

**致冷剂 R410A
安全技术说明书
Refrigerant R410A
Safety Data Sheet**

(S D S)

企业名称：浙江衢州联州致冷剂有限公司

Supplier: Zhejiang Quzhou Lianzhou Refrigerant Co., Ltd.

地址：浙江省衢州市柯城区

Add: Kecheng Area, Quzhou, Zhejiang.

联系电话：0570-3617480

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生效日期：2013 年 1 月 1 日

Effective date: Jan. 1st, 2013.

第一部分 化学品及企业标识

Section 1: Product and Company Identification

化学品中文名称: 致冷剂 R410A

Material Name(Chinese): 致冷剂 R410A

化学品英文名称: Refrigerant R410A

Material Name(Chinese): Refrigerant R410A

化学品俗名或商品名: 致冷剂 R410A

Material Common name or trade name: 致冷剂 R410A

企业名称: 浙江衢州联州致冷剂有限公司

Supplier: Zhejiang Quzhou Lianzhou Refrigerant Co., Ltd.

地址: 浙江省衢州市巨化厂前路 95 号

Add: 95 Juhua Factory Front RD., Quzhou, Zhejiang.

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Post Code: 324004

联系电话: 0570-3617480

Emergency Telephone: 0570-3617480

企业应急咨询电话: 0570-3617480

Emergency Telephone: 0570-3617480

全国通用消防电话: 119

The National Fire Telephone: 119

传真号码: 0570-3617487

Fox: 0570-3617487

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修订日期: 2013 年 1 月 1 日

Revision Date: Jan. 1ST, 2013.

主要用途: 可用于替代 R22, 主要用于低中温制冷系统

Main Function: Can be used to replace R22, mainly used in low and medium temperature refrigeration system.

限制用途: 无资料。

Limited Function: No data available.

第二部分 危险性概述

Section 2: Hazards Identification

GHS危险性类别:

CHS Hazards Category:

物理危险	健康危害	环境危害
压力下气体: 低压液化气体	未被分类	未被分类

Physical Hazards	Healthy Hazards	Environmental Hazards
Gas under pressure: liquefied gas at low pressure	None Classified	None Classified

标签要素和警示性说明:

Label Elements and Warning Illustration:

象形图:

Pictogram:



信号词: 危险

Signal Word: Dangerous

危险性说明: 在空气中不发生燃烧爆炸。含压力下气体, 如受加热可爆炸。

Hazard Illustration: There is no combustion and explosion in the air. Gases containing pressure can explode if heated.

防范说明

Precautionary Illustration:

【预防措施】

[Precaution Measure]

- 戴防护手套
- Wear Protective Gloves.
- 作业后彻底清洗手等可能接触部位
- Clean hands thoroughly after operation.
- 禁止在工作场所内吸烟。
- No smoking in the workplace.

【事故响应】

[Accident Response]

- **皮肤接触:** 脱去污染衣着, 用肥皂水和清水彻底冲洗皮肤至少 15 分钟。如有冻伤, 就医。
- **Skin Contact:** Take off the clothes and rinse skin thoroughly with soapy water and clean water for at least 15 minutes. If being frostbite, please go to a doctor.
- **火灾时:** 使用雾状水、大量水。
- **On Fire Moment:** Use mist water, plenty of water.
- **食入:** 饮足量温水, 催吐。就医。
- **If Swallowed:** Please drink enough warm water to spit if you accident drink it or else go to a doctor.
- **吸入:** 迅速脱离现场至空气新鲜处, 保持呼吸道通畅。如果呼吸困难, 给输氧; 如呼吸停止, 立即进行人工呼吸。立即呼叫就医。
- **If Inhaled:** Leave the scene quickly to a place with fresh air and keep the respiratory tract unobstructed. If breathing is difficult, therapy oxygen; if breathing stops, perform artificial respiration immediately. Call and go to a doctor.
- **眼睛接触:** 提起眼睑, 用流动清水或生理盐水冲洗。就医。
- **Eye Contact:** Lift the eyelids and rinse with flowing water or normal saline. Go to a doctor.

【安全储存】

[Safety Storage]

- 储存于阴凉、通风的库房。远离火种、热源, 禁止阳光直射。库温不宜超过 30℃, 应与氧化剂、易燃物或可燃物分开存放, 切忌混储。
- Store in a cool and ventilated warehouse. Keep away from fire, heat source and direct sunlight. The storage temperature should not exceed 30 °C. It should be stored separately from oxidants, combustibles or combustibles, avoid mixed storage.

【废弃处置】

[Waste Disposal]

- 根据国家和地方有关法规的要求处置或与厂商或制造商联系, 确定处置方法。
- According to the requirements of national and local laws and regulations, or contact the manufacturer to determine the disposal method.
- 在经批准的场所将残留物和容器掩埋。
- Bury residues and containers in approved locations.

主要症状: 冻伤, 皮肤局部发红, 严重会起泡现象。

Cardinal Symptom: Frostbite, local skin redness, or even blistering

应急综述: 在事故状态下或者您感觉不舒服的时候, 立即就医 (尽可能出示安全警示标签及 SDS)。

Emergency Summary: Go to a doctor in an accident or when you feel uncomfortable (Show safety warning and SDS as much as possible).

第三部分 成分 / 组成信息

Section 3: Composition/Information on Ingredients

纯品 混和物
 Pure Chemicals Mixture

化学品名称: 致冷剂 R410A

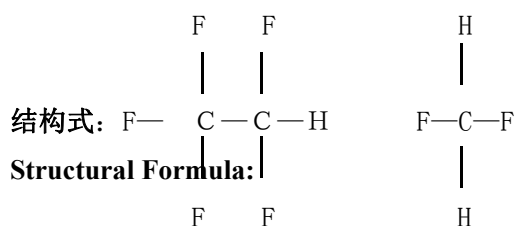
Material Name: Refrigerant R410A

化学品商品名称: 致冷剂 R410A

Material Trade Name: Refrigerant R410A

分子式: $\text{CF}_3\text{CHF}_2/\text{CH}_2\text{F}_2$

Formula: $\text{CF}_3\text{CHF}_2/\text{CH}_2\text{F}_2$



分子量: 72.58

Molecular Weight: 72.58

有害物成分名称	含量 (%)	CAS NO.
五氟乙烷	50%	75-10-5
二氟甲烷	50%	354-33-6

Name of Hazardous Components	Content (%)	CAS NO.
Pentafluoroethane	50%	75-10-5
Difluoromethane	50%	354-33-6

第四部分 急救措施

Section 4: Emergency Measures

吸入: 如果吸入迅速脱离污染区。把病人放卧位, 保持呼吸道通畅, 保暖并使其安静。开始急救时, 首先取出假牙等, 防止阻塞气道。如果呼吸停止, 立即进行人工呼吸, 用活瓣气囊面罩通气或有效的袖珍面具可能效果更佳。呼吸心跳停止, 可进行心肺复苏术。及时送医院或寻求医生帮助。

If Ingested: If inhaled, leave the contaminated area quickly. Place the patient in a lying position, keep the respiratory tract unobstructed, keep warm and quiet. When you start first aid, firstly, remove the denture to prevent airway obstruction. If breathing is stopped, it may be better to ventilate with a valve air bag mask or an effective pocket mask. If Respiratory and cardiac arrest, do cardiopulmonary resuscitation. Send patient to hospital in time or seek medical help.

皮肤接触: 如果发生冻伤, 立即用冷水清洗污染部位 10~15 分钟, 最好浸入水中, 不要涂擦。不要使用热水或辐射热。使用清洁、干燥的敷料包扎。送医院或寻求医生帮助。

Skin Contact: In case of frostbite, immediately clean the contaminated part with cold water for 10-15 minutes. It is better to immerse it in water without smearing. Do not use hot water or radiant heat. Bandage with clean, dry dressings. Send patient to hospital or seek medical help.

眼睛接触: 若有冻伤, 急救同皮肤接触。

Eye Contact: In case of frostbite, the emergency treatment is same as Skin contact.

食入: 不会通过该途径接触。

If Swallowed: Not in this way for danger.

主要症状: 吸入高浓度本品, 可引起心律不齐, 昏迷甚至死亡。接触本品液体可致冻伤。本品为纯窒息性气体高浓度时会降低空气中的氧含量, 使氧的浓度低于支持呼吸、意识和生命所需的浓度即造成意识丧失, 在空气中缺少氧达到一定程度的情况下可迅速发生窒息性死亡。如果呼吸停止立即进行人工呼吸和进行心肺复苏术用活瓣气囊面罩通气或有效的袖珍面具可能效果更佳。呼吸心跳停止。发生冻伤皮肤表面发红, 严重时局部会起泡。

Cardinal Symptom: Inhalation of high concentration of this chemical product can cause arrhythmia, coma and even death. Contact with the liquid may cause frostbite. This product is pure asphyxial gas. When the concentration is high, the oxygen content in the air will be reduced, and the concentration of oxygen will be lower than it required to support breathing, consciousness and life, which will cause the loss of consciousness. When the oxygen in the air reaches a certain degree, asphyxial death can occur rapidly. If breathing is stopped, artificial respiration and cardiopulmonary resuscitation should be carried out immediately. It may be better to ventilate with valve air bag mask or effective pocket mask. Breathing and heartbeat stopped. Frostbite skin surface reddening, or even blistered part of skin.

医疗注意事项: 出示此安全技术说明书给到现场的医生看。

Medical attention: show this safety specification to the doctor who come on site.

第五部分 消防措施

Section 5: Fire Protection

灭火方法: 周围起火时应立即切断气源, 喷水冷却容器, 可能的话将容器从火场移至空旷处。在上风方向扑救。

Fire fighting method: cut off the air source immediately when there is a fire around, spray water to cool the container, and move the container from the fire site to an open place if possible. Fighting fire upwind.

合适灭火剂: 使用雾状水、大量水

Suitable extinguishing media: Mist water, plenty of water.

不合适的灭火剂: 无资料。

Unsuitable extinguishing media: No data available.

有害的燃烧产物: 无资料。

Hazardous combustion products: No data available.

特别危险性: 无资料。

Special risk: No data available.

特殊灭火方法: 无资料。

Special Fighting method: No data available.

保护消防人员特殊的防护装备: 建议应急处理人员戴自给正压式呼吸器

Special protective equipment for firefighters: It is recommended that emergency treatment personnel wear self-contained positive pressure respirator.

第六部分 泄漏应急处理

Section 6: Accidental Release Measures

作业人员防护措施、防护装备和应急处置程序: 迅速撤离泄漏污染区人员至上风处, 并进行隔离, 严格限制出入。建议应急处理人员戴自给正压式呼吸器, 穿一般作业工作服。尽可能切断泄漏源。合理通风, 加速扩散。将漏气的容器移至空旷处, 注意通风。漏气容器要妥善处理, 修复、检验后再用。

Personal precautions, protective equipment and emergency procedures: Quickly evacuate the personnel from the contaminated area to the windward place, isolate them and strictly restrict their access. It is suggested that emergency treatment personnel should wear self-contained positive pressure breathing apparatus and general working clothes. Cut off the leakage source as much as possible. Reasonable ventilation to accelerate diffusion. Move the leaking container to an open place and pay attention to ventilation. Leaking containers should be properly treated, repaired and inspected before reuse.

环境保护措施: 无资料。

Environmental precautions: No data available.

泄漏化学品的收容、清除方法及所使用的处置材料: 无资料。

Methods and materials for containment and cleaning up: No data available.

防止发生次生危害的预防措施: 无资料。

Preventive measures to prevent secondary hazards: No data available.

第七部分 操作处置与储存

Section 7: Handling and Storage

操作处置

Handling

安全处置注意事项: 全部操作在密闭循环的管路和设备中进行。操作场所具有良好的通风; 使用的设备和材料是与生产相协调的; 防止任何产生分解的热场所接触; 不与热源接触; 不与活性产物接触。

Precautions for safe and handling: All operations are carried out in closed circulation pipeline and equipment. The operation site shall be well ventilated; the equipment and materials used shall be coordinated with the production; any hot place causing decomposition shall be prevented from contacting; no contact with heat source; no contact with active products.

储存

Storage

安全储存条件: 储存于阴凉、通风的库房。远离火种、热源, 禁止阳光直射。

Conditions for safe storage: Store in a cool and ventilated warehouse. Keep away from fire, heat source and direct sunlight.

储存技术措施: 应与氧化剂、碱金属、碱土金属等分开存放, 切忌混储。储区应备有泄漏应急处理设备。

Storage technical measures: It should be stored separately from oxidant, alkali metal, alkaline earth metal, etc., and should not be mixed storage. The storage area shall be equipped with leakage emergency treatment equipment.

禁配物: 无资料。

Prohibited substances: No data available.

包装材料: 槽车, 钢瓶 926L

Packing material: Tank car, 926L Cylinder

第八部分 接触控制和个体防护

Suction 8: Exposure Controls/Personal Protection

职业接触限值: 中国 未制定标准

Occupational exposure limits: NO standard in China.

工程控制方法: 提供良好的自然通风条件。

Engineering control method: Provide good natural ventilation conditions.

呼吸系统防护: 呼吸系统一般不需要特殊防护, 高浓度接触时可佩戴自吸过滤式防毒面具(半面罩)。避免高浓度吸入。

Respiratory protection: Respiratory system generally does not need special protection, and self-priming filter type gas mask (half mask) can be worn when exposed to high concentration. Avoid high concentration inhalation.

手防护: 戴一般作业防护手套。

Hand protection: Wear Appropriate Protective Gloves.

眼睛防护: 眼睛一般不需特殊防护。

Eye protection: Eyes generally do not need special protection

皮肤和身体防护: 穿一般作业工作服。

Skin and body protection: Wear appropriate protective clothing.

其它防护: 无资料。

Other Protection: No data available.

第九部分 理化特性

Section 9: Physical and Chemical Properties

化学品的外观与性状: 无数据。

Chemical Appearance: No data available.

气味: 无数据。

Odour: No data available.

PH 值: 无数据。

PH: No data available.

熔点/凝固点: 无数据。

Melting point/freezing point: No data available.

沸点, 初沸点和沸程: -60.9/101.3kPa

Initial Boiling and boiling range: -60.9/101.3kPa

闪点(°C): 无数据。

Flash point: No data available.

爆炸上限(%) (V / V): 无数据。

Upper explosive limited(%) (V / V): No data available.

爆炸下限(%) (V / V): 无数据。

Lower explosive limited(%) (V / V): No data available.

饱和蒸气压(kpa): 无数据。

Saturated vapour pressure(kpa): No data available.

相对蒸气密度(空气=1): 64.6kg/m³/30°C

Relative vapour density(Air=1): 64.6kg/m³/30°C

相对密度(水=1): 无数据。

Relative density(Water=1): No data available.

溶解性: 无数据。

Water solubility: No data available.

n-辛醇 / 水分配系数: 无数据。

Partition coefficient: n-octanol/water: No data available.

自然温度: 无数据。

Auto-ignition temperature: No data available.

分解温度: 无数据。

Decomposition Temperature: No data available.

第十部分 稳定性和反应性

Suction 10: Stability and Reactivity

稳定性: 稳定。

Stability: Stable.

危险反应: 无资料。

Possibility of hazardous reactions: No data available.

应避免的条件: 高温、明火

Conditions to avoid: High temperature, Open fire.

不相容物质: 强氧化剂、铝、镁、锌、碱金属、碱土金属

Incompatible materials: Strong oxidant, aluminum, magnesium, zinc, alkali metals, alkaline earth metals.

危险的分解产物: 无资料。

Hazardous decomposition products: No data available.

第十一部分 毒理学信息 Section 11: Toxicological Information

急性毒性: 无资料。

Acute toxicity: No data available.

皮肤刺激或腐蚀: 无资料。

Skin corrosion/irritation: No data available.

眼睛刺激或腐蚀: 无资料。

Serious eye damage/eye irritation: No data available.

呼吸或皮肤过敏: 无资料。

Respiratory or skin sensitization: No data available.

致突变性: 无资料。

Mutagenicity: No data available.

致癌性: 无资料。

Carcinogenicity: No data available.

生殖毒性: 无资料。

Reproductive toxicity: No data available.

特异性靶器官系统毒性—单次接触: 无资料。

Specific target organ toxicity-single exposure: No data available.

特异性靶器官系统毒性—重复接触: 无资料。

Specific target organ toxicity-repeated exposure: No data available.

吸入危害: 无资料。

Aspiration hazard: No data available.

毒代动力学、代谢和分布: 无资料。

Toxicokinetics, metabolism and distribution: No data available.

第十二部分 生态学信息 Section 12: Ecological Information

生态毒性: 无资料。

Ecological Toxicity: No data available.

持久性和降解性: 无资料。

Persistence and degradability: No data available.

潜在的生物积累性: 无资料。

Bio-accumulative potential: No data available.

土壤中的迁移性: 无资料。

Mobility in soil: No data available.

其它有害效应: 无资料。

Other adverse effects: No data available.

第十三部分 废弃处置

Section 13: Disposal Considerations

废弃物性质: 无资料。

Waste property: No data available.

废弃物处置方法: 根据国家和地方有关法规的要求处置或与厂商或制造商联系, 确定处置方法。

Waste treatment methods: According to the requirements of national and local laws and regulations, or contact the manufacturer to determine the disposal method.

废弃注意事项: 在经批准的场所将残留物和容器掩埋。

Waste Considerations: Bury residues and containers in approved locations.

第十四部分 运输信息

Section 14: Transport Information

联合国危险货物编号: 3163

UN number: 3163

联合国运输名称: 无资料。

UN Proper shipping name: No data available.

联合国危险性分类: 第 2.2 类 非易燃无毒气体

UN Hazard class: Class 2.2 non flammable and non-toxic gases.

中国危险货物编号: 无资料。

PRC number: No data available.

中国铁危编号: 无资料。

PRC railway-danger number: No data available.

包装类别: 无资料。

Packaging category: No data available.

包装标志: 不燃气体

Packaging symbol: Non-flammable gas



海洋污染物: 否

Marine Pollutants: None

运输注意事项: 无资料。

Shipping Considerations: No data available.

第十五部分 法规信息 Section 15: Regulatory Information

《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二十八次会议通过);
“Production safety law of the people's Republic of China”(adopted at the 28th meeting of the Standing Committee of the Ninth National People's Congress on June 29, 2002);

《中华人民共和国职业病防治法》(2011年12月31日第十一届全国人大常委会第二十四次会议通过);

“Law of the people's Republic of China on prevention and control of occupational diseases”(adopted at the 24th Meeting of the Standing Committee of the Eleventh National People's Congress on December 31, 2011);

《中华人民共和国环境保护法》(1989年12月26日第七届全国人大常委会第十一次会议通过);
“Environmental protection law of the people's Republic of China”(adopted at the 11th meeting of the Standing Committee of the Seventh National People's Congress on December 26, 1989);

《危险化学品安全管理条例》(国务院第591号令,2011年12月1日起施行),针对危险化学品的生产、储存、使用、经营和运输的安全管理,作了相应规定;

“Regulations on the safety management of hazardous chemicals”(Decree No. 591 of the State Council, effective from December 1, 2011), has made corresponding provisions on the safety management of production, storage, use, operation and transportation of hazardous chemicals;

废弃危险化学品的处置,依照有关环境保护的法律、行政法规和国家有关规定执行;

The disposal of waste hazardous chemicals shall be carried out in accordance with the relevant environmental protection laws, administrative regulations and the relevant provisions of the state;

《工作场所安全使用化学品规定》(劳部发[1996]423号);

“Regulations on safe use of chemicals in Workplace”(LBF [1996] No. 423);

《关于印发首批重点监管的危险化学品安全措施和应急处置原则的通知》安监总厅管三〔2011〕142 号;

“Notice on printing and distributing the safety measures and emergency disposal principles of the first batch of hazardous chemicals under key supervision” (ajtgts [2011] No. 142);

《工作场所有害因素职业接触限值 第 1 部分: 化学有害因素》(GBZ2.1-2007) 对工作场所有害因素的职业接触限值作出了相应规定;

“Occupational exposure limits for hazardous factors in the Workplace Part 1: chemical hazardous factors” (gbz2.1-2007) has made corresponding provisions on the occupational exposure limits of hazardous factors in the workplace;

安全技术说明书的编写根据《化学品安全技术说明书内容和项目顺序》(GB/T16483-2008);

The preparation of safety technical specification is based on “the contents and project sequence of chemical safety technical specification” (GB / t16483-2008);

安全标签的编写根据《化学品安全标签编写规定》(GB15258-2009)。

The preparation of safety labels shall be in accordance with “the provisions on the preparation of chemical safety labels” (gb15258-2009).

第十六部分 其它信息

Section 16: Other Information

本信息是根据我们所掌握的知识所编制, 仅用于健康、安全和环境的目的。请不要将本信息作为任何形式的担保。请对可能使用、处置和需要安全操作本产品的人员提供必要的培训。

This information is based on our knowledge and is intended for health, safety and environmental purposes only. Please do not use this information as a warranty of any kind. Please provide necessary training for personnel who may use, dispose of and need to operate this product safely.