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UNID Co., Ltd. Incheon Plant	MATERIAL SAFETY DATA SHEET (MSDS-GHS)	Issue date : 2010.3.12
	POTASSIUM CARBONATE-Solid	Revised date : 2011.5.11
MSDS-Prod-003(R0)		Page : 1/10

1. IDENTIFICATION

1. Product Name

- 1) Product Name : POTASSIUM CARBONATE - Solid
- 2) Other Name : Dipotassium carbonat, Potash, Pearl ash

2. Recommended Use and Restriction on Use

- 1) General use : Kali Soap • Kali Glass • Optical Glass Materials
 dyeing • tannage • Photos • Analytical reagents, ingredients for
 pharmaceuticals, Chemicals used for operations
- 2) Restriction on Use : Not available

3. Manufacturer/Distributor Information :

Manufacturer	Address	Emergency Phone No. :	Division in charge
UNID Co., Ltd. Incheon Plant	587-84, Hakik-Dong. Nam-Ku, Incheon. Korea.	(TEL)+81-32-830-7777 (FAX)+81-32-832-4491	Environmental Safety Team

Home Page : www.unid.co.kr

2. HAZARD IDENTIFICATION

1. GHS Classification

Physical Hazards	Health Hazards	Environmental Hazards
-	Skin corrosion/irritation Cat. 2 Serious eye damage/irritation Cat. 2 Specific Target organ Toxicity(single exposure) Cat. 3	-

2. GHS label elements, including precautionary statements

1) Hazard symbols



2) Signal word : Warning

UNID Co., Ltd. Incheon Plant

Product Name MSDS-GHS

www.Lagunaclay.com

800-452-4862

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	POTASSIUM CARBONATE-Solid	Revised date : 2011.5.11
MSDS-Prod-003(R0)		Page : 2/10

3) Hazard statement

- . H315 Causes skin irritation
- . H319 Causes serious eye irritation
- . H335 May cause respiratory irritation
- . H336 May cause drowsiness or dizziness

4) Precautionary statement

Prevention	<ul style="list-style-type: none"> - . P264 Wash thoroughly after handling. - . P280 Wear protective gloves/protective clothing/eye protection/face protection. - . P261 Avoid breathing dust/fume/gas/mist/vapours/spray. - . P271 Use only outdoors or in a well-ventilated area.
Response	<ul style="list-style-type: none"> - . P312 Call a POISON CENTER or doctor/physician if you feel unwell. - . P362 Take off contaminated clothing and wash before reuse. - . P302+P352 IF ON SKIN: Wash with plenty of soap and water. - . P332+P313 If skin irritation occurs: Get medical advice/attention. - . P337+P313 If eye irritation persists: Get medical advice/attention. - . P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. - . P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage	<ul style="list-style-type: none"> - . P405 Store locked up. - . P403+P233 Store in a well-ventilated place. Keep container tightly closed.
Disposal	<ul style="list-style-type: none"> - . P501 Dispose of contents/container in accordance with local/regional/national/international regulation.

3. Other hazards which do not result in classification :

- . NFPA Grade (0-4 level) : Health-1, Flammability-0, Reactivity-0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Other name	CAS Number	Contents(%)
POTASSIUM CARBONATE	-	584-08-7	99.5%

Chemical Name	CAS NO	KE NO	UN NO	EN NO
POTASSIUM CARBONATE	584-08-7	TS7750000	-	209-529-3

4. FIRST-AID MEASURES

1. Eye Contact :

- . Immediately Lift eyelid and flush eyes with flowing water .

UNID Co., Ltd. Incheon Plant	MATERIAL SAFETY DATA SHEET (MSDS-GHS)	Issue date : 2010.3.12
	POTASSIUM CARBONATE-Solid	Revised date : 2011.5.11
MSDS-Prod-003(R0)		Page : 3/10

- Lift eyelid and completely remove materials. Ensure irrigation under eyelids by occasionally lifting the upper and lower lids.
- Transport to hospital, or doctor.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

2. Skin Contact :

- Remove contaminated clothing and shoes immediately.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

3. Inhalation :

- If inhalation of fume or combustion, move to the fresh air.
- Go to where the fresh air and If you necessary, Conduct artificial respiration.
- If not breathing, give artificial respiration.
- If breathing is difficult, give oxygen.

4. Ingestion :

- Wash out mouth with water.
- If swallowed do NOT induce vomiting.
- Lay the patient down as head would be lower than body for suffocation prevention if occur vomiting.
- Get medical attention immediately.

5. Delayed and immediate effects and also chronic effects from short and long term exposure :

- May cause eye, skin, respiratory irritation when exposed.
- May cause lung effect of Long-term exposure to dust of high concentrations.
- Ingestion may cause nausea, vomiting and stomach and severe digestive system irritation and burns.
- Inhalation may cause respiratory irritation.
- If contact with skin May cause irritation and Caustic effect is analogous to Potassium hydroxide.
- If contact with eye May cause irritation and Caustic effect is analogous to Potassium hydroxide.

6. First-aid treatment and note to physician :

- Treatment may vary with condition of victim and specifics of incident.

5. FIRE-FIGHTING MEASURES

1. Suitable (Unsuitable) extinguishing media :

- Extinguishing media : Dry chemical powder, CO2, Water, foam.
- If large fire, use regular extinguishing media or flood with fine water spray.
- Unsuitable extinguishing media : Do not use water-jet.

UNID Co., Ltd. Incheon Plant	MATERIAL SAFETY DATA SHEET (MSDS-GHS)	Issue date : 2010.3.12
	POTASSIUM CARBONATE-Solid	Revised date : 2011.5.11
MSDS-Prod-003(R0)		

2. Specific hazards arising from the chemical :

- Non flammability.
- Substance itself does not Burn but Decompose when heated may cause corrosive/toxic fume.
- Fire risk can be ignored but Containers may rupture or explode if exposed.
- Hazardous combustion product :
Thermal decomposition may produce gas or/and fume of Carbon dioxide, carbon monoxide, potassium oxide.

3. Special protection actions and equipments for fire-fighting :

- Firefighters should wear self contained breathing apparatus and protective clothing.
- If safe to do so, remove containers from path of fire.
- If removal is impossible, cool containers and surrounding area with water.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not allow run-off from fire fighting to enter drains or water courses.
- Do not impervious water inside containers.

6. ACCIDENTAL RELEASE MEASURES

1. Personal precautions

- Wear appropriate personal protective equipment and avoid inhalation or contact with eyes and skin.
- Wear appropriate personal protective equipment(see section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION).
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.
- Keep unnecessary people away.
- Ventilate leak areas.
- Avoid dust formation.

Isolate of spilled material(Small spills ; Adsorption of absorbent etc.)

- Possibly collect recoverable product(used for shovel or vaccum vehicle).
- Residue is neutralized for the acid.
- Move container to safe area from the leak area.
- Wear personal protect clothes, protective equipment.

2. Environmental precautions :

- Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.
- If large spills, advise emergency services.

3. Methods and materials for containment and cleaning up

1) Small spills

- Remove the spilled material.
- Use to dry removal method and Suppression occurrence of dust.

UNID Co., Ltd. Incheon Plant	MATERIAL SAFETY DATA SHEET (MSDS-GHS)	Issue date : 2010.3.12
	POTASSIUM CARBONATE-Solid	Revised date : 2011.5.11
MSDS-Prod-003(R0)		Page : 5/10

- 2) Large spills
- For disposal of spilled material in appropriate containers collected.
 - Wash spill area with plenty of water.

7. HANDLING AND STORAGE

1. Handling

- Wear appropriate personal protective equipment(see section 8. EXPOSURE CONTROLS /PERSONAL PROTECTION).
- Avoid contact with incompatible materials.
- Use in a well-ventilated area.
- Do not mixed storage and transportation of grocery, fodder, medicines, food.
- When handling, DO NOT eat, drink or smoke.
- Avoid breathing dust and contact with the eyes, skin.
- Wash hands with soap and water after handling.
- Minimize occurrence of dust and accumulation.

2. Storage Precautionary Statements

- Save and handle applicable laws and regulations.
- the original container should be stored.
- Store away from water or moisture and store in dry area(strong hygroscopic property).
- The container withstand for physical damage should be stored.
- Save in cool, dry and well ventilated place.
- Stored in airtight containers and Avoid contact with water and moistures.
- Absorption is the cause of the reduction of the concentration with Potassium Carbonate.
- Do not store with Volatile Organic Compounds. Product may discolor.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

1. Exposure Limits

- Exposure limit under ISHL(KOREA) : Not applicable
- ACGIH limit : Not applicable
- Biological exposure limits : Not applicable

2. Engineering Controls

- The use of local exhaust ventilation is recommended to control emissions near the source. Laboratory samples should be handled in a fumehood. Provide mechanical ventilation of confined spaces.

3. Personal Protective Equipment

1) Respiratory Protection :

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.

UNID Co., Ltd. Incheon Plant	MATERIAL SAFETY DATA SHEET (MSDS-GHS)	Issue date : 2010.3.12
	POTASSIUM CARBONATE-Solid	Revised date : 2011.5.11
MSDS-Prod-003(R0)		

- Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.
 - Dust, mist, fume-purifying respiratory protection
 - Any air-purifying respirator with a corpuscle filter of high efficiency
 - Any respiratory protection with a electromotion fan(for dust, mist, fume-purifying)
- For Unknown Concentration or Immediately Dangerous to Life or Health
 - Self-contained breathing apparatus(pressure-demand or other positive-pressure mode in combination)
 - Supplied-air respirator with full facepiece
- 2) Eye protection :
 - Wear primary eye protection such as splash resistant safety goggles with a secondary protection faceshield.
 - Provide an emergency eye wash station and quick drench shower in the immediate work area.
- 3) Hand protection : Wear appropriate protective gloves.
- 4) Body protection : Wear appropriate protective cloth.

9. PHYSICAL AND CHEMICAL PROPERTIES

1. Appearance : Liquid / Colorless or white
2. Odor : Odorless
3. Odor threshold : Not available
4. pH : 11.0 (0.02 M Solution)
5. Melting point / Freezing point : 5° F (-15°C)
6. Initial Boiling Point / Boiling Ranges : Decomposition / 234° F (-112°C) / Not available
7. Flash point : Not available
8. Evaporation Rate : Not available
9. Flammability (solid, gas) : Not available
10. Upper/Lower Flammability or explosive limits : Not available
11. Vapor pressure : 12 mm Hg (20°C)
12. Solubility : soluble(water)
13. Vapor density : Not available
14. Relative density : 1.496 (15.6°C) (Water=1)
15. Partition coefficient of n-octanol/water : Not available
16. Autoignition Temp. : Not available (Not applicable)

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MSDS-Prod-003(R0)		

17. Decomposition Temp. : Not available
18. Viscosity : : Not available
19. Molecular weight : 138.21

10. STABILITY AND REACTIVITY

1. Stability

- This material is stable under recommended storage at normal temperature and pressure.

2. Possibility of Hazardous Reaction

- Polymerization : Will not occur.

3. Conditions to Avoid

- Keep away from heat, flame, sparks and source of ignition.

4. Materials to Avoid

- Avoid contact with Oxidants(Acids, nitrates, chlorine bleach, the chlorine used in pools).
- Because the reaction with Aluminum, Fluoro, Magnesium, Silicon, Chlorine Trifluoride, Powder metal should be avoided.

5. Hazardous Decomposition Products :

- Carbon compounds, potassium and it' s compound.

11. TOXICOLOGICAL INFORMATION

1. Information of Exposure route :

- 1) (Respiratory tract) : May cause respiratory irritation.
- 2) (Oral) : Not Classified.
- 3) (Eye · Skin) : Causes serious eye irritation, Causes skin irritation.

2. Delayed and immediate effects and also chronic effects from short and long term exposure

- 1) Acute Toxicity :
 - Oral Toxicity : LD50 > 2000mg/kg b.w.(Rat)
 - Dermal Toxicity : Not available
 - Inhalation Toxicity : Not available
- 2) Skin corrosion/irritation :
 - Irritation is observed.
- 3) Serious eye damage/irritation :
 - Irritation is observed.

UNID Co., Ltd. Incheon Plant	MATERIAL SAFETY DATA SHEET (MSDS-GHS)	Issue date : 2010.3.12
	POTASSIUM CARBONATE-Solid	Revised date : 2011.5.11
MSDS-Prod-003(R0)		Page : 8/10

- 4) Respiratory sensitization : Not available
- 5) Skin sensitization :
 - In the intracutaneous skin sensitisation test, allergic skin reactions is not observed.
- 6) Carcinogenicity : Not applicable
- 7) Germ cell mutagenicity :
 - Ames test : Negative
 - Gene mutation(mammalian cell gene mutation assay) : Negative
 - Chromosome aberration(mammalian chromosome aberration test) : Negative
- 8) Reproductive toxicity :
 - No adverse effects were observed in the reproductive sturdy using the rats for high concentration.
- 9) Specific Target organ Toxicity(single exposure) :
 - May cause respiratory irritation.
- 10) Specific Target organ Toxicity(repeated exposure) :
 - No adverse effects are observed in the repeated exposure sturdy using the rodents.
- 11) Aspiration hazard : Not available

12. ECOLOGICAL INFORMATION

1. Ecotoxicity :
 - Acute aquatic toxicity
 - Fish : LC50=68mg/L, 96hr, Oncorhynchus mykiss
 - Daphnia magna : EC50=430mg/L, 48hr, Daphnia magna(non-GLP)
 - Algal : Not available
2. Persistence and degradability : Not available
3. Bioaccumulation : Not available
4. Mobility in soil : Not available
5. Other adverse effects : Not available

13. DISPOSAL CONSIDERATIONS

1. Disposal methods :
 - The user of this product must properly characterize the waste/container generated from the use of this product in accordance with all applicable federal, state and/or local laws and regulations in order to determine the proper disposal of the waste in accordance with all applicable federal, state and/or local laws and regulations.

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	POTASSIUM CARBONATE-Solid	Revised date : 2011.5.11
MSDS-Prod-003(R0)		Page : 9/10

2. Special precautions for disposal

- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with local regulation.

14. TRANSPORT INFORMATION

1. UN Number : Not regulated for transport of dangerous goods
2. UN Proper Shipping name : Not applicable
3. Transport hazard class(es) : Not applicable
4. Packing group : Not applicable
5. Sea pollutants : Not applicable
6. Special precautions for user related to transport or transportation measures :
 - EmS FIRE SCHEDULE : Not applicable
 - EmS SPILLAGE SCHEDULE : Not applicable

15. REGULATORY INFORMATION

1. ISHL(The industrial Safety and Health Law in Korea) : Not applicable
2. The Toxic Chemical Control Act in Korea(TCCA in Korea) : Not applicable
3. Dangerous goods Safety Management Law in Korea : Not applicable
4. Waste Management Law in Korea : Not applicable
5. Other regulations
 - 1) POPs Management Law : Not applicable
 - 2) Information of EU Classification :
 - Classification : Not Classification
 - Symbol(s) and Indication(s) of Danger : Not applicable
 - Risk and Safety Phrases : Not applicable
 - 3) US REGULATIONS :
 - CERCLA section 103 (40 CFR 302.4) : Not regulated
 - SARA section 302 (40 CFR 355.30) : Not regulated
 - SARA section 304 (40 CFR 355.40) : Not regulated
 - SARA Hazard Categories, SARA section 311/312 (40 CFR 370.21)
 - ACUTE: YES
 - CHRONIC: NO
 - FIRE: NO
 - REACTIVE : NO
 - SUDDEN RELEASE : NO
 - SARA section 313 (40 CFR 372.65) : Not regulated
 - OSHA regulation (29 CFR 1910.119) : Not regulated

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MSDS-Prod-003(R0)		Page : 10/10

- . US STATE REGULATIONS :
CALIFORNIA PROPOSITION 65 (Safe Drinking Water and Toxic Enforcement Act)
: Not regulated
- 4) Chemical inventory status:
 - . US inventory (TSCA): listed.
 - . TSCA 12(b) Export Notifications : Not listed.
- 5) Others
 - . Rotterdam Convention on Harmful Chemicals & Pesticides : Not applicable
 - . Stockholm Convention on Persistent Organic Pollutants : Not applicable
 - . Montreal Protocol on Substances That Deplete the Ozone Layer : Not applicable

16. OTHER INFORMATION

1. Reference

- 1) The Korea Occupational Safety and Health Agency ; KOSHA MSDS
- 2) Korea regulations
: Industrial Safety and Health Law, Waste Management Law, Toxic Chemical Control Act,
ENFORCEMENT DECREE OF THE WATER QUALITY AND ECOSYSTEM CONSERVATION ACT.
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