MSDS - Potassium Carbonate (DCad Plus)

Issue Date - October 26, 2007

Section 1. Product Identification

Product Name: Potassium Carbonate, 1.5 - Hydrate, Crystals

DCad Plus™ Feed Grade Potassium Carbonate

Distributed by Pestell Minerals & Ingredients, New Hamburg, ON Canada

24 Hour Emergency Telephone (Canutec): 613-996-6666

Section 2. Composition/Information on Ingredients

Carbonic acid, dipotassium salt, sesquihydrate - 100% by wt

CAS #584-08-7

Chemical Formula: K_2CO_3 x 1.5 H_2O

Synonyms/Common Names: PotCarb, Potash, Pearl Ash, Potassium Carbonate, 1.5 Hydrate, Sesquihydrate.

Hazards Identification

Emergency Overview

White granular powder, no distinct odor

Severe eye irritant. Slightly toxic by ingestion. Prolonged or repeated contact with all body tissues may result in tissue destruction if not properly treated.

Not a fire hazard.

Potential Health Effects

Eye: Severely irritating with potential for permanent injury if not treated immediately.

Skin Contact: Irritant, especially in concentrated solutions or when powder (or skin) is wet.

Prolonged or repeated exposure, especially with abraded skin, may cause irreversible damage.

Ingestion: Slightly toxic on ingestion. May be severely irritating to mucous membranes in the

alimentary tract (mouth, throat, esophagus and stomach), depending upon the amount ingested.

Inhalation: Dust may cause irritation and damage to the upper respiratory tract and possibly the lung tissue, depending upon the severity of exposure.

Subchronic Effects/Carcinogenicity: None known. Not listed as a carcinogen or potential carcinogen by IARC, NTP, OSHA or ACGIH.

Section 3. Physical & Chemical Properties

Appearance: White granular powder

Odor: None

Physical State: Solid

pH (1% soln. w/v): Approximately 11.6 (0.02 moles/liter has pH 11.0)

Vapor Pressure: Not applicable

Boiling Point at 760mm Hg: Not applicable

Melting Point: 891^{o}C

Solubility in Water % by wt: Complete

Specific Gravity (water=1): 2.04 at 20^{o}C

Density: 65-70lbs/ft3 at 20^{o}C

% Volatile: N/A

Volatile Organic Compounds: Not applicable

Molecular Weight: 165.24

Section 4. Fire Fighting Measures

Flammable Properties

Flashpoint: Not combustible

Flammable Limits: LFL/UFL: Not combustible

Method Used: Not applicable

Extinguishing Media: Non-combustible material. Use extinguishing media appropriate for surround fire.

Fire Fighting Instructions: Carbon Dioxide and irritating dusts may be generated by thermal decomposition making necessary the use of self contained breathing apparatus (SCBA) and full protective equipment (Bunker Gear). Carbon Dioxide is an asphyxiant at levels over 5% w/w.

Potassium Oxide, a respiratory, eye and skin irritant, may be generated at temperatures above 1564^{o}F.

Section 5. Stability and Reactivity

Chemical Stability: Stable under normal conditions*

Conditions to Avoid: Storage near acids or lime

Incompatibility with Other Materials: Reacts with acids to release CO2. Contact with lime (as CaO or Ca(OH)2) and moisture (water or perspiration) can result in the formation of corrosive caustic potash (KOH).

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, potassium oxide

Hazardous Polymerization: Material is not known to polymerize

*Under most conditions the product is stable, but in contact with strongly acidic or basic materials and water, a reaction can occur producing heat. In hot, humid weather, feed mixes containing DCad Plus and substantial quantities of acidic materials (for example: liquid phosphates, acid molasses, fats containing appreciable amounts of free fatty acids), have the potential to react and give off heat. Adequate separation of these components during the mixing process should prevent this problem from developing. **Add DCad Plus to the mixer last - after the other ingredients have been mixed.** The feed mix temperature should be checked at appropriate time intervals.

Section 6. Toxicological Properties

(All tests conducted in accordance with EPA guidelines)

Eye Effects: Severely irritating (24 hr. MMTS = 70)

Skin Effects: The powder was slightly irritating to the skin (PDII=0.6). Various severities of irritation may result from repeated or prolonged contact. Alkaline solutions can be expected to have a greater irritation effect on the skin. Potassium carbonate was not a skin sensitizer.

Acute Dermal Effects: The acute dermal toxicity was >2000 mg/kg

Acute Oral Effects: LD50 (rat) = 2000 mg/kg

Inhalation: LC50 (rat) = 4.96 mg/l

Aquatic Toxicity

Daphnia magna: EC50 = 430 mg/l: NOEC = 190 mg/l

Bluegill sunfish: LC50 = 230 mg/l: NOEC = 138 mg/l

Rainbow trout: LC50 = 68 mg/l: NOEC = 17 mg/l

Section 7. Exposure Controls/Personal Protection

Exposure Limits

PEL/TLV: Not established

Engineering Controls: Use local exhaust ventilation to maintain dust levels below 10 mg/m3 (ACGIH nuisance dust level for particles not otherwise classified - PNOC).

Respiratory Protection: Wear an approved dust respirator, following manufacturers recommendations, if total dust level exceeds 10 mg/m3. Respiratory protection is recommended as a precautionary measure where any level of potassium carbonate dust is generated.

Protective Gloves: General purpose (cotton/canvas) gloves should be worn for handling dry product. Use impervious gloves such as neoprene when working with solutions.

Eye Protection: Wear chemical safety goggles. Wear full face shield in addition to goggles to protect against splashing when working with solutions. If possible, do not wear contact lenses.

Other Protective Clothing or Equipment: Standard full cover work clothing. Apron where splashing may occur when working with solutions. Eyewash facility and emergency shower should be provided in work area or in close proximity.

Protective Work/Hygienic Practices: No special requirements with respect t chemical exposure other than those noted above. Personal protection with respect to specific applications of this material are the responsibility of the user.

Handling and Storage

Wear protective equipment when handling material to prevent skin and eye contact and inhalation of dust. Store in a cool, dry area away from incompatible substances. Keep containers closed. Potassium carbonate reacts with acids to yield carbon dioxide gas which can accumulate in confined spaces. Do not enter confined spaces until they have been well ventilated and carbon dioxide and oxygen levels have been determined safe. Avoid contact with lime (as CaO or Ca(OH)2) and water to prevent possible formation of corrosive caustic potash (KOH).

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Accidental Release Measures

Wear personal protective equipment. Scoop or sweep up all spilled product and place in clean marked disposal containers. Avoid stirring up dusts. Neutralize the residue with dilute acid and flush to sewer or waste treatment system as permitted. Flush area thoroughly with water.

Disposal Considerations

Dispose of waste product in accordance with all government regulations. State and local regulations may differ from federal. Be sure to consult with sate and local agencies for specific rules.

Section 8. First Aid Measures

Eyes: Immediately flush eyes with a directed stream of low pressure water for at least 15 minutes while holding eyelids apart to insure complete irrigation of all eye and lid tissues. Get immediate medical attention.

Skin: Remove contaminated clothing, including footwear. Wash contaminated areas thoroughly with soap and water. Wash clothing before reuse. Do not reuse footwear that is contaminated on the inner surfaces. Get prompt medical attention if irritation develops.

Inhalation: If symptoms develop, get person out of contaminated area to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give mouth to mouth resuscitation. Get medical attention.

Ingestion: If ingested, do not induce vomiting. If the patient is conscious and can swallow, give several glasses of water or milk to drink. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Section 9. Transportation Information

DOT Shipping Name: Not regulated

Technical Shipping Name: Shipped as Potassium Carbonate

DOT Hazard Class: Not applicable

Hazardous Substance/RQ: Not applicable

DOT Label: Not applicable

DOT Placard: Not applicable

UN/NA Number: Not applicable

Regulatory Information

OSHA: Hazardous under 29CFR 1910.1200

CERCLA Reportable Quantity: None

RCRA: Potassium carbonate waste is not hazardous waste by listing or characteristic.

SARA Title III:

Section 302, Extremely Hazardous Substances: None

Section 311/312, Hazardous Categories: Immediate (acute)

Section 313, Toxic Chemicals: None

Miscellaneous Information

This material is reported in the EPA TSCA Inventory List

The material is listed on the Canadian Domestic Substances List (DSL)

Disclaimer

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