

## BCR-296: 2,2',3,4,4',5'-hexachlorobiphenyl

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

#### 1.1 Identification of the substance or preparation:

Product name: BCR-296: 2,2',3,4,4',5'-hexachlorobiphenyl  
CAS number 35065-28-2  
EC index number 602-039-00-4  
RTECS number DV5347500  
Molecular mass 360.88 g/mol  
Formula C<sub>12</sub>H<sub>4</sub>Cl<sub>6</sub>

#### 1.2 Use of the substance/preparation:

Certified reference material for laboratory use only

#### 1.3 Company/undertaking identification:

Institute for Reference Materials and Measurements  
Retieseweg  
B-2440 Geel  
Tel: +32 14 57 12 11  
Fax: +32 14 59 04 06  
JRC-IRMM-RM-Sales@ec.europa.eu

#### 1.4 Emergency telephone:

Poison Centre: +32 70 245 245

### 2. Hazards identification

NFPA: -1-0(\*)

#### DSD/DPD

Classified dangerous in accordance with Directives 67/548/EEC and 1999/45/EC  
Danger of cumulative effects  
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

#### Other hazards

Caution! Substance is absorbed through the skin  
May have an effect on fertility  
May cause harm to breastfed babies  
Probably human carcinogenic  
Probably hazardous to the foetus  
Literature reports: not readily degradable in water

#### CLP

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008  
STOT RE 2 May cause damage to organs through prolonged or repeated exposure. (H373)  
Aquatic Acute 1 Very toxic to aquatic life. (H400)  
Aquatic Chronic 1 Very toxic to aquatic life with long lasting effects. (H410)

#### Other hazards

Caution! Substance is absorbed through the skin  
May have an effect on fertility  
May cause harm to breastfed babies  
Probably human carcinogenic  
Probably hazardous to the foetus  
Literature reports: not readily degradable in water

### 3. Composition/information on ingredients

Created by: Brandweerinformatiecentrum voor Gevaarlijke Stoffen vzw (BIG)  
Technische Schoolstraat 43 A, B-2440 Geel  
<http://www.big.be>

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Reason for revision: CLP  
Revision number: 0200

Product number: 24067

Reference number: BCR-296

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Name	CAS No EINECS/ELINCS	Conc.	Classification according to DSD/DPD	Classification according to CLP	Note
2,2',3,4,4',5'-hexachlorobiphenyl	35065-28-2		R33 N; R50-53	STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	

## 4. First aid measures

### 4.1 After inhalation:

Remove the victim into fresh air

Respiratory problems: consult a doctor/medical service

### 4.2 Skin contact:

Wash immediately with lots of water

Do not apply (chemical) neutralizing agents

Consult a doctor/medical service

### 4.3 Eye contact:

Rinse with water

Do not apply neutralizing agents

Take victim to an ophthalmologist if irritation persists

### 4.4 After ingestion:

Rinse mouth with water

Give activated charcoal

Victim is fully conscious: immediately induce vomiting

Consult a doctor/medical service if you feel unwell

## 5. Fire-fighting measures

### 5.1 Suitable extinguishing media:

Water spray

Alcohol-resistant foam

Carbon dioxide

ABC powder

Dry sand

### 5.2 Unsuitable extinguishing media:

No unsuitable extinguishing media known

### 5.3 Special exposure hazards:

Heating increases the fire hazard

On heating/burning: release of toxic and corrosive gases/vapours (hydrogen chloride, carbon monoxide - carbon dioxide) and: formation of small quantities of (dioxin)

### 5.4 Instructions:

Dilute toxic gases with water spray

Take account of toxic fire-fighting water

Use water moderately and if possible collect or contain it

### 5.5 Special protective equipment for fire-fighters:

Gloves

Protective clothing

Dust cloud production: compressed air/oxygen apparatus

Heat/fire exposure: compressed air/oxygen apparatus

## 6. Accidental release measures

### 6.1 Personal precautions:

See heading 8.2

### 6.2 Environmental precautions:

Contain released substance, pump into suitable containers

Dam up the solid spill

Prevent soil and water pollution

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Prevent spreading in sewers  
See heading 13

## 6.3 Methods for cleaning up:

Prevent dust cloud formation  
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:

Avoid raising dust  
Observe very strict hygiene - avoid contact  
Insufficient ventilation: keep naked flames/sparks away  
Keep container tightly closed  
Keep away from naked flames/heat  
Finely divided: spark- and explosionproof appliances  
Finely divided: keep away from ignition sources/sparks  
Do not discharge the waste into the drain

### 7.2 Storage:

#### Safe storage requirements:

Store in a cool area  
Store in a dry area  
Keep container in a well-ventilated place  
Fireproof storeroom  
Keep locked up  
Unauthorized persons are not admitted  
Meet the legal requirements

#### Keep away from:

highly flammable materials

#### Suitable packaging material:

glass

### 7.3 Specific use(s):

See information supplied by the manufacturer for the identified use(s)

## 8. Exposure controls/Personal protection

### 8.1 Exposure limit values:

#### 8.1.1 Occupational exposure:

If limit values are applicable and available these will be listed below.

#### Indicative exposure limit (the Netherlands)

Chloorbifenyyl (54% Cl)	Time-weighted average exposure limit	- ppm 0.5 mg/m <sup>3</sup>
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#### Limit Value (Belgium)

Chloorbifenyyl(54% Cl)	Short time value	- ppm - mg/m <sup>3</sup>
	Time-weighted average exposure limit	- ppm 0.5 mg/m <sup>3</sup>

#### TLV (USA)

Chlorodiphenyl (54% chlorine)	Short time value	- mg/m <sup>3</sup>
	Time-weighted average exposure limit	0.5 mg/m <sup>3</sup>

#### TRGS 900 (Germany)

Chlorierte Biphenyle (54% Chlor)	Time-weighted average exposure limit	0.05 ppm 0.7 mg/m <sup>3</sup>
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## Limit Value (France)

Biphényle chloré(54 % Cl)	Short time value	- ppm - mg/m <sup>3</sup>
	Time-weighted average exposure limit	- ppm 0.5 mg/m <sup>3</sup>

## Limit Value (UK)

Polychlorinated biphenyls (PCB)	Short time value	- ppm - mg/m <sup>3</sup>
	Time-weighted average exposure limit	- ppm 0.1 mg/m <sup>3</sup>

## 8.1.2 Sampling methods:

Product name	Test	Number	Sampling method	Remarks
Chloro Diphenyl (60% Cl)(Polychlorinated Biphenyls)	OSHA	CSI GC-ECD		

## 8.2 Exposure controls:

### 8.2.1 Occupational exposure controls:

Measure the concentration in the air regularly

Carry operations in the open/under local exhaust/ventilation or with respiratory protection

Personal protective equipment:

#### a) Respiratory protection:

Dust production: dust mask with filter type P3

Combined gas/dust mask with filter type B/P3

#### b) Hand protection:

Gloves

- butyl rubber

- neoprene

- viton

#### c) Eye protection:

Safety glasses

In case of dust production: protective goggles

#### d) Skin protection:

Protective clothing

In case of dust production: head/neck protection

In case of dust production: dustproof clothing

### 8.2.2 Environmental exposure controls:

See headings 6.2, 6.3 and 13

## 9. Physical and chemical properties

### 9.1 General information:

Physical form	Crystalline solid
	Crystalline powder
Colour	Colourless

### 9.2 Important health, safety and environmental information:

Flashpoint	>100 °C
Solubility in water	< 0.000040 g/100 ml
Solubility in solvents	Soluble in organic solvents
Log Pow	7.44

### 9.3 Other information:

Melting point	81 °C
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## 10. Stability and reactivity

### 10.1 Conditions to avoid:

#### Possible fire hazard

heat sources

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## Stability

No data available

## 10.2 Materials to avoid:

highly flammable materials

## 10.3 Hazardous decomposition products:

On heating/burning: release of toxic and corrosive gases/vapours (hydrogen chloride, carbon monoxide - carbon dioxide) and: formation of small quantities of (dioxin)

## 11. Toxicological information

### 11.1 Acute toxicity:

No (test)data available.

### 11.2 Chronic toxicity:

Probably human carcinogenic

Not listed in mutagenicity class (EC,MAK)

Probably hazardous to the foetus

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IARC - classification	2A
TLV - Carcinogen	A3
MAK - Krebszeugend Kategorie	3B
MAK - Schwangerschaft Gruppe	B

### 11.3 Acute effects/symptoms:

#### Inhalation:

EXPOSURE TO HIGH CONCENTRATIONS:

Headache

Dizziness

Feeling of weakness

Nausea

Disturbances of consciousness

#### Skin contact:

Symptoms similar to those listed under inhalation

Symptoms similar to those listed under ingestion

#### Eye contact:

No data available

#### Ingestion:

Skin rash/inflammation

May stain the skin

Discolouration of the (finger)nails

Conjunctivitis

Damp/clammy skin

Feeling of weakness

### 11.4 Chronic effects:

May have an effect on fertility

Cumulative effect

May cause harm to breastfed babies

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT:

Dry/sore throat

Skin rash/inflammation

May stain the skin

Discolouration of the (finger)nails

Conjunctivitis

Inflammation/damage of the eye tissue

Gastrointestinal complaints

Headache

Dizziness

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Nausea  
Impaired memory  
Change in the haemogramme/blood composition  
Enlargement/affection of the liver

## 12. Ecological information

### 12.1 Ecotoxicity:

No (test) data available.

### 12.2 Mobility:

Volatile organic compounds (VOC) 0 %  
Solubility in/reaction with water Insoluble in water

### 12.3 Persistence and degradability:

Literature reports: not readily degradable in water

### 12.4 Bioaccumulative potential:

Log Pow 7.44

### 12.5 Results of PBT assessment:

Not applicable, based on available data

### 12.6 Other adverse effects:

Not dangerous for the ozone layer (Council Regulation (EC) no 1005/2009)

## 13. Disposal considerations

### 13.1 Provisions relating to waste:

Waste material code (Directive 2008/98/EC, decision 2001/118/EC)  
16 05 06\* : laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals  
Depending on branch of industry and production process, also other EURAL codes may be applicable  
Hazardous waste according to Directive 2008/98/EC

### 13.2 Disposal methods:

Dissolve or mix with a combustible solvent  
Disposal in high-temperature incinerator (> 1200 °C)  
Remove waste in accordance with local and/or national regulations  
Do not discharge into drains or the environment

### 13.3 Packaging/Container:

Waste material code packaging (Directive 2008/98/EC)  
15 01 10\* : packaging containing residues of or contaminated by dangerous substances

## 14. Transport information

### ADR

Proper shipping name	Polychlorinated biphenyls, solid
UN number	3432
Class	9
Packing group	II
Hazard identification number	90
Classification code	M2
Labels	9
Environmentally hazardous substance mark	yes

### RID

Proper shipping name	Polychlorinated biphenyls, solid
UN number	3432
Class	9
Packing group	II
Classification code	M2
Labels	9

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Environmentally hazardous substance mark	yes
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## ADNR

Proper shipping name	Polychlorinated biphenyls, solid
UN number	3432
Class	9
Packing group	II
Classification code	M2
Labels	9
Environmentally hazardous substance mark	yes

## IMO

Proper shipping name	Polychlorinated biphenyls, solid
UN number	3432
Class	9
Packing group	II
Labels	9
Marine pollutant	P
Environmentally hazardous substance mark	yes

## ICAO

Proper shipping name	Polychlorinated biphenyls, solid
UN number	3432
Class	9
Packing group	II
Labels	9
Environmentally hazardous substance mark	yes

## 15. Regulatory information

### 15.1 EU Legislation:

#### DSD/DPD

Labelling in accordance with 29th adaptation of EC directive 67/548/EEC



Dangerous for the environment

#### R-phrases

33	Danger of cumulative effects
50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

#### S-phrases

(02)	(Keep out of the reach of children)
35	This material and its container must be disposed of in a safe way
60	This material and its container must be disposed of as hazardous waste
61	Avoid release to the environment. Refer to special instructions/safety data sheets.

#### CLP

Classification and labelling according to Regulation (EC) No 1272/2008 – Annex VI and after evaluation of available test data

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## Signal word

Wng	Warning
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## H-statements

H373	May cause damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

## P-statements

P260	Do not breathe dust.
P273	Avoid release to the environment.
P314	Get medical advice/attention if you feel unwell.
P391	Collect spillage.
P501	Dispose of contents/container to manufacturer/competent authority.

## 15.2 National provisions:

## 15.3 Specific community rules:

## 16. Other information

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question.

Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult your BIG licence agreement for details.

(\*) = INTERNAL CLASSIFICATION (NFPA)

PBT-substances = persistent, bioaccumulative and toxic substances

DSD Dangerous Substance Directive

DPD Dangerous Preparation Directive

CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

Full text of any R-phrases referred to under headings 2 and 3:

R33	Danger of cumulative effects
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Full text of any H-statements referred to under headings 2 and 3:

H373**	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Full text of any classes referred to under headings 2 and 3:

Aquatic Acute	Hazardous to the aquatic environment - acute
Aquatic Chronic	Hazardous to the aquatic environment - chronic
STOT RE	Specific target organ toxicity - repeated exposure