

前驱体材料

一 化学品名称

中文名 镍钴锰硫酸盐溶液

二 成分 / 组成信息

主要成分 镍钴锰硫酸盐, 水

CAS 号 无

相对分子质量 无

产品形态 液态

密度 1.2 g/cm³

PH 5-6

三 危险性概述

危险特性：镍钴锰硫酸盐溶液是一种无机盐溶液，无毒、不燃不爆，其化学性能稳定。

侵入途径：食入；

健康危害：对皮肤、眼睛有刺激性，一旦接触，应用肥皂、清水及时的冲洗干净；

灭火方法：不存在灭火问题。

四 急救措施

皮肤接触：一旦接触，立即脱去衣服，用肥皂及大量清水冲洗干净；眼睛接触：立即用大量的肥皂水、清水彻底冲洗干净。食入：用水漱口。吸入：本品属于无机盐溶液，无挥发性，不存在吸入问题。

五 消防措施

燃烧性：不燃；闪点（℃）：无意义；引燃温度：无意义；最大爆炸压力（MPa）：无意义；

危险特性：本品不燃，但对碳钢金属有弱的腐蚀作用，无危险性。灭火方法：本品非易燃、易爆品，不存在灭火问题。

六 泄漏应急处理

本品属于弱酸性溶液，无毒，包装为 25 看过、50kg 桶装，若发生泄漏也是少量的泄漏。如发生泄漏时，用簸箕收起至有盖的容器中，用大量的清水冲洗干净。小量泄漏可以用大量水冲洗，洗水稀释后放入废水系统中。

七 操作处置与储存

操作过程处置注意事项：操作时注意通风，操作人员必须经训，严格遵守操作规程，操作人

员带防护眼镜、橡胶手套、雨靴，搬运时要防止容器泄漏；配备泄漏应急处理的水源，倒空的容器应集中存放。

储存注意事项：储存于阴凉、通风的库房，库温应保持不超过 30 °C，容器密封。应与碱类、活性金属粉末分开存放。切忌混储，储区应备有泄漏应急处理设备和合适的收容材料。

八 暴露控制 / 个体防护

工程控制：密闭操作、注意通风。尽可能机械化、自动化、提供安全沐浴和洗眼设备；

呼吸系统防护：本品属于弱酸性产品，不存在挥发性，因此对呼吸系统也不存在防护处理；

眼睛防护：戴化学安全防护眼镜；

身体防护：穿工作服；

手防护：戴橡胶手套；

其他防护：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 理化特性

外观与性状 黑褐色不透明液体。

饱和蒸气压：无资料；

溶解性：与水任意比例混溶；

相对密度：1.2-1.25g/ml.

化学特性：弱酸性无机盐溶液。

主要用途：用于锂电正极材料前驱体原料。

十 稳定性和高应活性

稳定性：稳定；避免接触的条件禁物：酸、碱类、其他盐类及盐溶液类；燃烧性：不燃烧。

十一 毒理学资料

毒理学资料,无资料。

十二 生态学资料

生态学资料，无资料

十三 废弃处理

废弃方法：处理前应参阅国家和地方有关法规，建议送生产厂家处理；

十四 运输信息

包装方法：25 升或 50 升塑料桶。

运输注意事项：在运输过程中应避免撞击、避免容器倒置，避免泄漏，搬运时轻拿轻放，保证容器安全。

十五 法规信息

化学危险物品安全管理条例（2013 国务院令第 645 号），化学危险物品安全管理条例实施细则（化学发 1992 第 677 号），工作场安全使用品规定（1996 劳动部发 423 号）等法规，针对化学危险品的安全使用、生产、储存、运输、装卸等方面均作了相应规定。

Precursor material

1. Chemical name

English name: nickel -cobalt -manganese sulfate solution

2. Two components/composition information

Main ingredients: nickel cobalt manganese sulfate, water

CAS number: without

molecular mass: without

Product form: liquid

The density : 1.2 g/cm³

PH: 5-6

3. Risk overview

Dangerous characteristics: nickel, cobalt, manganese sulfate solution is an inorganic salt solution, non-toxic, non-combustible, non-explosive, its chemical properties are stable.

Invasion route: ingestion;

Health hazards: irritation to skin and eyes, once in contact, apply soap, water timely rinse clean;

Extinguishing method: there is no extinguishing problem.

4. First aid measures

Skin contact: once in contact, immediately remove clothes, wash with soap and plenty of water; Eye

contact: immediately rinse thoroughly with plenty of soap and water. Ingestion: rinse with water.

Inhalation: this product belongs to inorganic salt solution, no volatilization, no inhalation problem.

5. Fire protection measures

Combustibility: non-combustibility; Flash point (°C) : meaningless; Ignition temperature: nonsense;

Maximum explosive pressure (MPa) : meaningless; Dangerous characteristics: this product is non-flammable, but has a weak corrosion effect on carbon steel metal, no danger. Fire fighting method: this product is not inflammable, explosive, there is no fire fighting problem.

6. Emergency treatment of leakage

This product belongs to the weak acid solution, non-toxic, the packaging is 25, 50kg barrels, if the occurrence of leakage is also a small amount of leakage. In case of leakage, put the dustpan into the

container with cover and rinse with plenty of clean water. Small leaks can be flushed with a large amount of water, which is diluted and placed into the waste water system.

7. Operation, disposal and storage

Precautions for handling during operation: pay attention to ventilation during operation. Operators must be trained and strictly abide by the operation rules. Operators should wear protective glasses, rubber gloves and rain boots. Equipped with water for emergency treatment of leakage, emptied containers should be stored in a centralized manner.

Storage precautions: store in a cool, ventilated warehouse, storage temperature should not exceed 30 °C, container sealed. It should be stored separately from alkali and active metal powder. Do not mix storage, storage area should be equipped with leakage emergency treatment equipment and appropriate storage materials.

8. Exposure control/personal protection

Engineering control: closed operation, attention to ventilation. As far as possible mechanization, automation, provide safe bath and eye washing equipment;

Respiratory system protection: this product belongs to the weak acid product, there is no volatility, so there is no protection treatment for respiratory system; Eye protection: wear chemical safety to protect eye area;

Physical protection: wear overalls;

Hand protection: wear rubber gloves;

Other protection: smoking, eating and drinking are prohibited on the work site. After work, shower and change clothes, and maintain good hygiene habits.

9. Physical and chemical properties

Appearance and properties dark brown opaque liquid.

Saturated vapor pressure: no data available;

Solubility: miscible with water in any proportion;

Relative density: 1.2-1.25g/ml.

10. Chemical properties: weakly acidic inorganic salt solution.

Main application: used as precursor material of lithium anode material.

Stability and high reactive activity

Stability: stability; Conditional prohibitions to avoid contact: acids, bases, other salts and salt

solutions; Combustibility: non - combustibility.

Toxicological data

Toxicological data, no data available.

12. Ecological data

Ecological data, no data

13. Disposal

Waste method: refer to relevant national and local laws and regulations before disposal, and suggest to be sent to the manufacturer for disposal;

14. Transport information

Packing method: 25 l or 50 l plastic drum.

Transportation precautions: avoid collision, container upside down and leakage during transportation. Handle the container gently to ensure its safety.

15. Regulations information

Regulations on the safety management of chemical dangerous goods (order no. 645 of the state council of 2013), safety management of chemical dangerous goods. Example carry out detailed rules (chemical hair 1992 no. 677), working place safety makes provision for provision (1996 ministry of Labour hair no. 423) wait for code, the safe use, production, storage, transportation, loading and unloading etc. of dangerous chemical goods were made corresponding provision.