

Material Safety Data Sheet

1、 Product and company information

Product name: COMPRESSED AIR CLEANERS

Part No.: CK-CAD2; CK-CAD4

Description: Compressed air cleaners, 400 ml, 600ml

2、 Hazardous outline

Classification of chemical substances: flammable high pressure gas

The most important hazard and effect

Danger: the gas is non-corrosiveness but is flammable. When it is exposed to the air in the state of liquid, plenty of surround latent heat of evaporation will be taken away and then evaporation will happen. Therefore, cold injury will occur to human body when the skin contacts it. When the gas is released, cold aerial fog and explosive mixed gas may generate, and the mixed gas will spread all around. The aerial fog is heavier than air and is detained on the earth's surface. When it meets spark or open fire, it will be on fire and explore. The mixed gas will constantly spread along the earth's surface. When it is on fire, it will release backfire to the distance. In addition, after evaporation, the capacity will increase. As a result, if it is released in a closed room (even if there is no combustion source), human will be asphyxy because of oxygen concentration decreases. Therefore, sufficient ventilation shall be conducted by adopting air discharge equipment of explosion proof type. Furthermore, when it ventilates, the perimeter shall be ensured without combustion source.

Hazardous: it is with slight narcoticness. When human body is exposed in the environment with 7.5% high concentration, the appearance of human body will not change even if human may feel uncomfortable. Furthermore, contacting with liquefied gas, the skin will have inflammation or be frostbitten.

Environmental effect: for effect on ozonosphere and global warming, please see items of 12. Environmental impact report.
Due to hydrocarbon structure, it may become

photochemical oxidant, and the life existing in upper atmosphere is 3—30 hr.

3、Component

Classification for elementary substance and blending: blending

Containing composition and content

Composition name	Chemical formula	CAS No.	Content (Quality %)
Dimethyl Ether (DME)	$(\text{CH}_2)_2\text{O}$	115-10-6	100%

4、Emergency measure

After inhalation: if gas with high concentration is inhaled, the inhalation person shall immediately transfer to place with fresh air. Then the human body shall be wrapped with woolen blanket etc. to keep warm and make the inhalation person keep calm. Doctor treatment shall be received promptly. If the inhalation person has stopped breathing or weakly breathes, the clothes shall be unfastened. On the basis of ensure that the respiratory tract is clear, artificial respiration shall be conducted. The inhalation person shall be made to inhale oxygen in accordance with specific circumstance, and then doctor treatment shall be received promptly.

After attached to skin: if human body only contacts with gas, harm will not happen to human body at this moment. If human body contacts with liquid, cold injury may happen. At this moment, bedewed clothes, shoes and socks with liquid shall be promptly taken off and the attachment part shall be sufficiently cleaned with lots of cold water or warm water. If there is irritation, doctor treatment shall be received promptly.

After entering into the eyes: if eyes contact with liquid, eyes shall be washed with clean running water immediately for more than 15 min. and then doctor treatment shall be received promptly.

After drinking: as the product is gas in normal temperature and normal pressure, it is impossible to be drunk when it is normally used.

5、Emergency measure for fire hazard

Extinguishing agent: water, dry chemical powder (ABC), carbon dioxide

Extinguishing method: if the perimeter is on fire, the container shall be transferred to a safe place. If it can not be transferred, it shall be cooled by water injection to avoid damaging the container. As the container may fracture, enough distance shall be kept when cooling. If the gas ejects from the container due to high temperature, it

means that the container may explode. At this time, staff shall hide in safe place. When it is attached to the container, the container shall be kept away from combustible as far as possible. Cooling shall be conducted by injecting lots of water, and gas leakage may be stopped if safety can be ensured at this time. Before the leakage part is blocked up, extinguishment shall not conduct. Otherwise, explosive mixed gas may generate.

6、 Emergency measure for leakage

Method to clear: if it can conduct in a safe condition, leakage part of the container shall be blocked up to avoid gas leakage. If the gas can not be stopped to leak from container, the container shall be transferred to an open place without danger to release gas. When the large amount of gas leak, nearby staff shall transfer, and the perimeter of leakage place shall be surrounded with rope to prohibit staff entering. If necessary, staff shall wear preserver for breath.

Matters needing attention for human body: staff that is in favorable wind direction shall leave, and gas shall be fully released by the way of ventilating on the basis of fully notice the nearby condition of fire.

Matters needing attention for the environment: no special requirement.

Safety appliance: if necessary, protective clothing, fire-proof suit, air breathing apparatus, circulating oxygen inhaler, rubber glove or rubber long boot shall be worn

7、 Matters needing attention for handling and storage

Matters needing attention for handling:① when spraying, the time interval between two times of spray shall be 1-3sec. If continuous spray conducts, temperature of the container will sharply decrease.

②More tan 10cm to the jet orifice.

③Do not use by aiming to human body.

④As it is tend to become explosive gas after mix with air, gas leakage shall be fully noticed. In the meanwhile it shall avoid contacting with object, object with high temperature and strong acid agent that may scintillate (electrostatic spark), flame or arc. It shall not be used for various products or equipment that is energizing

⑤Please do not continuously use in the place that gas is

likely to detain. It shall be used after a while.

⑥ Please do not use large amount of it in closed room.

⑦ Gas is harmful for human body and notice to avoid inhalation.

⑧ Please do not use large amount of it for one time.

Matters needing attention for storage: ① Container shall be erected for storage.

② Container shall be stored in the well-ventilated place with low temperature and without direct sunshine.

③ Container shall be stored in dry place to prevent container generating corrosion due to moist or water drop.

④ The storage temperature of container shall be kept below 40°C.

⑤ Measures shall be taken to protect container from impacting due to turnover etc., and valve shall be protected from damaging.

⑥ Keep away from place that may occur hot gas, spark and flame.

⑦ It shall be kept in the place that children can not reach.

8、Anti-exposure and protective measures.

Management concentration: Not set

Acceptable concentration: dimethyl ether

Chinese Industrial Health Standard

No records

However, as the reference value obtained on basis of animal test conducted by Netherlands government, the allowable concentration is 10,000ppm.

Safety of equipment used to be ensured: when it is used in indoor workplaces, occurrence source shall be sealed, or partial ventilation equipment shall be set. Equipment with blast resistant construction, exhaust fan and other electrical equipment shall be used.

Safe spray device, hand sink, eye bath facility etc. shall be set near the place used, and the places shall be clearly marked.

Safety appliance: preserver for breath, goggle, protective gloves, protective clothing etc. shall be worn as required.

9、Physicochemical property

	Dimethyl ether
Appearance	Colorless and transparent liquefied gas
Smell	Slightly sweetness can be smelled
Boiling point	-24.82°C

Melting point	-141.5°C
Flash point	-41.1°C
Ignition point	350°C
Explosion limit	3.4-27vol%
Liquid proportion	0.661(20°C)
Vapor proportion	1.59(air =1、25°C、1 atmosphere pressure)
Water solubility	7.0g/100g H ₂ O (18°C、1 atmosphere pressure)

10、 Stability and reactivity

Stability and reactivity: If it is in inert atmosphere, it is still in thermally stable state even if the temperature is 400°C. At normal pressure and temperature, it is not likely to react with acid-base. The chemical property is inert.

Corrosion: without special property.

After the gas mixes with the air, explosive mixed gas may generate when the gas concentration is 3.4—27vol%.

11、 Hazardous report

Dimethyl ether

Acute toxicity (little white mouse after inhalation) LC50:300g/m³

(big white mouse after inhalation) LC50:385,940ppm/30min.

Chronic toxicity (big white mouse after inhalation) with 20,000ppm/30 weeks' toxicity sign for liver

Irritant

Even if it seldom harms skin, skin will be frostbitten when skin contacts with the gas under liquid state. It will irritate mucosa etc. after enter eye.

Mutagenicity (salmonella) 119,000ppm/48 hr. without variation

Teratogenicity (big white mouse after inhalation) 28,000ppm/6~15 days without teratogenicity

Carcinogenicity and other toxicity without report.

12、 Environmental impact report

	Dimethyl ether
Ozone depletion coefficient	0 (but CFC-11 is 1.0)
Coefficient resulting in global warming	2 (but CO ₂ is 1.0, can accumulate for 100 years)
Ecological accumulation	No data

rate	
Decomposability	No data
Toxicity of fish	No data
Others	Due to hydrocarbon structure, it may become photochemical oxidant, and the life existing in upper atmosphere is 3—30 hr.

13、Matters needing attention for abandonment

All gas shall be released in the outdoor that is without combustion source (press on the button until there is completely no ejection sound.), and abandonment shall be conducted in accordance with classification specification of local government.

14、Matters needing attention for transportation

It shall be confirmed that there is no damage and leakage for the container. When loading, container shall not be damaged due to impact, turnover and falling, and anti-caving measures shall be taken. In transportational process, direct sunlight shall be avoided.

UN classification: 2.1 (Dimethyl ether)

UN number: 1950 (Dimethyl ether)

Product manager



The Netherlands / Feb. 14, 2017

Place and Date

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