



MATERIAL SAFETY DATA SHEET

PCO

Phase Change Material

Revision: Feb 2008

PRODUCT IDENTIFICATION

Name:	PCO
UN No.:	None allocated
CAS Registry No.:	None allocated
Dangerous Goods Class:	Non dangerous
Hazchem Code:	None allocated
EPG:	None allocated
IMDG:	None allocated
Packaging Group:	None allocated

PHYSICAL DESCRIPTION AND PROPERTIES

Appearance:	White-cream crystalline solid. Clear to milky white above melting point.
Composition: (excluding water)	Ammonium bicarbonate (min. 90%) Proprietary salts (max. 10%)
Melting Point:	0°C
Boiling point:	NA (decomposition commences at ~45C)
Vapour pressure:	NA
Flammability Limits LEL:	Not applicable
UEL:	Not applicable
Autoignition temperature:	NA
Solubility:	Slightly soluble in water.
pH:	~ 8

STABILITY AND REACTIVITY

Stability	Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products	Burning may produce ammonia and nitrogen oxides.
Hazardous Polymerization	Will not occur.
Incompatibilities	Can react with acids, caustic alkalis and strong oxidizing agents. In the case of alkalis there is the possibility of ammonia vapour release.
Conditions to Avoid	Heat, incompatibles.

HEALTH HAZARD INFORMATION

1. Acute Health Effects

Ingestion

Single dose oral toxicity is low. Ingestion may cause gastrointestinal irritation. (Acute oral LD₅₀ for rats is > 10000 mg/kg)

Eye

May cause mild to moderate irritation in the most severe and untreated cases.

Skin

Short single exposure is unlikely to cause skin irritation. Prolonged or repeated skin exposure may cause mild or moderate skin irritation. (Acute dermal LD₅₀ is > 5000 mg/kg)

Inhalation

Vapours do not pose an acute health risk.

2. Chronic Health Effects

The components are not listed by IARC, NTP or PHSA as carcinogens for hazard communication purposes.

3. First Aid

Swallowing

If swallowed do not induce vomiting. Give plenty of water. Consult a physician.

Eye

Irrigate with water immediately and continuously for at least 15 minutes. Consult a physician.

Skin

Wash affected area with water either locally or under shower. If irritation persists consult a physician.

Inhalation

In the event of any discomfort associated with vapour inhalation remove patient to a well ventilated fresh air area. Rinse mouth and gargle with water. Consult a physician if irritation persists.

PRECAUTIONS FOR USAGE

1. Exposure standards

Exposure limits have not been established on TLV basis for continuously working with the product.

2. Engineering Controls.

Ensure adequate ventilation as per Good Manufacturing Practice.- no special controls required.

3. Personal Protection

No special PPG equipment is required for the handling of PCO. However, good manufacturing practice will include: safety glasses and gloves. The product has a very low vapour pressure associated with ammonia - where the ammonia concentration in the working/handling environment exceeds 25ppm then an air purifying respirator should be used.

4. Flammability

The product is not combustible however if involved in a fire the release of ammonia, nitrogen oxides and carbon dioxide may require the use of self-contained breathing apparatus.

SAFE HANDLING INFORMATION

1. Storage and Transportation

Transport and store the product under dry and cool conditions - ideally below 30°C. Container should be sealed to air tightness. The containers should be suitably flexible to retain containment integrity with a variation in volume of the product of ~10% between its solid and liquid phases above and below 0°C.

2. Spills and Disposal

Recovery of spilt solids or liquid should be placed in suitable, labeled containers for re-use. Wash down affected area with excess water. Where it is not possible to reuse the recovered product then disposal should observe all local, state and federal regulations governing the disposal of ammonium bicarbonate waste.

3. Fire and Explosion Hazard

If it heated sufficiently due to proximity to a fire, it can decompose to give off noxious carbon and nitrogen oxides and ammonia containing gases. Where possible the product should be removed from the proximity to a fire.

4. Packaging and Labeling

There are no labeling requirements specified by regulatory authorities for PCO.

Safety phrase recommended include:

- Keep out of reach of children
- Avoid contact with skin and eyes
- If swallowed seek medical advice

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