



Material Safety Data Sheet / Safety Data Sheet

Multi-Cal

Section 1. Chemical Product and Company Identification

Product name	: Multi-Cal	Manufactured/supplied
Trade name	: Multi-Cal	Haifa Chemicals Ltd.
Synonym	: Calcium salpetre, CN	P.O. Box 10809,
Fertilizer formula	: $5\text{Ca}(\text{NO}_3)_2 \cdot \text{NH}_4\text{NO}_3 \cdot 10\text{H}_2\text{O}$	Haifa Bay 26120, Israel
Chemical formula	: Not applicable.	Tel: 972-4-8469616
Material uses	: Fertilizer.	Fax: 972-4-8469653
Emergency telephone number	: 972-4-8469603/4	Email: specialty@haifachem.co.il

Section 2. Hazards identification

Physical state	: Solid. (Granular solid.)
Emergency overview	: WARNING! CAUSES EYE AND SKIN IRRITATION. MAY BE HARMFUL IF SWALLOWED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Do not ingest. Avoid contact with skin and clothing. Avoid breathing dust. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.
Routes of entry	: Skin contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects	
Eyes	: Irritating to eyes.
Skin	: Irritating to skin.
Inhalation	: Moderately irritating to the respiratory system.
Ingestion	: May be harmful if swallowed.
Potential chronic health effects	: Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH. Mutagenic effects: Not available. Teratogenic effects: Not available.
Medical conditions aggravated by over-exposure	: Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged exposure to the substance can produce lung damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation.
Over-exposure signs/symptoms	: None known.
See toxicological information (section 11)	

Section 3. Composition, Information on Ingredients

	CAS number
United States	
Calcium Nitrate Tetrahydrate	13477-34-4
Ammonium Nitrate	6484-52-2

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This material is classified as hazardous under OSHA regulations.
See Chapters 8, 11 and 14 for details.

Section 4. First aid measures

- Eye contact** : Check for and remove any contact lenses. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.
- Skin contact** : Wash with soap and water. Get medical attention if symptoms occur.
- Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms appear.
- Ingestion** : Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.
- Notes to physician** : No specific antidote. Medical staff must contact Poison Control Center.

Section 5. Fire fighting measures

- Flammability of the product** : Non-flammable.
- Products of combustion** : Not combustible. Thermal decomposition products are dependent on temperature conditions. These products are water, oxides of calcium and oxides of phosphorous.
- Explosion hazards in the presence of various substances** : Not considered to be a product presenting a risk of explosion.
- Fire-fighting media and instructions** :
Use extinguishing media suitable for surrounding materials.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

- Personal precautions** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, vacuum or carefully scoop up spilled material and place in an appropriate container for disposal by incineration. Avoid creating dusty conditions and prevent wind dispersal.

Section 7. Handling and storage

- Handling** : Do not ingest. Avoid contact with eyes, skin and clothing. Keep container closed. Use only with adequate ventilation. Avoid breathing dust. Wash thoroughly after handling.
- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure controls, personal protection

- Engineering controls** : Use process enclosures, local exhaust ventilation or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
- Personal protection**
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
Recommended: Safety glasses with side shields.
- Respiratory** : Not applicable.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
>8 hour/hours (breakthrough time): Natural rubber (latex).
- Skin/Body** : Not applicable.



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Personal protection in case of a large spill : Safety glasses, goggles or face shield. Impervious gloves. Full suit. Boots. Wear MSHA/NIOSH-approved self-contained breathing apparatus or equivalent and full protective gear.

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties

Physical state	: Solid. (Granular solid.)
Color	: White.
Odor	: Odorless.
pH	: Neutral.
Melting/freezing point	: Weighted average: 527.05°C (980.7°F)
Bulk density	: 1.05 g/cm ³
Vapor pressure	: Not applicable
Evaporation rate	: Not applicable
Viscosity	: Non-viscous substance.
LogK_{ow}	: The product is more soluble in water; log(octanol/water) <1
Solubility	: Easily soluble in methanol, acetone. Soluble in cold water, hot water.

Section 10. Stability and reactivity

Stability and reactivity	: The product is stable.
Conditions of instability	: Decomposes on heating.
Incompatibility with various substances	: Reactive with reducing agents, organic materials, alkalis.
Hazardous decomposition products	: Under fire - oxides of phosphorous, oxides of calcium.
Hazardous polymerization	: Will not occur.

Section 11. Toxicological information

Toxicity data

<u>Ingredient name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
Calcium nitrate	LD50	3900 mg/kg	Oral	Rat
Ammonium Nitrate	LD50	2217 mg/kg	Oral	Rat
	LD50	3000 mg/kg	Dermal	Rabbit

Acute Effects

Eyes	: Irritating to eyes.
Skin	: Irritating to skin.
Inhalation	: Moderately irritating to the respiratory system.
Ingestion	: May be harmful if swallowed.
Potential chronic health effects	: Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH. Mutagenic effects: Not available. Teratogenic effects: Not available.

Section 12. Ecological information

BOD and COD	: Not available.
Biodegradable/OECD	: Not applicable.
Mobility	: Soluble in water.
Persistence/degradability	: Not applicable, since inorganic substance.
Other adverse effects	: Substances, which contribute to eutrophication: Nitrates.

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Section 13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Consult your local or regional authorities.

Section 14. Transport information

Classification

DOT/IMDG/IATA: Not regulated.

Label

Additional information

Section 15. Regulatory information

United States

HCS Classification : Irritating material

U.S. Federal regulations : TSCA: All components listed.
 SARA 302/304/311/312 extremely hazardous substances: No products were found.
 SARA 302/304 emergency planning and notification: No products were found.
 SARA 302/304/311/312 hazardous chemicals: Calcium Nitrate Tetrahydrate; Ammonium Nitrate
 SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Calcium Nitrate Tetrahydrate: Fire hazard, Immediate (acute) health hazard; Ammonium Nitrate: Fire hazard, reactive
 Clean Water Act (CWA) 307: No products were found.
 Clean Water Act (CWA) 311: No products were found.
 Clean Air Act (CAA) 112 accidental release prevention: No products were found.
 Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
 Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	Calcium Nitrate Tetrahydrate	13477-34-4	70 - 100
	Ammonium Nitrate	6484-52-2	7 - 10
Supplier notification	Calcium Nitrate Tetrahydrate	13477-34-4	70 - 100
	Ammonium Nitrate	6484-52-2	7 - 10

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations : Pennsylvania RTK: Ammonium Nitrate: (environmental hazard, generic environmental hazard)
 Massachusetts RTK: Ammonium Nitrate
 New Jersey: Ammonium Nitrate

International regulations International lists

: All components listed are listed on major international inventories or exempted from being listed in Australia (AICS), Europe (EINECS/ELINCS), Korea (TCCL), Japan (METI/MOL), Philippines (RA6969).

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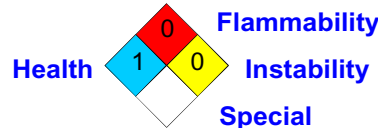
Section 16. Other information

Label requirements : CAUSES EYE AND SKIN IRRITATION.
MAY BE HARMFUL IF SWALLOWED.
MAY CAUSE RESPIRATORY TRACT IRRITATION.

Hazardous Material Information System (U.S.A.) :

Health	1
Fire hazard	0
Reactivity	0
Personal protection	C

National Fire Protection Association (U.S.A.) :



References : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG.

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Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.