important health, safety and environmental information:

pH value : N.D.
Boiling point/boiling range : N.D. °C
Flashpoint : N.D. °C
Explosion limits : N.D. vol% (°C)
Vapour pressure (at 25°C) : < 0.0001 hPa
Vapour pressure (at 50°C) : N.D. hPa
Relative density (at 20°C) : N.D.
Water solubility : 0.0063 g/100 ml
Soluble in : Organic solvents
Relative vapour density : N.D.
Viscosity : N.D. Pa.s
Partition coefficient n-octanol/water : 5.58 (estim.)
Evaporation rate :
 ratio to butyl acetate : N.D.
 ratio to ether : N.D.

9.3 Other information:

Melting point/melting range : 156 °C
Auto-ignition point : N.D. °C
Saturation concentration : N.D. g/m³

10. Stability and reactivity

10.1 Conditions to avoid/reactivity:

- No data available

10.2 Materials to avoid:

- Keep away from: heat sources

10.3 Hazardous decomposition products:

- On burning: release of toxic and corrosive gases/vapours nitrous vapours, carbon monoxide - carbon dioxide

11. Toxicological information

11.1 Acute toxicity:

LD50 oral rat : N.D. mg/kg
LD50 dermal rat : N.D. mg/kg
LD50 dermal rabbit : N.D. mg/kg
LC50 inhalation rat : N.D. mg/l/4 h
LC50 inhalation rat : N.D. ppm/4 h

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11.2 Chronic toxicity:

EC carc. cat.	:	2
EC muta. cat.	:	not listed
EC repr. cat.	:	not listed
Carcinogenicity (TLV)	:	not listed
Carcinogenicity (MAC)	:	K
Carcinogenicity (VME)	:	not listed
Carcinogenicity (GWBB)	:	not listed
Carcinogenicity (MAK)	:	not listed
Mutagenicity (MAK)	:	not listed
Teratogenicity (MAK)	:	not listed
IARC classification	:	2B

11.3 Routes of exposure: ingestion, inhalation, eyes and skin

11.4 Acute effects/symptoms:

- No data available

11.5 Chronic effects:

- Probably human carcinogenic

12. Ecological information

12.1 Ecotoxicity:

- No data available

12.2 Mobility:

- Volatile organic compounds (VOC): 0%
- Photolysis in water
- Forming sediments in water
- Insoluble in water

For other physicochemical properties see heading 9.

12.3 Persistence and degradability:

- | | | | |
|-----------------------------------|---|-----------|---------------------------------|
| - biodegradation BOD ₅ | : | N.D. | % ThOD |
| - water | : | - | Not readily degradable in water |
| - soil | : | T ½: N.D. | days |

12.4 Bioaccumulative potential:

- log P_{ow} : 5.58 (estim.)
- BCF : 7126 (DAPHNIA PULEX)
- Highly bioaccumulative

12.5 Other adverse effects:

- WGK : 3 (Classification based on the R-phrases in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 17 May 1999)
- Effect on the ozone layer : Not dangerous for the ozone layer (Council Regulation (EC) 3093/94)
- Greenhouse effect : no data available
- Effect on waste water purification : no data available

13. Disposal considerations

13.1 Provisions relating to waste:

- Waste material code (91/689/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 16 05 06 (laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals)
- Waste material code (Flanders): 001 045 691
- Waste code (Germany): 59302
- Hazardous waste (91/689/EEC)

13.2 Disposal methods:

- Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber

13.3 Packaging/Container:

- Waste material code packaging (91/689/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 15 01 10 (packaging containing residues of or contaminated by dangerous substances)

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14. Transport information

- 14.1 Classification of the substance in compliance with UN Recommendations
UN number :
CLASS :
SUB RISKS : -
PACKING : -
PROPER SHIPPING NAME :
- 14.2 ADR (transport by road)
CLASS : no data available
PACKING :
DANGER LABEL TANKS : -
DANGER LABEL PACKAGES : -
- 14.3 RID (transport by rail)
CLASS : no data available
PACKING :
DANGER LABEL TANKS : -
DANGER LABEL PACKAGES : -
- 14.4 ADNR (transport by inland waterways)
CLASS : no data available
PACKING :
DANGER LABEL TANKS : -
DANGER LABEL PACKAGES : -
- 14.5 IMDG (maritime transport)
CLASS : no data available
SUB RISKS : -
PACKING : -
MFAG : -
EMS : -
MARINE POLLUTANT : -
- 14.6 ICAO (air transport)
CLASS : no data available
SUB RISKS : -
PACKING : -
PACKING INSTRUCTIONS PASSENGER AIRCRAFT :
PACKING INSTRUCTIONS CARGO AIRCRAFT :
- 14.7 Special precautions in connection with transport : none

15. Regulatory information

Not listed in Annex I of directive 67/548/EEC et sequens. Labelling established on the basis of the available data.



Toxic

- R45 : May cause cancer
- S53 : Avoid exposure - obtain special instructions before use
S22 : Do not breathe dust
S45 : In case of accident or if you feel unwell, seek medical advice (show the label where possible)

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16. Other information

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

N.A. = NOT APPLICABLE
N.D. = NOT DETERMINED
***** = INTERNAL CLASSIFICATION

Full text of any R-phrases referred to under heading 2:

R45 : May cause cancer

Exposure limits:

TLV : Threshold Limit Value - ACGIH USA 2000
OES : Occupational Exposure Standards - United Kingdom 1999
MEL : Maximum Exposure Limits - United Kingdom 1999
MAK : Maximale Arbeitsplatzkonzentrationen - Germany 2001
TRK : Technische Richtkonzentrationen - Germany 2001
MAC : Maximale aanvaarde concentratie - The Netherlands 2002
VME : Valeurs limites de Moyenne d'Exposition - France 1999
VLE : Valeurs limites d'Exposition à court terme - France 1999
GWBB : Grenswaarde beroepsmatige blootstelling - Belgium 1998
GWK : Grenswaarde kortstondige blootstelling - Belgium 1998
EC : Indicative occupational exposure limit values - directive 2000/39/EC

Chronic toxicity:

K : List of the carcinogenic substances and processes - The Netherlands 2002