MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Pels® Caustic Soda Beads
PRODUCT ID: 36006
SYNONYMS: Sodium Hydroxide; Anhydrous Sodium Hydroxide, Caustic Soda; NaOH
ISSUE DATE: 10/03/1997
EDITION NO.: 012

PPG Industries, Inc.
One PPG Place, Pittsburgh, PA 15272, USA
24-hour Emergency Telephone Number: 1-304-843-1300

For Product Information (8am-5pm Eastern time):1-800-243-6774 (C/A)

PREPARER: R. Kenneth Lee, Manager, Product Safety

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material/CAS Number	Percent
Sodium Hydroxide 1310-73-2	95-99

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

DANGER! Corrosive - Causes severe burns to eyes and skin.

Precautions: Do not get in eyes, on skin, or on clothing. Corrosive to skin. Even a small amount in the eye can cause blindness. Do not swallow. Avoid breathing dusts or mists from solutions. Use only with adequate ventilation. Ventilation must be sufficient to limit employee exposure to this product below permissible exposure limits. When making solutions or diluting, only add caustic soda slowly to

and vacuums to clean up the spill. If mixed with water, or likely to become mixed with water or any liquid, dike area to contain spill. Reclaim if possible. Or, dilute spill with large amounts of water then neutralize with dilute acid. Use vacuum truck to pick up neutralized material for proper disposal. Properly neutralized liquid residues (pH 6 to 9) may be disposed of in waste water treatment facilities which allow the discharge of neutral salt solutions. After all visible traces have been removed, flush area with large amounts of water.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN DURING HANDLING AND STORAGE:
Wear appropriate personal protective equipment. Never touch eyes or face with hands or gloves that may be contaminated with this product. When making solutions or diluting, only add caustic soda slowly to surface of cold water while stirring. Do not add to warm or hot water, a violent eruption or explosive reaction can result. Avoid contact with organic materials and concentrated acids - may cause violent reactions. Caustic soda reacts with magnesium, aluminum, zinc (galvanized), tin, chromium, brass and bronze, generating hydrogen which is explosive. Caustic soda may react with various sugars to generate carbon monoxide. Hazardous carbon monoxide gas can form upon contact with food and beverage products in enclosed vessels and can cause death. Follow appropriate tank entry procedures (see ANSI Z177.1 - 1977). Do not enter a storage tank or container (truck or rail) that has contained this product, even if it appears empty. Store in a cool, dry, well-ventilated place. Store indoors. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:
8-hour Time Weighted Average (TWA); 15-minute Short-Term Exposure Limit (STEL)

OSHA: 2 mg/cu.m. Ceiling. 29 CFR 1910.1000 (Rev. 3/1/89).

RESPIRATORY PROTECTION: Use a NIOSH approved dust/mist filter respirator for all routine activities when exposure to dusts/mists exceed the permissible exposure limits. The respiratory use limitations made by NIOSH or the manufacturer must be observed. Respiratory protection programs must be in accordance with 29 CFR 1910.134.

VENTILATION: Use local exhaust sufficient to maintain dust/mist levels below permissible exposure limits.

EYE AND FACE PROTECTION: Close fitting chemical safety goggles with faceshield.

PROTECTIVE GLOVES: Nitrile. Neoprene. Natural rubber.

SKIN IRRITATION: ..... Corrosive.
EYE IRRITATION: ..... Corrosive.
ACUTE ORAL LD50: ..... LDLo (rabbit) 500 mg/kg. Corrosive.

CHRONIC EFFECTS/CARCINOGENICITY: This product is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, or OSHA.

MEDICAL CONDITIONS AGGRAVATED: None known.

EFFECTS OF OVEREXPOSURE:

ACUTE:

Eye/Skin: Causes severe burns to the eyes. Small quantities can result in permanent damage and/or loss of vision. For skin contact, corrosive action causes burns and frequently deep ulcerations with subsequent scarring. Prolonged contact destroys tissue. Dust or mist from solutions can cause irritant dermatitis.

Ingestion: Ingestion either in solid or liquid form can cause very serious damage to the mucous membranes or other tissues with which contact is made, and may be fatal.

Inhalation: Inhalation of dusts or mists can cause damage to the upper respiratory tract and to the lung tissue depending on severity of exposure. Effects can range from mild irritation of mucous membranes, severe pneumonitis and destruction of lung tissues.

CHRONIC: The effects of long-term, low level exposures to this product have not been determined. Safe handling of this material on a long-term basis should emphasize the avoidance of all effects from repetitive acute exposures.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:
Highly toxic to aquatic life. 240 ug/l (Bluegill) 96-hour TLM LC50

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:
PPG recommends disposal of dry residues in an approved hazardous waste management facility or by neutralizing and disposing of according to local or permitted regulations. Care must be taken when using or disposing of chemical materials and/or their containers to prevent environmental contamination. It is your duty to dispose of the chemical materials and/or their containers in

for maximum use at 200 mg/l under ANSI/NSF Standard 60.

The following has been revised since the last issue of this MSDS:
Date. Edition. MSDS has been reformatted into 16 sections.

Previous revision date:	02/26/1997
Previous edition number:	011

NA = Not Available

surface of cold water while stirring. Do not add to warm or hot water, a violent eruption or explosive reaction can result. Avoid contact with organic materials and concentrated acids - may cause violent reactions. Caustic soda reacts with magnesium, aluminum, zinc (galvanized), tin, chromium, brass and bronze, generating hydrogen which is explosive. Caustic soda may react with various sugars to generate carbon monoxide. Hazardous carbon monoxide gas can form upon contact with food and beverage products in enclosed vessels and can cause death. Wash thoroughly after handling. Do not eat, drink or smoke in work area.

4. FIRST AID MEASURES

INHALATION: Move person to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

EYE/SKIN CONTACT: In case of contact, immediately flush eyes and skin with plenty of water (soap and water for skin) for at least 15 minutes, while removing contaminated clothing and shoes. Hold eyelids open during this flushing with water. Call a physician. If skin feels slippery, this product may still be present in sufficient quantities to cause rash or burn. Continue washing until slick skin feeling is gone. Thoroughly clean contaminated clothing and shoes before reuse or discard.

INGESTION: If swallowed, give at least 3-4 glasses of water or acidic beverages (tomato or orange juice, carbonated soft drinks). Do not induce vomiting. Do not give anything by mouth to an unconscious or convulsing person. Get medical attention.

NOTES TO PHYSICIAN: Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLASH POINT: None

EXTINGUISHING MEDIA: Not applicable.

SPECIAL FIREFIGHTING PROCEDURES: Contact with some metals (particularly magnesium, aluminum and galvanized zinc) can rapidly generate hydrogen, which is explosive.

6. ACCIDENTAL RELEASE MEASURES

ACTION TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
Only trained personnel equipped with NIOSH approved, full pacepiece combination dust/mist respirators should be permitted in area. For dry material, use appropriate methods, shovels, brooms,

OTHER PROTECTIVE EQUIPMENT: Rubber boots with safety toes, rubber aprons, PVC clothing, and plastic hard hats should be used when necessary to prevent skin contact. Personal protective clothing and use of equipment must be in accordance with 29 CFR 1910.132 (general requirements), .133 (eye and face protection), and .138 (hand protection).

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: 1390 C
VAPOR DENSITY (Air=1): NA
SPECIFIC GRAVITY (Water=1): 2.130
pH: Strongly basic
FREEZING/MELTING POINT: 310-320 C (590-608 F)
SOLUBILITY (wt.% in water): 347g/100g water @ 100 C
BULK DENSITY: 70 lbs/cu.ft. (loose)
VOLUME % VOLATILE: NA
VAPOR PRESSURE: NA
EVAPORATION RATE: NA
HEAT OF SOLUTION: Exothermic
PHYSICAL STATE: Solid Beads
ODOR: Odorless
COLOR: White to Off-White

10. STABILITY AND REACTIVITY

STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur.

INCOMPATIBILITY (CONDITIONS/MATERIALS TO AVOID):
Contact with organic materials and concentrated acids may cause violent reactions. Contact with magnesium, aluminum, galvanized zinc, tin, chromium, brass and bronze generates explosive hydrogen. Reactions with various food sugars may form carbon monoxide.

HAZARDOUS THERMAL DECOMPOSITION/COMBUSTION PRODUCTS:
Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

ACUTE INHALATION LC50: Corrosive

accordance with the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, as well as any other relevant Federal, State, or local laws/regulations regarding disposal.

14. TRANSPORT INFORMATION

USA DOT DESCRIPTION:
Proper Shipping Name: ....Sodium Hydroxide, Solid
Hazard Class: .....8 (Corrosive)
Identification Number: UN1823
Packing Group: II
Reportable Quantity: .....1000 lbs./454 kg

15. REGULATORY INFORMATION

USA TSCA: This product is listed on the TSCA Inventory.
EUROPE EINECS: This product is listed on EINECS. (204-825-9)
CANADA DSL: This product is listed on the Canadian DSL.
AUSTRALIA AICS: This product is listed on AICS.
KOREA ECL: This product is listed on ECL. (2-1256)
JAPAN MITI (ENCS): This product is listed on MITI.

SARA TITLE III:
SARA (311, 312) Hazard Class: Acute Health Hazard. Reactive Hazard.
SARA (313) Chemicals: Not listed.
SARA Section 302: Not listed as an Extremely Hazardous Substance.

CERCLA HAZARDOUS SUBSTANCE: Listed in Table 302.4 of 40 CFR Part 302 as a hazardous substance with a reportable quantity of 1000 pounds. Releases to air, land or water which exceed the RQ must be reported to the National Response Center, 800-424-8802.

CANADA REGULATIONS (WHMIS): Class E - Corrosive Material. Sensitization to product: None known. Reproductive toxicity: None known. Odor threshold: No odor. Product use: Source of alkalinity.

HAZARD RATING SYSTEM (HMIS/NFPA):
Health 3, Flammability 0, Reactivity 1

16. OTHER INFORMATION

Other Information:
NSF Drinking Water Treatment Chemicals Listing - PPG sodium hydroxide/caustic soda is certified