

## 一. Identifications of Substance and Company

## 物品與廠商資料

- 1.1 Product Name: Wear-resistant agent  
物品名稱: 偶联剂 Si-69
- 1.2 Producer(supplier): GUANZHOU BAIYUN XINGGONG CHEMICAL LTD  
製造商 (供應商名稱): 廣州白雲信港化工有限公司
- 1.3 Address: 204,FLOOR 2,BUILDING D, NO.206,YUEXI STREET, TONGDE STREET,BAIYUN DISTRICT,GUANGZHOU  
地址: 廣州市白雲區同德街粵溪大街 206 号 D 栋二楼 204
- 1.4 Phone: 020-86488586

## 二. Composition /Information on Ingredients

## 成份辨識資料

- 2.1 D double - (r - triethoxy silicon propyl) – four sulphide  
D 双-(r-三乙氧基硅丙基)-四硫化物  $\geq 98\%$
- 2.2 CAS NO: 40372-72-3  
EC#: 254-896-5
- 2.3 Sulfur content (weight percent)  
硫含量 (重量百分比): 21.7-23.3

## 三. Hazards Identifications

## 危害辨識資料

- 3.1 GHS Classification: Acute Toxicity, Dermal (Class 5)  
GHS 分类: 急性毒性, 经皮 (类别 5)
- 3.2 Pictogram: None  
象形图: 無
- 3.2 Health hazards: Absorbed through the skin may be harmful and may be irritating to the skin. May cause eye irritation. Inhalation may cause respiratory irritation. If ingested, it is harmful.  
健康危害: 通过皮肤吸收可能有害, 可能对皮肤有刺激。可能对眼睛有刺激。吸入可能引起呼吸道刺激。如服入是有害的。
- 3.3 Environmental hazard: No data.  
環境危害: 無資料
- 3.4 Explosion hazard: Non-combustible  
燃爆危險: 本品不燃

## 四. First-aid Measures

## 急救措施

- 4.1 Inhalation: Move to fresh air. If breathing is difficult, give oxygen and send to a doctor immediately.  
吸入: 移至新鮮空氣處。如呼吸困難, 給輸氧, 立即送醫。
- 4.2 Skin contact: Take off contaminated clothes and wash with soapy water and running water.  
皮膚接觸: 脫去污染衣着, 用肥皂水和流動清水沖洗。
- 4.3 Eye contact: Flush with running water or saline as a precaution.  
眼睛接觸: 用流動的清水或生理鹽水沖洗作為預防措施。

4.4 Eating: Brush your mouth thoroughly and take milk, soybean milk or egg white orally. If you swallow too much, please send to a doctor immediately.

食入：徹底刷口，口服牛奶、豆漿或蛋清，如吞食過量，請立即送醫。

#### 五. Fire-fighting Measures

##### 滅火措施

5.1 Extinguishing Media: Water mist, alcohol-resistant foam, dry powder, carbon dioxide.

適用滅火劑：水霧、耐醇泡沫、干粉、二氧化碳。

5.2 Not suitable for fire cutting: No report.

不適用滅火劑：未見報道。

5.3 Specific hazards arising from the substance or mixture: Carbon oxides, Sulphur oxides, Silica, Ethanol, product decomposition of unknown nature.

源于此物质或混合物的特别的危害：碳氧化物，硫氧化物，二氧化硅，乙醇，产品分解后性质不明

5.4 Protective equipment: If necessary, wear self-contained breathing apparatus to fight fires..

特殊防護裝備：如必要的话，戴自给式呼吸器去救火。

#### 六. Accidental Release Measures

##### 洩漏處理方法

6.1 Methods and materials for containment and clean-up: Keep in suitable closed containers for disposal.

抑制和清除溢出物的方法和材料：存放在适当的闭口容器中待处理。

6.2 Refer to other sections: Discard handling see Section 13.

参考其他部分：丢弃处理请参阅第 13 节。

6.3 Environmental precautions: Do not let product enter drains.

环境保护措施：不要让产物进入下水道。

#### 七. Safe operation and Storage

##### 安全操作與儲存方法

7.1 Operational matters: General fire protection measures.

操作事項：一般性的防火保护措施。

7.2 Storage method: Store in a cool place. Keep the container tightly closed and store in a dry and ventilated place.

儲存方法：贮存在阴凉处。容器保持紧闭，储存在干燥通风处。

#### 八. Contact and Precaution

##### 接觸與防護措施

8.1 Respiratory Protection: If hazard assessments indicate the use of air-purifying respirators, use a full-face respirator (US) or Type ABEK (EN14387) respirators as an alternate to engineering controls. Respirators Use respirators and parts that have been tested and passed government standards such as NIOSH (US) or CEN (EU).

呼吸系统防护：如危险性评测显示需要使用空气净化的防毒面具，请使用全面罩式多功能防毒面具（US）或 ABEK 型（EN14387）防毒面具筒作为工程控制的候补。呼吸器使用经过测试并通过政府标准如 NIOSH（US）或 CEN（EU）的呼吸器和零件。

- 8.2 Eye protection: Wear eye/face protection such as safety goggles with side shields.  
眼睛防护: 佩戴眼睛/面部防护, 如边上带有防护的安全护目镜。
- 8.3 Body protection: Impermeable clothing, the type of protective equipment must be based on the concentration and content of the hazardous substance in the specific workplace to choose..  
身体防护: 防渗透的衣服, 防护设备的类型必须根据特定工作场所中的危险物的浓度和含量来选择。
- 8.4 Skin Protection: Wear gloves and gloves must be checked before use. Remove gloves using appropriate methods (do not touch the outer surface of gloves) and avoid any skin contact with this product. After use, please dispose of contaminated gloves carefully in accordance with relevant laws and regulations and valid laboratory procedures. Please wash and dry your hands. The selected protective gloves must comply with EU regulation 89/686/EEC and derived from it EN 376 standard.  
皮肤保护: 戴手套取手套在使用前必须受检查。请使用合适的方法脱除手套(不要接触手套外部表面), 避免任何皮肤部位接触此产品。使用后请将被污染过的手套根据相关法律法规和有效的实验室规章制度谨慎处理。请清洗并吹干双手所选择的保护手套必须符合 EU 的 89/686/EEC 规定和从它衍生出来的 EN 376 标准。
- 8.5 Other protection: Smoking, eating and drinking are prohibited at the work site. Shower and change clothes after work. Keep good hygiene habits.  
其它防护: 工作现场禁止吸烟、进食和饮水。工作完毕, 淋浴更衣。保持良好的卫生习惯。

## 九. Physical and Chemical Property

## 物理及化學性質

- 9.1 Exterior: Light yellow transparent liquid with slight odor.  
外觀: 淡黄色透明液体, 稍有气味。
- 9.2 Molecular formula:  
分子式:  $C_{18}H_{42}O_6Si_2S_4$
- 9.3 PH: N/A
- 9.4 Molecular weight:  
分子量: 539.0
- 9.5 Boiling point:  
沸点(°C): 250°C
- 9.6 Spontaneous combustion temperature: Meaningless  
自燃温度(°C): 無意义
- 9.7 Critical temperature (°C): Meaningless  
临界温度(°C): 無意义
- 9.8 Critical pressure (MPa): Meaningless  
临界压力(MPa): 無意义
- 9.9 Flash point:  
闪点(°C): 100°C
- 9.10 Ignition temperature: No data  
引燃温度: 無资料
- 9.11 Explosive upper/Lower limit %(V/V) : non-explosive  
爆炸上限/下限%(V/V): 非爆炸物
- 9.12 Refractive index:  
折光率: 1.481

9.13 Logarithmic octanol/water partition coefficient: No data  
辛醇/水分配系数的对数值：无资料

十. Stability and Reactivity  
安定性及反應性

- 10.1 Stability: Storage at room temperature in the closed original is stable.. It is stable during normal handling, use and transportation. Stable in the allowed heating range and exposure to air.  
安定性：在封闭的原装中室温贮藏是安定的。在通常的处理、使用和运输过程中是安定的。在允许的加热范围和暴露在空气中是安定的。
- 10.2 Hazardous reactions during special condition: No data  
特殊狀況下可能之危害反應：無资料
- 10.3 Hazardous decomposition products: Reacts with water to form ethanol  
危害分解产物：与水反应形成乙醇。
- 10.4 Materials to avoid: Strong Oxidant  
應避免之物資：强氧化剂

十一. Toxicological Information  
毒性資料

- 11.1 Acute toxicity: LD50 Oral - Rat - > 17,675 mg/kg  
急毒性：半数致死剂量 (LD50) 经口 - 大鼠 - > 17,675 mg/kg  
Minimum lethal concentration inhalation - rat - 4 h  
最低致死浓度 吸入 - 大鼠 - 4 h  
LD50 Dermal - Rat - > 4,983 mg/kg  
半数致死剂量 (LD50) 经皮 - 大鼠 - > 4,983 mg/kg
- 11.2 Toxicity: No data  
亚急性和慢性毒性：無资料
- 11.3 Skin corrosion/irritation: Skin - Rabbit - No skin irritation.  
皮肤腐蚀/刺激性：皮肤 - 兔子 - 无皮肤刺激。
- 11.4 Eye Damage/Irritation: Eyes - Rabbit - No eye irritation  
眼睛损伤/刺激性：眼睛 - 兔子 - 无眼睛刺激。
- 11.5 Mutagenicity: No data  
致突变性：無资料
- 11.6 Teratogenicity: No data  
致畸性：無资料
- 11.7 Carcinogenicity: IARC: No components greater than or equal to 0.1% in this product have been identified by IARC as probable or positive human carcinogens.  
致癌性：IARC: 此产品中并没有大于或等于 0.1%含量的组分被 IARC 鉴别为可能的或肯定的人类致癌物。

十二. Ecological Information  
生態資料

- 12.1 Ecotoxicological toxicity: No data  
生态毒理毒性：無资料

- 12.2 Biodegradability: No data  
生物降解性：無資料
- 12.3 Mobility in soil: No data  
土壤中的迁移性：無資料
- 12.4 Bioaccumulation: No data  
生物蓄积性：無資料
- 12.5 Outcome evaluation of PBT and vPvB: No data  
PBT 和 vPvB 的结果评价：無資料

## 十三. Disposal Method

## 廢棄處置方法

- 13.1 Nature of waste: Dispose of in accordance with relevant national and local waste regulations.  
废弃物性质：处置时应遵循国家和地方相关废弃物法规处置。
- 13.2 Waste disposal method: Take remaining and unrecovered solution to a disposal company. Contact a professional licensed waste disposal facility to dispose of this material.  
废弃处理方法：将剩余的和未回收的溶液交给处理公司。联系专业的拥有废弃物处理执照的机构来处理此物质。
- 13.3 Contaminated containers and packaging: Dispose of as unused product.  
受污染的容器和包装：作为未用过的产品弃置。

## 十四. Transport Information

## 運輸信息

- 14.1 Land transport: Not dangerous to transport, not regulated.  
陆运：非危险运输品，不受管制。  
UN code: None  
UN 编码：无
- 14.2 Sea transportation: Not dangerous to transport, not regulated.  
海运：非危险运输品，不受管制。  
UN code: None  
UN 编码：无
- 14.3. Air freight: Not dangerous to transport, not regulated.  
空运：非危险运输品，不受管制。  
UN code: None  
UN 编码：无
- 14.4 This product is not classified as a dangerous substance for transport by TDG; IMDG CODE; IATA DGR; GB 6944-2012; GB12268-2012. Please follow national and international shipping rules when shipping.  
该产品未被 TDG; IMDG CODE; IATA DGR; GB 6944-2012; GB12268-2012 列为运输危险物质。运输时请遵守国家和国际运输规则。

## 十五. Statute Information

## 法規資料

- 15.1 Domestic regulations  
国内法规

1. Regulations for the preparation of chemical safety technical specifications (GB16483-2008);  
化学品安全技术说明书编写规定(GB16483-2008);
2. The Work Safety Law of the People's Republic of China (passed at the 28th meeting of the Standing Committee of the Ninth National People's Congress on June 29, 2002);  
中华人民共和国安全生产法(2002年6月29日第九届全国人大常委会第28次会议通过);
3. Law of the People's Republic of China on the Prevention and Control of Occupational Diseases (passed at the 24th meeting of the Standing Committee of the Eleventh National People's Congress on December 31, 2011);  
中华人民共和国职业病防治法(2011年12月31日十一届全国人大常委会第24次会议通过);
4. The Environmental Protection Law of the People's Republic of China (passed at the 11th meeting of the Standing Committee of the Seventh National People's Congress on December 26, 1989);  
中华人民共和国环境保护法(1989年12月26日第七届全国人大常委会第11次会议通过);
5. Regulations on the Safety Management of Hazardous Chemicals (adopted at the 144th executive meeting of the State Council on February 16, 2011);  
危险化学品安全管理条例(2011年2月16日国务院第144次常务会议通过);
6. Regulations on Work Safety Licenses (passed at the 34th executive meeting of the State Council on January 7, 2004)  
安全生产许可证条例(2004年1月7日国务院第34次常务会议通过)
7. List of dangerous goods (GB12268-2012);  
危险货物物品名表 (GB12268-2012);
8. Classification and product name number of dangerous goods (GB 6944-2012);  
危险货物分类和品名编号 (GB 6944-2012);
9. Regulations on the Administration of Transportation of Dangerous Goods by Civil Aviation in China  
中国民用航空危险品运输管理规定;
10. Regulations on the Administration of Road Transport of Dangerous Goods;  
道路危险货物运输管理规定;
11. Rules for the management of railway transport of dangerous goods;  
铁路危险货物运输管理规则;
- 15.2 International/European regulations:  
国际/欧洲法规:
  1. IATA Dangerous Goods Regulations (IATA DGR) (version 54);  
国际航协危险品规则 (IATA DGR) (54 版);
  2. International Maritime Dangerous Goods Code (IMDG Code) (version 35-10);  
国际海运危险货物规则 (IMDG Code) (35-10 版);
  3. United Nations Recommendations on the Transport of Dangerous Goods (TDG) (17th edition).  
联合国关于危险货物运输的建议书 (TDG) (17 版)。

#### 十六. Other Information

其他資料

- 16.1 Statement: This SDS is based on our current knowledge and provides the correct safety precautions required for chemicals. This document is not a guarantee of the characteristics of the product, nor is it a legally binding contractual relationship. This note is for industrial use only and should not be used for pharmaceutical or other purposes.

声明: 本 SDS 是以我们现有的知识而撰写, 提供了有关化学品所需正确的安全注意事项。此文件并

非为产品特性之保证，也不为具有法律效力的合同关系。本说明仅供工业生产使用，不能用作药物或其它用途。

**16.2 Reference**

参考文献

1. Global Harmonization system for GHS Chemicals  
GHS 化学品全球调和制度
2. Classification, Labelling and Packaging of Chemical Substances and Mixtures  
化学物质和混合物分类、标示与包装法规 (Regulation(EC)No.1272/200/)

**16.3 Drawing by: GUANZHOU BAIYUN XINGGONG CHEMICAL LTD**

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