We create chemistry

Safety Data Sheet
Gardoclean T 160 (Oakite 160)

1. Identification

Product identifier used on the label

Gardoclean T 160 (Oakite 160)

Recommended use of the chemical and restriction on use

Recommended use*: Pickling agent for metal surfaces
Unsuitable for use: Uses other than recommended

* The “Recommended use” identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

24 Hour Emergency Response Information
CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Chemical family: inorganic compounds, organic compounds

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Skin Corr./Irrit.	1	Skin corrosion/irritation
Eye Dam./Irrit.	1	Serious eye damage/eye irritation
Met. Corr.	1	Corrosive to metals

Label elements

Pictogram:

Signal Word:
Danger

Hazard Statement:

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.

Precautionary Statements (Prevention):

P280	Wear protective gloves, protective clothing and eye protection or face protection.
P264	Wash contaminated body parts thoroughly after handling.
P234	Keep only in original packaging.
P260	Do not breathe dust or mist.

Precautionary Statements (Response):

P303 + P361 + P353	IF ON SKIN (or hair): Remove or Take off immediately all contaminated clothing. Rinse skin with water or shower.
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 or physician.
P390	Absorb spillage to prevent material damage.
P363	Wash contaminated clothing before reuse.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Precautionary Statements (Storage):

P405	Store locked up.
P406	Store in corrosive resistant container with a resistant inner liner.

Precautionary Statements (Disposal):

P501	Dispose of contents and container to hazardous or special waste collection point.

Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Sodium Hydroxide
CAS Number: 1310-73-2
Content (W/W): >= 75.0 - <= 100.0%
Synonym: Sodium hydroxide; Caustic soda

sodium carbonate
CAS Number: 497-19-8
Content (W/W): >= 7.0 - < 10.0%
Synonym: Carbonic acid, disodium salt

4. First-Aid Measures

Description of first aid measures

General advice:
First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Remove affected person from danger area. Keep warm, calm and covered up. Immediately remove contaminated clothing. Never give anything by mouth to an unconscious person. In case of intoxication, call a poison control center or physician for treatment advice, taking the packaging or the label of the product. Symptoms of poisoning may occur even after several hours, continue medical observation for at least 48 hours after the accident.

If inhaled:
Immediate medical attention required. Remove the affected individual into fresh air and keep the person calm. If breathing is irregular or stopped, administer artificial respiration.

If on skin:
Flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing immediately and clean before re-use or dispose it if necessary. Immediate medical attention required.

If in eyes:
Remove contact lenses, if present. Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist. Immediate medical attention required.

If swallowed:
Summon medical aid without delay. Do not induce vomiting due to aspiration hazard. Rinse mouth immediately with water. Keep at rest.

Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

Information on: sodium carbonate
Symptoms: Overexposure may cause:, vomiting, circulatory collapse, death, diarrhea

Information on: Sodium Hydroxide
Symptoms: Overexposure may cause:, vomiting, circulatory collapse, death, stenosis, dyspnea, salivation, severe pain
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Hazards: Dusts may cause mechanical irritation to eyes. May cause severe burns of the mouth and throat if orally ingested, as well as a danger of perforation of the oesophagus and the stomach.

Indication of any immediate medical attention and special treatment needed

Note to physician

Antidote:	No known specific antidote.
Treatment:	Symptomatic treatment (decontamination, vital functions).

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
carbon dioxide, alcohol-resistant foam, dry powder, water spray

Unsuitable extinguishing media for safety reasons:
water jet

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
carbon oxides
Fire will produce dense black smoke. Inhalation of dangerous decomposition products may cause serious damage to health.

Advice for fire-fighters

Protective equipment for fire-fighting:
Appropriate breathing apparatus may be required.

Further information:
Cool closed containers in the vicinity of the source of fire. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations. Product itself is non-combustible; fire extinguishing method of surrounding areas must be considered. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Do not inhale dusts. For non-emergency personnel: Use personal protective clothing. Ensure adequate ventilation. Keep away from sources of ignition. For emergency responders: Advice on product handling can be found in sections 7 and 8 of this safety data sheet. Information regarding personal protective measures, see section 8.

Environmental precautions

Do not allow to enter drains or waterways. Do not discharge into the subsoil/soil. If the product enters drains or sewers, the local water company should be contacted immediately; in the case of contamination of streams, rivers or lakes, the Environment Agency.

Methods and material for containment and cleaning up

Avoid dust formation. Contain and collect mechanically and dispose of in accordance with local regulations. Ensure adequate ventilation.

7. Handling and Storage

Precautions for safe handling

Avoid dust formation. Protect against moisture. Provide good ventilation of working area (local exhaust ventilation if necessary). Do not return residues to the storage containers. Smoking, eating and drinking are forbidden in application area. For personal protection see section 8. Comply with the health and safety at work laws. The workplace should be equipped with an emergency shower and eye-rinsing facility. Avoid contact with the skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice.

Protection against fire and explosion:
Avoid dust formation. Avoid all sources of ignition: heat, sparks, open flame. The relevant fire protection measures should be noted.

Conditions for safe storage, including any incompatibilities

Keep away from oxidising agents, from strongly alkaline and strongly acid materials.

Suitable materials for containers: High density polyethylene (HDPE), Low density polyethylene (LDPE), Polyethylenetherephtalate (PET), Polypropylene (PP)

Further information on storage conditions: Keep container dry. Keep in a cool, well-ventilated place. Protect against moisture. Avoid direct sunlight. Store only in corrosion proof containers. Close containers carefully once opened and store them upright in order to prevent any leakage. No smoking. No admission for unauthorised personnel. Always keep in containers of same material as the original one. Observe label precautions. avoid contact with metals

Storage stability:
Storage temperature: < 40 °C

8. Exposure Controls/Personal Protection

Components with occupational exposure limits

Sodium Hydroxide	ACGIH, US:	CLV 2 mg/m3 ;
	OSHA Z1:	PEL 2 mg/m3 ;

Personal protective equipment

Respiratory protection:
Respiratory protection required if exposure limit (if available) may be exceeded

Hand protection:
Chemical resistant protective gloves (EN ISO 374-1), butyl rubber gloves - material thickness: 0.5 mm, nitrile rubber (NBR) - 0.4 mm coating thickness, Performance level 6, corresponding to a breakthrough time of >480 min according to EN ISO 374-1, The protection glove should be tested for its specific suitability (e.g. mechanical strength, product compatibility, anti-static properties)., The gloves should be replaced immediately in case of damage or signs of wear. It is recommended to use preventative skin protection (skin cream).

Eye protection:
Tightly fitting safety goggles (splash goggles) (e.g. EN 166)

Body protection:
Chemical resistant protective clothing according to DIN EN 13034 (Type 6)

General safety and hygiene measures:
Eye wash fountains and safety showers must be easily accessible. Avoid inhalation of dusts. Avoid contact with the skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation. This can be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations at the workplace below the occupational exposure limits, appropriate certified respirators must be worn. Remove contaminated clothing immediately and dispose of safely. Hands and/or face should be washed before breaks and at the end of the shift. Keep separated from food stuffs and feed stocks.

9. Physical and Chemical Properties

Form:	powder
Odour:	odourless
Odour threshold:	No applicable information available.
Colour:	white
pH value:	13.5 (40 g/l, 20 °C)
Melting point:	not determined
Freezing point:	not determined
Boiling range:	not determined
onset of boiling:	not determined
Sublimation point:	No applicable information available.
Flash point:	not applicable
Flammability:	not flammable
Lower explosion limit:	not applicable
Upper explosion limit:	not applicable
Autoignition:	not applicable
Vapour pressure:	(20 °C) not determined
Relative density:	No applicable information available.
Bulk density:	74.81 lb/ft3 1,000 kg/m3
Vapour density:	No applicable information available.
Partitioning coefficient n-octanol/water (log Pow):	No data available.
Thermal decomposition:	No applicable information available.
Viscosity, dynamic:	No applicable information available.
Viscosity, kinematic:	(20 °C) not applicable
Solubility in water:	150 g/l (77 °C)
Miscibility with water:	miscible
Solubility (quantitative):	No applicable information available.
Solubility (qualitative):	No applicable information available.
Molar mass:	No applicable information available.
Evaporation rate:	No data available.

10. Stability and Reactivity

Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:
Corrosive effect on metals.

Oxidizing properties:
not fire-propagating

Chemical stability
The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions
Dust can form an explosive mixture with air. Reacts with metals, with evolution of hydrogen.

Conditions to avoid
Avoid dust formation. Avoid direct sunlight. Avoid humidity. avoid contact with metals

Incompatible materials
metal, Keep away from highly acidic or alkaline substances as well as oxidants in order to prevent exothermal reactions.

Hazardous decomposition products

Decomposition products:
When exposed to high temperatures hazardous decomposition products such as carbon monoxide, carbon dioxide, smoke, oxides of nitrogen may be produced., No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:
No applicable information available.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity
Assessment of acute toxicity: Based on available data, the classification criteria are not met.

Oral
Type of value: ATE
Value: > 2,000 mg/kg
The product has not been tested. The statement has been derived from the properties of the individual components.

Inhalation
Type of value: ATE
Value: > 20 mg/l
The product has not been tested. The statement has been derived from the properties of the individual components.

Dermal
Type of value: ATE
Value: > 2,000 mg/kg
The product has not been tested. The statement has been derived from the properties of the individual components.

Assessment other acute effects
Assessment of STOT single:
Based on available data, the classification criteria are not met.

Irritation / corrosion
Assessment of irritating effects: Corrosive! Damages skin and eyes. May cause severe damage to the eyes.
May cause severe burns of the mouth and throat if orally ingested, as well as a danger of perforation of the oesophagus and the stomach.

Information on: sodium carbonate
Assessment of irritating effects: Not irritating to the skin. Eye contact causes irritation.

Information on: Sodium Hydroxide
Assessment of irritating effects: Highly corrosive! Damages skin and eyes.

Sensitization
Assessment of sensitization: Based on available data, the classification criteria are not met.

Aspiration Hazard
No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity
Assessment of repeated dose toxicity: Based on available data, the classification criteria are not met.

Genetic toxicity
Assessment of mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity
Assessment of carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity
Assessment of reproduction toxicity: Based on available data, the classification criteria are not met.

Teratogenicity
Assessment of teratogenicity: Based on available data, the classification criteria are not met.

12. Ecological Information

Toxicity

Aquatic toxicity
Assessment of aquatic toxicity:
There are no test results available for this product. Do not allow to enter drains or waterways.

Based on available data, the classification criteria are not met.

Persistence and degradability

Assessment biodegradation and elimination (H2O)
No data available concerning biodegradation and elimination.

Bioaccumulative potential

Bioaccumulation potential
No data available.

Mobility in soil

Assessment transport between environmental compartments
No data available.

13. Disposal considerations

Waste disposal of substance:
Do not discharge into drains/surface waters/groundwater. Observe national and local legal requirements.

Container disposal:
Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

14. Transport Information

Land transport
USDOT

Hazard class:	8
Packing group:	II
ID number:	UN 1823
Hazard label:	8
Proper shipping name:	SODIUM HYDROXIDE, SOLID

Sea transport
IMDG

Hazard class:	8
Packing group:	II
ID number:	UN 1823
Hazard label:	8
Marine pollutant:	NO
Proper shipping name:	SODIUM HYDROXIDE, SOLID

Air transport
IATA/ICAO

Hazard class:	8
Packing group:	II
ID number:	UN 1823
Hazard label:	8
Proper shipping name:	SODIUM HYDROXIDE, SOLID

15. Regulatory Information

Federal Regulations

Registration status:
Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

CERCLA RQ	CAS Number	Chemical name
1000 LBS	1310-73-2	Sodium Hydroxide

State regulations

State RTK	CAS Number	Chemical name
NJ	1310-73-2	Sodium Hydroxide
PA	1310-73-2	Sodium Hydroxide

NFPA Hazard codes:
Health: 3 Fire: 0 Reactivity: 1 Special:

HMIS III rating
Health: 3 Flammability: 0 Physical hazard: 1

16. Other Information

SDS Prepared by:
BASF NA Product Regulations
SDS Prepared on: 2023/01/23

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END OF DATA SHEET

GARDOCLEAN® T 160

Powdered, Alkaline Etch for Aluminum

PRIMARY APPLICATION

GARDOCLEAN® T 160, formerly OAKITE 160, is a powdered, caustic aluminum etchant for immersion application. Gardoclean T 160 etches aluminum to eliminate surface imperfections and produce a matte, satin finish. A chelated product, it retards scale buildup in tanks and on heating coils and keeps it soft for easy disposal. Gardoclean T 160 rinses easily and forms a controlled foam blanket to minimize alkali mist and fumes.

CHEMICAL CHARACTERISTICS

Chemical Composition	Sodium hydroxide, sodium carbonate, sequestrants, surfactants
Appearance	Odorless white powder
Foam Tendency	Low to moderate
Biodegradable Surfactants	No
Phosphorous-Free	Yes
NPE Surfactant-Free	Yes

APPLICATION PROCEDURE

Concentration	2 – 6 oz/gal (15 – 45 g/l)
Time	As needed
Temperature	70° - 160°F (21° - 71°C)

SOLUTIONS CONTROL

Bath Initial Charge

Before initially charging the tank with Gardoclean T 160 , make sure it is clean and free of debris. Fill the tank to about 90% of its capacity with room temperature water. Do not heat above 100°F. Slowly add the required amount of Gardoclean T 160 into the tank with mixing. Fill the tank to the operating level with water and raise the temperature of the solution to the operating temperature.

Caution: Adding Gardoclean T 160 powder to water will generate heat. Add Gardoclean T 160 powderslowly to water with good mixing. Be careful not to create localized overheating which could result in spattering. Do not add Gardoclean T 160 powder to hot solution. Never add water to Gardoclean T 160 powder.

Solution Measurement:

Concentration: Gardotest Procedure 92
Sample Size: 5 ml
Factor: 1.2

Etching Activity: Gardotest Procedure 17
Sample Size: 5 ml
Factor: 0.74

Solution Replenishment:

Replenish the bath with Gardoclean T 160 to maintain the concentration.

As the aluminum content increases, the etch rate will decrease. It may be necessary to occasionally discharge part of the bath to reduce the aluminum concentration.

Periodically the tank should be drained, the sludge removed, and the tank and heating surfaces descaled.

EQUIPMENT

Please contact the Chemetall Process Equipment and Engineering Department for specific recommendations.

NOTES ON USE (See Safety Data Sheet)

For longest equipment life, stainless steel tanks and equipment are recommended, preferably types 304 or 316. Mild steel equipment can be used but will provide shorter life due to the corrosive nature of highly alkaline materials. Heating surfaces, pumps and valves should be constructed of stainless steel. As with any chemical, the materials described in this document must be used within the recommended operating ranges for these equipment recommendations to apply.

SAFETY AND HANDLING

Prior to handling and use of any of the materials referenced in this document, the Safety Data Sheets should be read and understood by all personnel in contact with these materials.

KEEP OUT OF REACH OF CHILDREN

STORAGE

Dry indoor storage at temperatures between 40°F and 100°F (4.4°C and 37.8°C) is recommended, away from any incompatible materials referenced in the Safety Data Sheets. All containers should be tightly closed when not in use.

DISPOSAL

Any disposal of the materials referenced in this document should be in accordance with all applicable federal, state, providential and local regulations. The process solution can contain components other than those present in the materials as supplied. Analysis of process solutions may be required prior to disposal.

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