# Safety Data Sheet
## acc. to OSHA HCS

Printing date 06/26/2023 Reviewed on 06/26/2023

## 1 Identification

· **Product identifier**

· **Trade name:** DuroKleen

· **Article number:** 6805
· **Application of the substance / the mixture** Water treatment
· **Uses advised against**
Any use carrying a risk of direct contact with eyes/skin where workers are exposed without adequate personal protective equipment (PPE).
Any use involving aerosol formation or vapour release in excess of the assigned WEL where workers are exposed without suitable RPE.
Processes involving the use of incompatible substances - refer to section 10.
Processes involving extreme heat use advised against.
The product is intended exclusively for industrial and professional use.

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**

AP Tech
5130 Rialto Road
West Chester, Ohio 45069, USA
1-866-489-9831
info@aptechsolids.com

· **Information department:** Product safety department.
· **Emergency telephone number:**
CHEMTREC: 800-424-9300 (Domestic North America) OR 703-527-3887 (International, collect calls accepted).

## 2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS03 Flame over circle

Oxidizing Solids 2 H272 May intensify fire; oxidizer.

GHS05 Corrosion

Skin Corrosion 1B H314 Causes severe skin burns and eye damage.
Eye Damage 1 H318 Causes serious eye damage.

GHS07

Acute Toxicity - Oral 4 H302 Harmful if swallowed.

· **Label elements**
· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS03, GHS05, GHS07
· **Signal word** Danger

· **Hazard-determining components of labeling:**
Calcium hypochlorite
Calcium dihydroxide
· **Hazard statements**
May intensify fire; oxidizer.
Harmful if swallowed.
Causes severe skin burns and eye damage.

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· **Precautionary statements**
Keep away from acids.
Take any precaution to avoid mixing with combustibles.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin: Wash with plenty of water.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Collect spillage.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**


Health = 3
Fire = 3
Reactivity = 0

The substance possesses oxidizing properties.
· **HMIS-ratings (scale 0 - 4)**


Health = *3
Fire = 3
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

## 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

| · **Dangerous components:** | | |
|---|---|---|
| 7778-54-3 | Calcium hypochlorite | 50–100% |
| 1305-62-0 | Calcium dihydroxide | 1–2.5% |
| 10043-52-4 | Calcium chloride | 1–2.5% |
| 10137-74-3 | Calcium chlorate | 1–2.5% |

## 4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:**
In case of inhalation:
- Provide fresh air.
- In case of breathing difficulties administer oxygen.
- No mouth-to-mouth or mouth-to-nose resuscitation. Use respiratory bag or oxygen resuscitation apparatus.
- Do not leave patient unattended.

In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
· **After eye contact:**
Check for and remove any contact lenses.
Rinse opened eye for several minutes under running water. Then consult a doctor.

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· **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
· **Information for doctor:** Treat symptomatically and supportively.
· **Most important symptoms and effects, both acute and delayed** Corrosive damage to gastro-intestinal tract.
· **Danger**
Danger of gastric perforation.
Danger of pulmonary edema.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

## 5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
Water spray
Use fire fighting measures that suit the environment.
· **For safety reasons unsuitable extinguishing agents:**
Extinguishing powder
Foam
Water with full jet
· **Special hazards arising from the substance or mixture**
Strong oxidiser. Contact with combustible or flammable substances may cause fire.
Formation of toxic gases is possible during heating or in case of fire.
· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.
Wear fully protective suit.
· **Additional information** Cool endangered receptacles with water spray.

## 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Avoid formation of dust.
Ensure adequate ventilation
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Do not allow to penetrate the ground/soil.
Do not allow product to reach sewage system or any water course in the undiluted form.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Send for recovery or disposal in suitable receptacles.
Do not use combustible materials such as paper towels to clean up spills.
Use neutralizing agent.
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

| · **PAC-1:** | | |
|---|---|---|
| 7778-54-3 | Calcium hypochlorite | 2.6 mg/m³ |
| 1305-62-0 | Calcium dihydroxide | 15 mg/m³ |

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| | | |
|---|---|---|
| 10043-52-4 | Calcium chloride | 12 mg/m³ |

· **PAC-2:**

| | | |
|---|---|---|
| 7778-54-3 | Calcium hypochlorite | 28 mg/m³ |
| 1305-62-0 | Calcium dihydroxide | 240 mg/m³ |
| 10043-52-4 | Calcium chloride | 130 mg/m³ |

· **PAC-3:**

| | | |
|---|---|---|
| 7778-54-3 | Calcium hypochlorite | 170 mg/m³ |
| 1305-62-0 | Calcium dihydroxide | 1,500 mg/m³ |
| 10043-52-4 | Calcium chloride | 790 mg/m³ |

## 7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Avoid direct contact (skin/eye contact, ingestion and/or inhalation of fume/mist/dust) with the product in the undiluted form.
The product must only be handled by authorised, trained and experienced professionals under strictly controlled conditions.
Thorough dedusting.
Rinse contaminated clothing with plenty of water (Fire hazard)
· **Information about protection against explosions and fires:**
Potentially explosive when mixed with organic substances.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Prevent any seepage into the ground.
Do not store in aluminium or galvanised containers.
Do not store on combustible materials such as wooden floors or wooden pallets.
· **Information about storage in one common storage facility:**
Store away from flammable substances.
Store away from combustible materials.
Store away from water.
Do not store together with textiles.
Store away from foodstuffs.
Do not store together with acids.
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Storage class:** 5.1 B
· **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

| **1305-62-0 Calcium dihydroxide** | |
|---|---|
| PEL | Long-term value: 15* 5** mg/m³<br>*total dust **respirable fraction |
| REL | Long-term value: 5 mg/m³ |
| TLV | Long-term value: 5 mg/m³ |

· **Additional information:** The lists that were valid during the creation were used as basis.

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· **Exposure controls**
· **Personal protective equipment:**
Select PPE appropriate for the operations taking place taking into account the product properties.
· **General protective and hygienic measures:**
Do not breathe dust
Do not eat, drink, smoke or sniff while working.
Take note of assigned Workplace Exposure Limits.
Ensure that eyewash stations and safety showers are close to the workstation location.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Contaminated clothes are a fire hazard. Rinse with plenty of water.
· **Breathing equipment:**
Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.
· **Protection of hands:**

Protective gloves conforming to EN374.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**

Tightly sealed goggles conforming to EN166.

· **Body protection:**

Impervious protective clothing

Body protection must be chosen depending on product properties, activity and possible exposure.

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**

| | |
|---|---|
| **Form:** | Tablets |
| **Color:** | White |
| · **Odor:** | Chlorine-like |
| · **Odor threshold:** | Not determined. |

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| | |
|---|---|
| · **pH-value at 20 °C (68 °F):** | 10.5–11.5 (1%) |
| · **Change in condition** | |
| **Melting point/Melting range:** | Undetermined. |
| **Boiling point/Boiling range:** | Undetermined. |
| · **Flash point:** | Cannot support combustion |
| · **Flammability (solid, gaseous):** | Not determined. |
| · **Decomposition temperature:** | Not determined. |
| · **Ignition temperature:** | Product is not selfigniting. |
| · **Danger of explosion:** | Product does not present an explosion hazard. |
| · **Explosion limits:** | |
| **Lower:** | Not determined. |
| **Upper:** | Not determined. |
| · **Vapor pressure:** | Not applicable. |
| · **Density at 20 °C (68 °F):** | 1.3 g/cm³ (10.8485 lbs/gal) |
| · **Relative density** | Not determined. |
| · **Vapor density** | Not applicable. |
| · **Evaporation rate** | Not applicable. |
| · **Solubility in / Miscibility with** | |
| **Water at 20 °C (68 °F):** | 217 g/l |
| · **Partition coefficient (n-octanol/water):** | Not determined. |
| · **Viscosity:** | |
| **Dynamic:** | Not applicable. |
| **Kinematic:** | Not applicable. |
| · **Solvent content:** | |
| **VOC content:** | 0.00 % |
| · **Other information** | NOTE: The physical data presented above are typical values and should not be construed as a specification. |

## 10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
· **Possibility of hazardous reactions**
Reacts with acids releasing chlorine.
Violent reactions with -NHx, -OH and -SH- groups.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:**
Strong acids.
Reducing agents.
Combustible materials.
Flammable materials
· **Hazardous decomposition products:**
Chlorine
Hydrogen chloride (HCl)
Metal oxide

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· **Additional information:**
NEVER MIX THIS PRODUCT WITH ORGANIC CHLORINE (TRICHLOR- or DICHLOR-) WITHIN THE SAME CONTAINER!

## 11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

| · **LD/LC50 values that are relevant for classification:** | | |
|---|---|---|
| **ATE (Acute Toxicity Estimate)** | | |
| Oral | LD50 | 527 mg/kg |

· **Primary irritant effect:**
· **on the skin:** Causes severe skin burns and eye damage.
· **on the eye:** Strong irritant with the danger of severe eye injury.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Corrosive
ROUTES OF EXPOSURE: Can be absorbed into the body by inhalation and by ingestion.
Inhalation may cause lung oedema, but only after initial corrosive effects on eyes and/or airways have become manifest. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered.
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of oesophagus and stomach.

· **Carcinogenic categories**

| · **IARC (International Agency for Research on Cancer)** | | |
|---|---|---|
| 7778-54-3 | Calcium hypochlorite | 3 |

| · **NTP (National Toxicology Program)** |
|---|
| None of the ingredients is listed. |

| · **OSHA-Ca (Occupational Safety & Health Administration)** |
|---|
| None of the ingredients is listed. |

## 12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** The organic portion of the product is biodegradable.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** Product is not expected to bioaccumulate.
· **Mobility in soil** No further relevant information available.
· **Ecotoxical effects:**
· **Remark:** Very toxic for fish
· **Additional ecological information:**
· **General notes:**
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Very toxic for aquatic organisms
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.

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· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Recommended Hierarchy of Controls:
- Minimize waste;
- Reuse if not contaminated;
- Recycle, if possible; or
- Safe disposal (if all else fails).

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Contact waste processors for recycling information.
Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

· **Uncleaned packagings:**
· **Recommendation:**
Do not mix with other waste streams.
Container remains hazardous when empty. Continue to observe all precautions.
Disposal must be made according to official regulations.
Containers, even those that are “empty,” may contain residues that can develop flammable and/or hazardous vapours upon heating. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

| | |
|---|---|
| · **UN-Number** | |
| · **DOT, ADR/RID/ADN, IMDG, IATA** | UN3485 |
| · **UN proper shipping name** | |
| · **DOT** | Calcium hypochlorite mixture, dry, corrosive |
| · **ADR/RID/ADN** | UN3485 CALCIUM HYPOCHLORITE MIXTURE, DRY, CORROSIVE, ENVIRONMENTALLY HAZARDOUS |
| · **IMDG** | CALCIUM HYPOCHLORITE MIXTURE, DRY, CORROSIVE, MARINE POLLUTANT |
| · **IATA** | CALCIUM HYPOCHLORITE MIXTURE, DRY, CORROSIVE |

· **Transport hazard class(es)**

· **DOT**


| | |
|---|---|
| · **Class** | 5.1 Oxidizing substances |
| · **Label** | 5.1, 8 |

· **ADR/RID/ADN**


| | |
|---|---|
| · **Class** | 5.1 Oxidizing substances |

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| | |
|---|---|
| · **Label** | 5.1+8 |
| · **IMDG** | |
|  | |
| · **Class** | 5.1 Oxidizing substances |
| · **Label** | 5.1/8 |
| · **IATA** | |
|  | |
| · **Class** | 5.1 Oxidizing substances |
| · **Label** | 5.1 (8) |
| · **Packing group** | |
| · **DOT, ADR/RID/ADN, IMDG, IATA** | II |
| · **Environmental hazards:** | Product contains environmentally hazardous substances: Calcium hypochlorite |
| · **Marine pollutant:** | Yes (DOT)<br>Symbol (fish and tree) |
| · **Special marking (ADR/RID/ADN):** | Symbol (fish and tree) |
| · **Special precautions for user** | Warning: Oxidizing substances |
| · **Hazard identification number (Kemler code):** | 58 |
| · **EMS Number:** | F-A,S-Q |
| · **Segregation groups** | (SGG8) Hypochlorites |
| · **Stowage Category** | B |
| · **Handling Code** | H1 Keep as dry as reasonably practicable |
| · **Segregation Code** | SG35 Stow "separated from" SGG1-acids<br>SG38 Stow "separated from" SGG2-ammonium compounds.<br>SG49 Stow "separated from" SGG6-cyanides<br>SG60 Stow "separated from" SGG16-peroxides |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Transport/Additional information:** | Not dangerous according to the above specifications. |
| · **DOT** | |
| · **Remarks:** | Special marking with the symbol (fish and tree). |
| · **ADR/RID/ADN** | |
| · **Excepted quantities (EQ)** | Code: E2<br>Maximum net quantity per inner packaging: 30 g<br>Maximum net quantity per outer packaging: 500 g |
| · **IMDG** | |
| · **Limited quantities (LQ)** | 1 kg |
| · **Excepted quantities (EQ)** | Code: E2<br>Maximum net quantity per inner packaging: 30 g<br>Maximum net quantity per outer packaging: 500 g |
| · **UN "Model Regulation":** | UN 3485 CALCIUM HYPOCHLORITE MIXTURE, DRY, CORROSIVE, 5.1 (8), II, ENVIRONMENTALLY HAZARDOUS |



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## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredient is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS03, GHS05, GHS07
· **Signal word** Danger

· **Hazard-determining components of labeling:**
Calcium hypochlorite
Calcium dihydroxide
· **Hazard statements**
May intensify fire; oxidizer.
Harmful if swallowed.
Causes severe skin burns and eye damage.
· **Precautionary statements**
Keep away from acids.
Take any precaution to avoid mixing with combustibles.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin: Wash with plenty of water.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Collect spillage.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.



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## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Contact:**
· **Date of preparation / last revision** 06/26/2023
· **Abbreviations and acronyms:**
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Oxidizing Solids 2: Oxidizing solids – Category 2
Acute Toxicity - Oral 4: Acute toxicity – Category 4
Skin Corrosion 1B: Skin corrosion/irritation – Category 1B
Eye Damage 1: Serious eye damage/eye irritation – Category 1