编　　码：

产品名称：硫磺

警告

儿童不得触及。

使用前请读标签。

易燃固体。造成严重眼刺激。

预防:

远离热源/火花/明火/热表面。禁止吸烟。容器和装载设备接地/等势联接。使用防爆的电气/通风/照明/……/设备。戴防护手套/穿防护服/戴防护眼罩/戴防护面具。作业后彻底清洗……

反应:

火灾时：使用……灭火。如进入眼睛：用水小心冲洗几分钟。如戴隐形眼镜并可方便地取出，取出隐形眼镜。继续冲洗。如仍觉眼刺激：求医/就诊。

储存:

/

处置:

/

化学品安全数据单

一、标识

全球统一制度产品标识符：硫磺/ Sulfur。
其它标识办法：胶体硫；硫黄块。
化学品使用建议和使用限制：本品可用于制造染料、农药、火柴、火药、橡胶、医药等。
供货商的详细情况：/
紧急电话号码：/

二、危险标识

物质或混合物的分类：
易燃固体第 2 类
严重眼损伤/眼刺激第 2 类。
全球统一制度标签要素，包括防范说明：

信号词：警告。
危险说明：易燃固体。造成严重眼刺激。
防范说明：
预防：
远离热源、热表面、火花、明火和其他点火源。禁止吸烟。容器和装载设备接地并等势联接。使用防爆的[电气/通风/照明/…]设备。戴防护手套/穿防护服/戴防护眼罩/戴防护面具。作业后彻底清洗双手和眼睛。
反应：
火灾时：使用干粉、泡沫或雾状水灭火。如进入眼睛：用水小心冲洗几分钟。如戴隐形眼镜并可方便地取出，取出隐形眼镜。继续冲洗。如仍觉眼刺激：求医/就诊。
贮存：/
处置：
按照相关规定处置内装物和容器。
不导致分类的其他危险：/

三、组成/成分信息

化学名称	化学文摘社编号（CAS No.）	成分（由送检企业提供）
硫	7704-34-9	99.98%

四、急救措施

不同暴露途径的急救方法

吸入：迅速脱离现场至空气新鲜处。保持呼吸道通畅。如呼吸困难，给输氧。如呼吸停止，立即进行人工呼吸。就医。

皮肤接触：脱去污染的衣着，用大量流动清水冲洗。

眼睛接触：立即提起眼睑，用大量流动清水或生理盐水彻底冲洗至少 15 分钟。就医。

摄入：饮足量温水，漱口。就医。

最重要的急性和延迟症状/效应：/

必要时注明立即就医及所需的特殊治疗：/

五、消防措施

适当的灭火剂：可用雾状水、干粉或泡沫灭火。

化学品产生的具体危险：易燃固体，在高温高热下可着火燃烧，释放出有毒气体。

消防人员的特殊防护行动：消防人员必须配戴空气呼吸器、消防衣及防护手套，根据着火原因选择适当灭火剂，在安全距离以外的上风向灭火。

六、意外释放措施

人身防范、保护设备和应急程序：建议应急处理人员戴正压式呼吸器，穿防毒工作服。不要直接接触泄漏物。

环境防范措施：隔离泄漏污染区，限制出入。

抑制和清洁的方法和材料：小量泄漏：避免扬尘，用洁净的铲子收集于干燥、洁净、有盖的容器中，转移至安全场所。大量泄漏：用塑料布、帆布覆盖。使用无火花工具收集回收或运至废物处理场所处置。

七、搬运与储存

安全搬运的防范措施：密闭操作，加强通风，严格遵守操作规程，建议操作人员佩戴防尘面具，穿一般防护服，戴橡胶手套，戴防护眼镜、口罩，工作现场严禁吸烟。

安全存储的条件，包括任何不相容性：储存于阴凉、通风的仓库内。远离火种、热源。包装必须密封，切勿受潮。搬运时要轻装轻卸，防止包装及容器损坏。应与氧化剂、易（可）燃物等分开存放，切忌混储。储区应备有合适的材料收容泄漏物。

八、接触控制/人身保护

控制参数：

来源	物质名称	TWA
中国 工作场所有害因素职业接触限值 - 粉尘	硫	8 mg/m^3

适当的工程控制：严加密闭，提供充分的局部排风。

个人保护措施

防护眼罩/面具：佩戴防尘面具。

皮肤防护：穿一般防护服。

呼吸系统防护：可能接触其粉尘时，必须佩戴防尘面具（全面罩）。紧急事态抢救或撤离时，应该佩戴空气呼吸器。

高温危险：/

九、物理及化学性质

外观（物理状态、颜色等）	黄色块状固体。
气味	/
气味阈值	/
pH 值	/
熔点/凝固点	（γ-硫）：107℃；（β-硫）：115℃；（无定形硫）：120℃。
初始沸点和沸腾范围	445℃。
闪点	160℃。
蒸发速率	/
易燃性（固体、气体）	/
上下易燃极限或爆炸极限	35-1400 g/m³
蒸气压力	/
蒸气密度	/
相对密度	2.1。
可溶性	不溶于水。
分配系数：正辛醇/水	/
自动点火温度	232℃。
分解温度	/
粘度	/

十、稳定及反应性

反应性：/
化学稳定性：在常温下稳定。
危险反应的可能性：燃烧时释放出有毒和腐蚀性硫氧化物气体，与强氧化物剧烈反应（尤其是呈粉末状态时），有着火和爆炸的危险。
应避免的条件：火星、静电、高温。
不相容材料：强氧化剂、易（可）燃物。
危险分解产物：硫氧化物。

十一、毒理学信息

暴露途径：吸入，食入，经皮吸收，眼睛接触。
有关物理、化学和毒理学特点的症状：/
急性毒性效应：吸入后会导致咳嗽、咽喉刺激。皮肤接触会导致皮肤发红、刺激。眼睛接触后会导致发红、刺激。食入会导致恶心、呕吐、腹痛等症状。
慢性毒性或长期毒性效应：长期或重复接触皮肤可能导致皮炎。此物质对呼吸道有影响，可能导致慢性支气管炎。
毒性的度量值（如急性毒性估计值）：
LD50(Oral, rat): >2000 mg/kg
LD50(Dermal, rat): >2000 mg/kg
LC50(Inhalation, rat): >5.43 mg/L4 h

十二、生态信息

毒性：/
持久性和降解性：低。
生物累积潜力：低。
在土壤中的流动性：低。
其它有害效应：/

十三、处置考虑

处置方法：用安全掩埋法处置。破损容器禁止重新使用，要在规定场所掩埋。

十四、运输信息

联合国编号：1350。
联合国正式运输名称：硫。
运输危险分类：4.1。
包装类别（如果适用）：III。
环境危险：/
用户的特殊防范措施：/

十五、管理信息

国内化学品安全管理法规：本化学品安全数据单遵照了以下相关国家标准：GB 16483-2008、GB 13690-2009、GB 6944-2012、GB/T 15098-2008、GB 18218-2009、GB 15258-2009、GB 190-2009、GB 191-2009、GB 12268-2008、GA 57-1993、GBZ 2-2007 以及相关法规：《铁路危险货物运输管理规则》、《危险化学品安全管理条例》。

十六、其它信息

参考文献	联合国《关于危险货物运输的建议书•规章范本》 联合国《全球化学品统一分类和标签制度》
制表日期	2015-6-8

注 1：当产品为含有两种以上危险物质的混合物时，应依据其混合后的危险性，制作安全数据单。

注 2：制造商/供应商应根据实际情况确保安全数据单所含信息的正确性，并适时更新。

注 3：如由于产品特性而不存在或不可得某些信息时（如固体不存在沸点），应在表格中以“/”标识。

Chemical Safety Data Sheet

Section 1 IDENTIFICATION

GHS Product identifier: Sulfur.

Other means of identification: /

Recommended use of the chemical and restrictions on use: Raw material of dye, pesticide, match, gunpowder, rubber, medicine, etc.

Supplier's details: /

Emergency phone number: /

Section 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture:

Flammable solid Category 2

Serious eye damage/eye irritation Category 2

GHS Label elements, including precautionary statements:

Signal word: Warning

Hazard statement(s): Flammable solid. Causes serious eye irritation.

Precautionary statement(s):

Prevention:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting/...] equipment. Wear protective gloves/ protective clothing/eye protection/face protection. Wash hands and eyes thoroughly after handling.

Response:

In case of fire: Use chemical powder, foam or water spray for extinction. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage: /

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards which do not result in classification: /

Section 3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Concentration%
Sulfur	7704-34-9	99.98%

Section 4 FIRST AID MEASURES

Description of necessary first aid measures

If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact: Wash off with soap and plenty of water. Consult a physician.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If Ingestion: Rinse mouth with water. Consult a physician.

Most important symptoms/effects, acute and delayed: /

Indication of immediate medical attention and special treatment needed, if necessary: /

Section 5 FIREFIGHTING MEASURES

Suitable extinguishing media: Use foam, chemical power or water spray.

Special hazards arising from the chemical: The material is a kind of flammable solid. It may burn at high temperature and fire and release toxic fumes.

Special protective actions for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary. Use water spray to cool unopened containers. In case of fire in the surroundings, use appropriate extinguishing media.

Section 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.

Environmental precautions: Do not enter into spillage area. Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up: Contain spillage, and then collect in an clean container according to local regulations

Section 7 HANDLING AND STORAGE

Precautions for safe handling: Wear protective gloves/eye protection/face protection/protective clothing. Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition - No smoking.

Conditions for safe storage, including any incompatibilities: Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep away from flammable materials and oxidizers.

Section 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

Source	Material	TWA
China Occupational Exposure Limits for Hazardous Agents in the Workplace - Dust	Sulfur	8 mg/m^3

Appropriate engineering controls: Local exhaust ventilation or a process enclosure ventilation system may be required.

Individual protection measures

Eye/face protection: Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.

Skin protection: Wear chemical protective gloves, e.g. PVC. Wear safety footwear or safety gumboots, e.g. Rubber. Impervious clothing,

Respiratory protection: Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant.

Thermal hazards: /

Section 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, colour etc)	Yellow mass solid.
Odour	/
Odour Threshold	/
pH	/
Melting point/freezing point	γ-sulfur:107℃;β-sulfur:115℃; amorphous sulfur:120℃.
Initial boiling point and boiling range	445℃.
Flash point	160℃.
Evaporation rate	/
Flammability (solid, gas)	/
Upper/lower flammability or explosive limits	35-1400 g/m³
Vapour pressure	/
Vapour density	/
Relative density	2.1.
Solubility(ies)	Insoluble in water.
Partition coefficient: n-octanol/water	/
Auto-ignition temperature	232℃.
Decomposition temperature	/
Viscosity	/

Section 10 STABILITY AND REACTIVITY

Reactivity: /

Chemical stability: The material is stable in normal temperature.

Possibility of hazardous reactions: On combustion, forms toxic and corrosive gases of sulfur oxides including sulfur dioxide. Reacts violently with strong oxidants, especially if powdered. This generates fire and explosion hazard.

Conditions to avoid: Spark, high temperature and static electricity.

Incompatible materials: Strong oxidizer and flammable materials.

Hazardous decomposition products: SO_2 and SO_3.

Section 11 TOXICOLOGICAL INFORMATION

Information on the likely routes of exposure: Inhaled, swallowed, skin, eyes.

Symptoms related to the physical, chemical and toxicological characteristics: /

Acute health effects: Accidental ingestion of the material may be harmful and cause cough and throat irritation. Oral intake may cause headache, giddiness, vomit and other symptoms. This

material may produce skin and eyes irritation.

Chronic health effects: Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the respiratory tract. This may result in chronic bronchitis.

Numerical measures of toxicity(such as acute toxicity estimates):

LD50(Oral, rat): >2000 mg/kg

LD50(Dermal, rat): >2000 mg/kg

LC50(Inhalation, rat): >5.43 mg/L4 h

Section 12 ECOLOGICAL INFORMATION

Toxicity: /

Persistence and degradability: Low.

Bioaccumulative potential: Low.

Mobility in soil: Low.

Other adverse effects: /

Section 13 DISPOSAL CONSIDERATIONS

Disposal methods: Burial in a land-fill specifically licensed to accept chemical. Reuse of broken container is forbidden.

Section 14 TRANSPORT INFORMATION

UN number: 1350.

UN proper shipping name: SULPHUR.

Transport hazard class(es) : 4.1.

Packing group, if applicable: III.

Environmental hazards: /

Special precautions for user: /

Section 15 REGULATORY INFORMATION

Regulations: This safety data sheet is in compliance with the following national standards: GB 16483-2008, GB 13690-2009, GB/T 15098-2008, GB 18218-2009, GB 15258-2009, GB 6944-2012, GB 190-2009, GB 191-2009, GB 12268-2008, GA 57-1993, GBZ 2-2007 as well as the following national regulations: Dangerous Goods Transport Administrative Regulation [Published by the Ministry of Railways, 2008], Dangerous Chemicals Safety Administrative Regulation [Published by the State Council, 2011].

Section 16 OTHER INFORMATION

References	UN Recommendations on the Transport of Dangerous Goods Model Regulations UN Globally Harmonized System of Classification and Labelling of Chemicals
Form Date	8-June-2015

Note 1: When products contain two or more hazardous substances, Safety Data Sheets should be prepared based on the risk of the mixture.

Note 2: Manufacturer / supplier should ensure the correctness of the information contained in the safety data sheets, and updated in a timely manner.

Note 3: As a result of product features without the existence of certain information or no data available (such as boiling point does not exist for the solid) in the table with "/" logo.

硫

Sulfur

UN 1350