

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 04/04/2023

Reviewed on 04/04/2023

1 Identification

- **Product Identifier**
- **Trade Name: Synthetic Soil**
- **Relevant identified uses of the substance or mixture and uses advised against:**
- **Product Description:** Synthetic Soil
- **Details of the Supplier of the Safety Data Sheet:**
- **Manufacturer/Supplier:**
 Pickering Laboratories, Inc.
 1280 Space Park Way
 Mountain View, CA 94043
 Phone: (650) 694-6700
 Fax: (650) 968-0749
 www.pickeringlabs.com
 support@pickeringlabs.com
- **Emergency telephone number:**
 Clean Harbors Environmental Services
 1-800-645-8265

2 Hazard(s) Identification

- **Classification of the substance or mixture:**



Health hazard

Carcinogenicity 2 H351 Suspected of causing cancer. Route of exposure: Inhalation.



Corrosion

Eye Damage 1 H318 Causes serious eye damage.



Skin Irritation 2 H315 Causes skin irritation.
 Sensitization - Skin 1 H317 May cause an allergic skin reaction.

- **Label elements:**
- **Hazard pictograms:**



- **Signal word:** Danger
- **Hazard-determining components of labeling:**
 Cement, portland, chemicals
 Carbon black
- **Hazard statements:**
 H315 Causes skin irritation.
 H318 Causes serious eye damage.
 H317 May cause an allergic skin reaction.

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H351 Suspected of causing cancer. Route of exposure: Inhalation.

Precautionary statements:

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
- P264 Wash thoroughly after handling.
- P272 Contaminated work clothing must not be allowed out of the workplace.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P302+P352 If on skin: Wash with plenty of water.
- P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 Immediately call a poison center/doctor.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P363 Wash contaminated clothing before reuse.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Unknown acute toxicity:

This value refers to knowledge of known, established toxicological or ecotoxicological values.

34 % of the mixture consists of component(s) of unknown toxicity.

Classification system: NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme

NFPA ratings (scale 0 - 4)



HMIS-ratings (scale 0 - 4)



Hazard(s) not otherwise classified (HNOC): None known

3 Composition/Information on Ingredients

Chemical characterization: Substance

Description: Mixture of substances listed below with non-hazardous additions.

Dangerous Components:

| | | |
|--------------------------------------|--|--------|
| CAS: 1332-58-7 | Kaolin ⚠ Acute Toxicity - Inhalation 4, H332 | 15-35% |
| CAS: 65997-15-1 RTECS: VV 8770000 | Cement, portland, chemicals ⚠ Eye Damage 1, H318; ⚠ Skin Irritation 2, H315; Sensitization - Skin 1, H317; Specific Target Organ Toxicity - Single Exposure 3, H335 | 15-35% |
| CAS: 8042-47-5 | White mineral oil, petroleum | 2-12% |
| CAS: 1333-86-4 RTECS: FF 5150100 | Carbon black ⚠ Carcinogenicity 1A, H350; ⚠ Skin Irritation 2, H315; Eye Irritation 2A, H319; Specific Target Organ Toxicity - Single Exposure 3, H335 | ≤2.5% |

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· **Additional information:**

The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

4 First-Aid Measures

· **Description of first aid measures**

· **General information:** If symptoms persist, call a physician.

· **After inhalation:**

Consult a doctor if symptoms are present.

Supply fresh air. If required, provide artificial respiration. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in the side position for transportation.

· **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation occurs, consult a doctor.

· **After eye contact:**

Have eyes examined and tested by medical personnel.

Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Get immediate medical attention.

If easy to do so, remove contact lenses if worn.

· **After swallowing:** If swallowed and symptoms occur, consult a doctor.

· **Information for doctor**

· **Most important symptoms and effects, both acute and delayed:**

Kaolin: Prolonged inhalation of excessive levels of kaolin may cause a benign pneumoconiotic condition, not normally associated with a decrement in lung function. In cases of long-term exposure to extremely high levels of dust, progressive fibrosis may occur with lung function impairment.

· **Indication of any immediate medical attention and special treatment needed:** Treat symptomatically.

5 Fire-Fighting Measures

· **Extinguishing media**

· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.

· **For safety reasons unsuitable extinguishing agents:** No further relevant information.

· **Special hazards arising from the substance or mixture:** No further relevant information available.

· **Advice for firefighters**

· **Special protective equipment for firefighters:**

As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6 Accidental Release Measures

· **Personal precautions, protective equipment and emergency procedures:** Not required.

· **Environmental precautions:** No special measures required.

· **Methods and material for containment and cleaning up:**

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Dispose of the collected material according to regulations.

· **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.

· **PAC-1:**

63231-67-4 Silica gel 60

18 mg/m³

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| | | |
|-----------------|---------------|-------------------------|
| 1333-86-4 | Carbon black | 9 mg/m ³ |
| 1317-61-9 | Iron Oxide | 21 mg/m ³ |
| · PAC-2: | | |
| 63231-67-4 | Silica gel 60 | 200 mg/m ³ |
| 1333-86-4 | Carbon black | 99 mg/m ³ |
| 1317-61-9 | Iron Oxide | 230 mg/m ³ |
| · PAC-3: | | |
| 63231-67-4 | Silica gel 60 | 1,200 mg/m ³ |
| 1333-86-4 | Carbon black | 590 mg/m ³ |
| 1317-61-9 | Iron Oxide | 1,400 mg/m ³ |

7 Handling and Storage

- **Handling**
- **Precautions for safe handling:**
 Avoid creating and breathing dust/fume/gas/mist/vapors/spray.
 Ensure good ventilation/exhaustion at the workplace.
 Open and handle receptacle with care.
- **Information about protection against explosions and fires:** Keep protective respiratory device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **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 occupational exposure limits: | |
| 1332-58-7 Kaolin | |
| PEL | Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction |
| REL | Long-term value: 10* 5** mg/m ³ *total dust **respirable fraction |
| TLV | Long-term value: 2* mg/m ³ E; as respirable fraction, A4 |
| 65997-15-1 Cement, portland, chemicals | |
| PEL | Long-term value: 50 mppcf or 15* 5** mg/m ³ *total dust **respirable fraction |
| REL | Long-term value: 10* 5** mg/m ³ *total dust **respirable fraction |
| TLV | Long-term value: 1* mg/m ³ E; *as respirable fraction, A4 |

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| | |
|---|--|
| 8042-47-5 White mineral oil, petroleum | |
| ACGIH TLV | Short-term value: 10 mg/m ³ Long-term value: 5 mg/m ³ |
| OSHA PEL | Long-term value: 5 mg/m ³ |
| 1333-86-4 Carbon black | |
| PEL | Long-term value: 3.5 mg/m ³ |
| REL | Long-term value: 3.5* mg/m ³ *0.1 in presence of PAHs; See Pocket Guide Apps.A+C |
| TLV | Long-term value: 3* mg/m ³ *inhalable fraction, A3 |

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

· **Exposure controls:**

· **Personal protective equipment**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing and wash before reuse.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

· **Breathing equipment:**



NIOSH/OSHA or EN approved respiratory protection is recommended for use in airborne concentrations exceeding exposure limits.

· **Protection of hands:**



Protective gloves

· **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 cannot 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 determined and observed by the manufacturer of the protective gloves.

· **Eye protection:**



Tightly sealed goggles

· **Limitation and supervision of exposure into the environment:** None

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9 Physical and Chemical Properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
 - Form:** Powder
 - Color:** Black or dark brown
- **Odor:** Characteristic
- **Odor threshold:** Not determined.
- **pH-value:** Not determined.
- **Change in condition**
 - Melting point/Melting range:** Not determined.
 - Boiling point/Boiling range:** Not determined.
- **Flash point:** None
- **Flammability (solid, gaseous):** Not determined.
- **Auto igniting:** Not applicable
- **Decomposition temperature:** Not determined.
- **Ignition temperature:** Product is not self-igniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Explosion limits:**
 - Lower:** Not determined.
 - Upper:** Not determined.
- **Vapor pressure:** Not applicable.
- **Density:** Not determined.
- **Relative density:** Not determined.
- **Vapor density:** Not applicable.
- **Evaporation rate:** Not applicable.
- **Solubility in / Miscibility with:**
 - Water:** Soluble.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic:** Not applicable.
 - Kinematic:** Not applicable.
- **Solvent content:**
 - VOC content:** 0.00 %
 - Solids content:** 100.0 %
- **Other information:** No further relevant information available.

10 Stability and Reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Product is stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.

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- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological Information

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

| | | |
|---|----------|--------------------|
| · LD/LC50 values that are relevant for classification: | | |
| 1332-58-7 Kaolin | | |
| Oral | LD50 | >5,000 mg/kg (Rat) |
| Dermal | LD50 | >5,000 mg/kg (Rat) |
| Inhalative | LC50/4 h | >2 mg/l (Rat) |
| 8042-47-5 White mineral oil, petroleum | | |
| Oral | LD50 | >5,000 mg/kg (Rat) |
| 1333-86-4 Carbon black | | |
| Oral | LD50 | 10,000 mg/kg (Rat) |

- **Primary irritant effect:**
- **On the skin:**
Strong caustic effect on skin and mucous membranes.
Irritant to skin and mucous membranes.
May cause an allergic skin reaction.
- **On the eye:**
Strong irritant with the danger of severe eye injury.
Corrosive effect.
Causes serious eye irritation.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant
Carcinogenic
- **Carcinogenic categories:**
- **IARC (International Agency for Research on Cancer):**
Substance listed by IARC. In 1995 IARC concluded, "There is inadequate evidence in humans for the carcinogenicity of carbon black." Based on rat inhalation studies, IARC concluded that there is "sufficient evidence in experimental animals for the carcinogenicity of carbon black" resulting in their classifying carbon black as "possibly carcinogenic to humans (Group 2B).
Group 1 - Carcinogenic to humans
Group 2A - Probably carcinogenic to humans
Group 2B - Possibly carcinogenic to humans
Group 3 - Not classifiable as to its carcinogenicity to humans
Group 4 - Probably not carcinogenic to humans

| | | |
|-----------|--------------|----|
| 1333-86-4 | Carbon black | 2B |
|-----------|--------------|----|

- **NTP (National Toxicology Program):**

| | | |
|------------|---------------|---|
| 63231-67-4 | Silica gel 60 | K |
|------------|---------------|---|

- **OSHA-Ca (Occupational Safety & Health Administration):**

| | | |
|-------------------------------------|--|--|
| None of the ingredients are listed. | | |
|-------------------------------------|--|--|

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12 Ecological Information

- **Toxicity:**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability:** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Not known to be hazardous to water.
- **Results of PBT and vPvB assessment:**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:** No further relevant information available.

13 Disposal Considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household waste. Do not allow product to reach sewage system. Observe all federal, state and local environmental regulations when disposing of this material.
- **Uncleaned packaging**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport Information

- **UN-Number:**
- **DOT, ADR/ADN, IMDG, IATA** Non-Regulated Material
- **UN proper shipping name:**
- **DOT, ADR/ADN, IMDG, IATA** Non-Regulated Material
- **Transport hazard class(es):**
- **DOT, ADR/ADN, ADN, IMDG, IATA**
- **Class:** Non-Regulated Material
- **Packing group:**
- **DOT, ADR/ADN, IMDG, IATA** Non-Regulated Material
- **Environmental hazards:** Not applicable.
- **Special precautions for user:** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.
- **UN "Model Regulation":** Non-Regulated Material

15 Regulatory Information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
- **SARA (Superfund Amendments and Reauthorization):**

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

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| | | |
|---|---|---------------------|
| · TSCA (Toxic Substances Control Act): | | |
| All components have the value ACTIVE. | | |
| · Hazardous Air Pollutants | | |
| None of the ingredients are listed. | | |
| · California Proposition 65: | | |
|  | WARNING: This product can expose you to chemicals including [one or more listed chemical] which is [are] known to the State of California to cause cancer [or birth defects or other reproductive harm]. For more information, go to www.P65Warnings.ca.gov . | |
| · Chemicals known to cause cancer: | | |
| 1333-86-4 | Carbon black | |
| · Chemicals known to cause reproductive toxicity for females: | | |
| None of the ingredients are listed. | | |
| · Chemicals known to cause reproductive toxicity for males: | | |
| None of the ingredients are listed. | | |
| · Chemicals known to cause developmental toxicity: | | |
| None of the ingredients are listed. | | |
| · New Jersey Right-to-Know List: | | |
| 1332-58-7 | Kaolin | |
| 65997-15-1 | Cement, portland, chemicals | |
| 1333-86-4 | Carbon black | |
| · New Jersey Special Hazardous Substance List: | | |
| 1333-86-4 | Carbon black | CA |
| · Pennsylvania Right-to-Know List: | | |
| 1332-58-7 | Kaolin | |
| 65997-15-1 | Cement, portland, chemicals | |
| · Pennsylvania Special Hazardous Substance List: | | |
| None of the ingredients are listed. | | |
| · Carcinogenic categories: | | |
| · EPA (Environmental Protection Agency): | | |
| None of the ingredients are listed. | | |
| · TLV (Threshold Limit Value established by ACGIH): | | |
| 1332-58-7 | Kaolin | 2 mg/m ³ |
| 1333-86-4 | Carbon black | A4 |
| · NIOSH-Ca (National Institute for Occupational Safety and Health): | | |
| 1333-86-4 | Carbon black | |

· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms:**



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· **Signal word:** Danger

· **Hazard-determining components of labeling:**

Cement, portland, chemicals
Carbon black

· **Hazard statements:**

H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer. Route of exposure: Inhalation.

· **Precautionary statements:**

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash thoroughly after handling.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 If on skin: Wash with plenty of water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a poison center/doctor.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
P362+P364 Take off contaminated clothing and wash it before reuse.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P363 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

The product is not subject to be labelled according with the prevailing version of the regulations on hazardous substances.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· **Contact:**

· **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
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

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PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety and Health

OSHA: Occupational Safety & Health Administration

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Toxicity - Inhalation 4: Acute toxicity – Category 4

Skin Irritation 2: Skin corrosion/irritation – Category 2

Eye Damage 1: Serious eye damage/eye irritation – Category 1

Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

Sensitization - Skin 1: Skin sensitisation – Category 1

Carcinogenicity 1A: Carcinogenicity – Category 1A

Carcinogenicity 2: Carcinogenicity – Category 2

Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3

· *** Data compared to the previous version altered.**

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