



4-Vinylbenzocyclobutene (4-VBCB) 材料安全数据表 (MSDS) / Material Safety Data Sheet (MSDS)

产品名称 / Product Name: 4-Vinylbenzocyclobutene (4-VBCB)

CAS 号 / CAS Number: 99717-87-0

分子式 / Molecular Formula: $C_{10}H_{10}$

分子量 / Molecular Weight: 130.19

供应商 / Supplier: 天津创玮新材料有限公司/ Tianjin Chuangwei New Materials Co., Ltd.

紧急联系 / Emergency Contact: +86-18010072290

本 MSDS 符合 GHS (Globally Harmonized System) 标准, 适用于研究与开发 (R&D) 使用。**仅限专业人员使用。** 本文档基于 ChemicalBook SDS (2025 年更新) 编译。如需特定批次, 请联系供应商获取最新版本。

This MSDS complies with GHS (Globally Harmonized System) standards and is intended for research and development (R&D) use only. **For professional use only.** This document is compiled based on ChemicalBook SDS (2025 update). For specific batches, contact the supplier for the latest version.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

第 1 节: 物质/混合物及公司/企业的识别

产品标识符 / Product Identifier: 4-Vinylbenzocyclobutene (4-VBCB)

相关识别用途 / Relevant Identified Uses: 仅用于 R&D; 不适用于医药、家庭或其他用途。 / For R&D only; not for pharmaceutical, household, or other uses.

建议避免用途 / Uses Advised Against: 任何非实验室用途。 / Any non-laboratory uses.

公司标识 / Company Identification: 天津创玮新材料有限公司/ Tianjin Chuangwei New Materials Co., Ltd.

地址 / Address: 天津市武清开发区福源道北侧创业总部基地 C12 号楼北栋 501 室 /Room 501, North Building, Building C12, Entrepreneurship Headquarters Base, North of Fuyuan Road, Wuqing Development Zone, Tianjin

电话 / Telephone: +86-18010072290

紧急电话 / Emergency Telephone: 同上 (咨询医师时出示本 SDS) / Same (Show this SDS to the doctor if consulted)

SECTION 2: Hazards identification

第 2 节: 危害识别

GHS 标签元素, 包括预防声明 / GHS Label Elements, Including Precautionary Statements:

符号 (GHS) / Pictogram (GHS): Warning

信号词 / Signal Word: Warning



危害声明 / Hazard Statements: H302 - Harmful if swallowed (吞咽有害)。 / H302 - Harmful if swallowed.

预防声明 / Precautionary Statements:

- P264: 接触后彻底清洗。 / P264: Wash thoroughly after handling.
- P301 + P312: IF SWALLOWED: 立即呼叫毒物中心/医生。 / P301 + P312: IF SWALLOWED: Call a POISON CENTER/doctor immediately.
- P501: 按照当地法规处置内容和容器。 / P501: Dispose of contents/container according to local regulations.

其他危害 / Other Hazards: 无已知特定危害，但作为有机化合物，可能引起皮肤/眼睛刺激。 / No known specific hazards, but as an organic compound, it may cause skin/eye irritation.

SECTION 3: Composition/information on ingredients

第 3 节: 成分/组成信息

物质 / Substance:

- **化学名称 / Chemical Name:** 4-Vinylbenzocyclobutene
- **同义词 / Synonyms:** 3-Ethenylbenzocyclobutene, VBCB
- **CB 编号 / CB Number:** CB0966450
- **CAS 号 / CAS Number:** 99717-87-0
- **纯度 / Purity:** ≥97% (典型) / ≥97% (typical)
- **杂质 / Impurities:** 无特定杂质列出。 / No specific impurities listed.

混合物 / Mixture: 不适用 (纯物质)。 / Not applicable (pure substance).

SECTION 4: First aid measures

第 4 节: 急救措施

急救措施描述 / Description of First Aid Measures:

- **一般建议 / General Advice:** 咨询医师。出示本安全数据表给医生。 / Consult a physician. Show this safety data sheet to the doctor.
- **吸入 / Inhalation:** 若吸入, 将人员移至新鲜空气。若停止呼吸, 给人工呼吸。咨询医师。 / If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
- **皮肤接触 / Skin Contact:** 用肥皂和大量水冲洗。咨询医师。 / Wash off with soap and plenty of water. Consult a physician.
- **眼睛接触 / Eye Contact:** 用水冲洗眼睛作为预防措施。 / Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- **吞咽 / Ingestion:** 勿诱导呕吐。切勿给无意识人员口服。用水漱口。咨询医师。 / Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

最重要症状和效应 (急性和延迟) / Most Important Symptoms and Effects (Acute and Delayed): 见标签 (Section 2.2) 和/或 Section 11。 / See label (Section 2.2) and/or Section 11.

立即医疗注意和特殊治疗 / Indication of Immediate Medical Attention and Special Treatment Needed: 无数据可用。 / No data available.

SECTION 5: Firefighting measures

第 5 节: 消防措施

灭火介质 / Suitable Extinguishing Media:

- **适宜灭火介质 / Suitable Extinguishing Media:** 水喷雾、耐醇泡沫、干粉或二氧化碳。 / Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

特殊危害 / Special Hazards:

- **物质/混合物产生的特殊危害 / Special Hazards Arising from the Substance/Mixture:** 一氧化碳、二氧化碳。 / Carbon oxides.

消防员建议 / Advice for Firefighters:

- 穿戴独立呼吸器。 / Wear self-contained breathing apparatus for firefighting if necessary.
- 用水喷雾冷却未开启容器。 / Use water spray to cool unopened containers.

进一步信息 / Further Information: 无。 / None.

SECTION 6: Accidental release measures

第 6 节: 泄漏应急处理

个人预防、防护装备和紧急程序 / Personal Precautions, Protective Equipment and Emergency Procedures:

- 使用个人防护装备。 / Use personal protective equipment.
- 避免吸入蒸气、雾或气体。 / Avoid breathing vapors, mist or gas.
- 确保充分通风。 / Ensure adequate ventilation.
- 移除所有点火源。警惕蒸气积聚形成爆炸浓度（蒸气可在低洼处积聚）。 / Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
- 参考 Section 8 的个人防护。 / See Section 8 for personal protective equipment.

环境预防 / Environmental Precautions:

- 若安全，防止进一步泄漏或溢出。勿让产品进入下水道。避免排放到环境中。 / Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

围堵和清理方法/材料 / Containment and Cleanup Methods/Materials:

- 围堵溢出，然后用电保护真空吸尘器或湿刷收集，并置于容器中，按当地法规处置（见 Section 13）。 / Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing, and place in a container for disposal according to local regulations (see Section 13).
- 存放在适宜的封闭容器中处置。 / Store in suitable closed containers for disposal.

其他部分参考 / Reference to Other Sections: 处置见 Section 13。 / For disposal see Section 13.

SECTION 7: Handling and storage

第 7 节: 操作处置和储存

安全处理预防 / Precautions for Safe Handling:

- 避免皮肤和眼睛接触。 / Avoid contact with skin and eyes.
- 避免吸入蒸气或雾。 / Avoid inhalation of vapor or mist.
- 远离点火源 - 禁烟。 / Keep away from sources of ignition - No smoking.
- 采取措施防止静电积聚。 / Take measures to prevent the build up of electrostatic charge.
- 参考 Section 2.2 的预防。 / See Section 2.2 for general precautions.

安全储存条件，包括不相容性 / Conditions for Safe Storage, Including Incompatibilities:

- 存放在凉爽处。容器紧密封闭，存放在干燥、通风良好的地方。 / Keep in a cool place. Containers tightly closed in a dry and well-ventilated place.

- **推荐储存温度 / Recommended Storage Temperature:** 2 - 8 °C。 / 2 - 8 °C.
- 在惰性气体下处理和储存。 / Handle and store under inert gas.
- 避光储存。 / Protect from light.

特定最终用途 / Specific End Uses: 除 Section 1.2 提及用途外, 无其他特定用途规定。
/ No other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

第 8 节: 暴露控制/个人防护

控制参数 / Control Parameters:

- **危害组成和职业暴露限值 / Components with Workplace Control Parameters:** 不含职业暴露限值的物质。 / Contains no substances with occupational exposure limit values.

暴露控制 / Exposure Controls:

- **适宜工程控制 / Appropriate Engineering Controls:** 按照良好工业卫生和安全实践处理。工作前和结束时洗手。 / Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
- **个人防护装备 / Personal Protective Equipment:**
 - **眼/面部防护 / Eye/Face Protection:** 面罩和安全眼镜, 使用经政府标准测试和批准的设备 (如 NIOSH (US) 或 EN 166 (EU))。 / Face shield and safety glasses with side shields, use equipment tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).
 - **皮肤防护 / Skin Protection:** 戴手套。使用前检查手套。使用正确去除技术 (不触碰手套外表面) 避免皮肤接触。按适用法律和实验室实践处置污染手套。洗手并晾干。选定的防护手套须符合 EU 2016/425 法规和 EN 374 标准。 / Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves according to applicable laws and good laboratory practices. Wash and dry hands. The selected protective

gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374.

- **身体防护 / Body Protection:** 完整防护服, 防护装备类型须根据特定工作场所的危险物质浓度和量选择。 / Complete suit protecting against chemicals, the type of protective equipment must be selected according to the chemical concentration and amount of the dangerous substance at the specific workplace.
- **呼吸防护 / Respiratory Protection:** 若风险评估显示空气净化呼吸器适宜, 使用多用途组合全脸呼吸器 (US) 或 ABEK 类型 (EN 14387) 作为工程控制的备份。若呼吸器为唯一防护, 使用供气全脸呼吸器。使用经政府标准测试和批准的呼吸器和组件 (如 NIOSH (US) 或 CEN (EU))。 / Where risk assessment shows air-purifying respirators are appropriate, use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
- **环境暴露控制 / Environmental Exposure Controls:** 若安全, 防止进一步泄漏或溢出。勿让产品进入下水道。避免排放到环境中。 / Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

物理化学性质 (Section 9 摘录) / Physical and Chemical Properties (Excerpt from Section 9):

- **外观 / Appearance:** 液体 / Liquid
- **气味 / Odor:** 无数据 / No data available
- **沸点 / Boiling Point:** 75 °C at 0.6 hPa / 75 °C at 0.6 hPa
- **闪点 / Flash Point:** 76.1 °C / 76.1 °C
- **密度 / Density:** 0.962 g/cm³ (25 °C) / 0.962 g/cm³ at 25 °C
- **折射率 / Refractive Index:** n_{20}^D 1.578 / n_{20}^D 1.578
- **水溶性 / Water Solubility:** 无数据 / No data available

SECTION 9: Physical and chemical properties

第 9 节: 物理和化学性质

基本物理化学性质信息 / Basic Physical and Chemical Properties:

(详见 Section 8 摘录; 其他如 pH、蒸气压、粘度: 无数据可用) / (See excerpt in Section 8; others like pH, vapor pressure, viscosity: No data available)

其他安全信息 / Other Safety Information: 无数据可用。 / No data available.

SECTION 10: Stability and reactivity

第 10 节: 稳定性与反应性

反应性 / Reactivity: 无数据可用。 / No data available.

化学稳定性 / Chemical Stability: 在推荐储存条件下稳定。 / Stable under recommended storage conditions.

危险反应可能性 / Possibility of Hazardous Reactions: 可能发生聚合。 / May polymerize.

避免条件 / Conditions to Avoid: 暴露于光。热、火焰和火花。 / Exposure to light. Heat, flames and sparks.

不相容材料 / Incompatible Materials: 强氧化剂。 / Strong oxidizing agents.

危险分解产物 / Hazardous Decomposition Products: 火灾条件下形成的危险分解产物 - 一氧化碳、二氧化碳。其他分解产物 - 无数据可用。火灾时见 Section 5。 / Hazardous decomposition products formed under fire conditions - Carbon oxides. Other decomposition products - No data available. In the event of fire: see Section 5.

SECTION 11: Toxicological information

第 11 节: 毒理学信息

毒理学效应信息 / Information on Toxicological Effects:

- **急性毒性 / Acute Toxicity:** 无数据可用。 / No data available.
- **皮肤腐蚀/刺激 / Skin Corrosion/Irritation:** 无数据可用。 / No data available.
- **严重眼睛损伤/刺激 / Serious Eye Damage/Eye Irritation:** 无数据可用。 / No data available.
- **呼吸或皮肤致敏 / Respiratory or Skin Sensitization:** 无数据可用。 / No data available.
- **生殖细胞致突变 / Germ Cell Mutagenicity:** 无数据可用。 / No data available.
- **致癌性 / Carcinogenicity:** IARC: 本产品中 $\geq 0.1\%$ 组分未被 IARC 鉴定为可能、可能或确认人类致癌物。 / 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.
- **生殖毒性 / Reproductive Toxicity:** 无数据可用。 / No data available.
- **特定靶器官毒性 - 单次暴露 / Specific Target Organ Toxicity - Single Exposure:** 无数据可用。 / No data available.
- **特定靶器官毒性 - 重复暴露 / Specific Target Organ Toxicity - Repeated Exposure:** 无数据可用。 / No data available.
- **吸入危害 / Aspiration Hazard:** 无数据可用。 / No data available.

附加信息 / Additional Information: RTECS: 不可用。就我们所知, 化学、物理和毒理性质未彻底研究。 / RTECS: Not available. To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

第 12 节: 生态学信息

毒性 / Toxicity: 无数据可用。 / No data available.

持久性和可降解性 / Persistence and Degradability: 无数据可用。 / No data

available.

生物积累潜力 / Bioaccumulative Potential: 无数据可用。 / No data available.

土壤迁移性 / Mobility in Soil: 无数据可用。 / No data available.

PBT 和 vPvB 评估结果 / Results of PBT and vPvB Assessment: 未进行/要求 PBT/vPvB 评估, 因为未进行/要求化学安全评估。 / PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

其他不良效应 / Other Adverse Effects: 对水生生物有害。 / Harmful to aquatic life.

SECTION 13: Disposal considerations

第 13 节: 废弃处置

废物处理方法 / Waste Treatment Methods:

- **产品 / Product:** 此可燃材料可在配备后燃烧器和洗涤器的化学焚烧炉中燃烧。将剩余和不可回收溶液交给许可处置公司。 / This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Remainder and unrecyclable solutions have to be disposed of in an approved waste management facility.
 - **污染包装 / Contaminated Packaging:** 作为未使用产品处置。 / Dispose of as unused product.
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SECTION 14: Transport information

第 14 节: 运输信息

UN 号 / UN Number: ADR/RID: - ; IMDG: - ; IATA: -

UN 适当运输名称 / UN Proper Shipping Name: ADR/RID: 非危险货物; IMDG: 非危险货物; IATA: 非危险货物。 / ADR/RID: Not dangerous goods; IMDG: Not dangerous goods; IATA: Not dangerous goods.

运输危险类别 / Transport Hazard Class(es): ADR/RID: - ; IMDG: - ; IATA: -

包装组 / Packing Group: ADR/RID: - ; IMDG: - ; IATA: -

环境危害 / Environmental Hazards: ADR/RID: 无; IMDG 海洋污染物: 无; IATA: 无。 / ADR/RID: no; IMDG Marine pollutant: no; IATA: no.

特殊用户预防 / Special Precautions for User: 无数据可用。 / No data available.

SECTION 15: Regulatory information

第 15 节: 法规信息

特定物质/混合物的安全、健康和环境法规/立法 / Safety, Health and Environmental Regulations/Legislation Specific for the Substance/Mixture:

- **中国危险化学品安全管理法规 / China Dangerous Chemicals Regulation:** 2015 中国危险化学品目录: 未列出。网站: <https://www.mem.gov.cn/> / 2015 China Dangerous Chemicals Catalogue: Not listed. Website: <https://www.mem.gov.cn/>
- **新化学物质环境管理措施 / Measures for Environmental Management of New Chemical Substances:** 中国现有化学物质清单 (IECSC): 未列出。网站: <https://www.mee.gov.cn/> / Inventory of Existing Chemical Substances in China (IECSC): Not listed. Website: <https://www.mee.gov.cn/>
- **EC 清单 / EC Inventory:** 未列出。 / Not listed.
- **韩国现有化学品清单 (KECL) / Korean Existing Chemicals List (KECL):** 未列出。网站: <http://ncis.nier.go.kr> / Not listed. Website: <http://ncis.nier.go.kr>
- **新西兰化学品清单 (NZIoC) / New Zealand Inventory of Chemicals (NZIoC):** 未列出。网站: <https://www.epa.govt.nz/> / Not listed. Website: <https://www.epa.govt.nz/>
- **菲律宾化学品和化学物质清单 (PICCS) / Philippine Inventory of Chemicals and Chemical Substances (PICCS):** 未列出。网站: <https://emb.gov.ph/> / Not listed. Website: <https://emb.gov.ph/>
- **美国有毒物质控制法 (TSCA) 清单 / United States Toxic Substances Control Act (TSCA) Inventory:** 未列出。网站: <https://www.epa.gov/> / Not listed. Website: <https://www.epa.gov/>

- 越南国家化学品清单 / Vietnam National Chemical Inventory: 未列出。网站：
<https://chemicaldata.gov.vn/> / Not listed. Website: <https://chemicaldata.gov.vn/>
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SECTION 16: Other information

第 16 节: 其他信息

缩写和缩写 / Abbreviations and Acronyms:

- ADR: 欧洲国际道路危险货物运输协议 / ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- CAS: 化学文摘服务 / CAS: Chemical Abstracts Service
- EC50: 有效浓度 50% / EC50: Effective concentration 50%
- IATA: 国际航空运输协会 / IATA: International Air Transport Association
- IMDG: 国际海上危险货物 / IMDG: International Maritime Dangerous Goods
- LC50: 致死浓度 50% / LC50: Lethal concentration 50%
- LD50: 致死剂量 50% / LD50: Lethal dose 50%
- RID: 国际铁路危险货物运输法规 / RID: Regulations concerning the International Carriage of Dangerous Goods by Rail
- STEL: 短期暴露限值 / STEL: Short-term exposure limit
- TWA: 时间加权平均值 / TWA: Time-weighted average

参考 / References:

- [1] CAMEO Chemicals: <http://cameochemicals.noaa.gov/search/simple>
- [2] ChemIDplus: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- [3] ECHA: <https://echa.europa.eu/>
- [4] eChemPortal: <http://www.echemportal.org/echemportal/index>
- [5] ERG: <http://www.phmsa.dot.gov/hazmat/library/erg>
- [6] Germany GESTIS: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- [7] HSDB: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- [8] IARC: <http://www.iarc.fr/>
- [9] IPCS: <http://www.ilo.org/dyn/icsc/showcard.home>

- [10] Sigma-Aldrich: <https://www.sigmaaldrich.com/>

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