MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Sustain® Summer Shield
Product ID: 0289a
SYNONYMS: Sustain® Shield
ISSUE DATE: 10/18/2006
EDITION NO.: 7

PPG Industries, Inc.
One PPG Place, Pittsburgh, PA 15272, USA
24-hour Emergency Telephone Number: 1-412-434-4515
For Product Information (8am-5pm Eastern time):
1-800-245-2974 (Cal Hypo)

PREPARER: Product Safety, Chemicals

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material/CAS Number	Percent
Sodium Chloride Brine 7647-14-5	80-85
Sustain Shield (proprietary) NONE	15-20

Note: Trace amounts of blue dye added to some formulations.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

CAUTION! May cause irritation to eyes and skin. May be harmful if inhaled. May be harmful if swallowed.

Precautions: Avoid contact of neat material with eyes, skin, and clothing. Use appropriate personal protective clothing and respiratory protection. Avoid breathing vapors and/or mists. Use only with adequate ventilation. Ventilation must be sufficient to minimize employee exposure in the work area. Do not swallow. Wash thoroughly every day after work. Remove and wash contaminated clothing before reuse. Do not eat, drink or smoke in work area.

4. FIRST AID MEASURES

INHALATION: Not considered a likely route of exposure. Remove from area to fresh air. If symptomatic, contact a poison control center, emergency room or physician for treatment information.

EYE/SKIN CONTACT: EYE: Remove contact lens and pour a gentle stream of warm water through the affected eye for at least 15 minutes. If irritation persists, contact a poison control center, emergency room, or physician as further treatment may be necessary. SKIN: Run a gentle stream of water over the affected area for 15 minutes. A mild soap may be used if available. If any symptoms persist, contact a poison control center, emergency room, or physician as further treatment may be necessary.

INGESTION: Gently wipe or rinse the inside of the mouth with water. Sips of water can be given. Never give anything by mouth to an unconscious person. Contact a poison control center, emergency room or physician for treatment information.

5. FIRE-FIGHTING MEASURES

FLASH POINT: None

EXTINGUISHING MEDIA: Use extinguishers appropriate for surrounding fire.

SPECIAL FIREFIGHTING PROCEDURES: Emits toxic fumes under fire conditions. Fire-fighters must wear NIOSH approved pressure demand, self-contained breathing apparatus and full protective clothing when fighting chemical fires. When this product is involved in fires, it can decompose to toxic, corrosive hydrogen chloride gas.

6. ACCIDENTAL RELEASE MEASURES

ACTION TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
Attempt to shut off source of leak. Unprotected personnel should move upwind of spill. Only personnel equipped with proper respiratory and eye/skin protection should be permitted in the area. Dike area with soil or sand to contain spill. After all visible traces of spilled material have been removed, flush area with large amounts of water. Spills should be promptly cleaned up, using adequate personal protective equipment.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN DURING HANDLING AND STORAGE:
Store in a cool, dry, well-ventilated place. Store only in closed, properly labeled containers. Keep container closed when not in use. Keep in original container. Avoid temperatures below 40°F and above 100°F.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

OSHA: No occupational exposure limits have been established by OSHA for this product.

ACGIH: No occupational exposure limits have been established by ACGIH for this product.

ONTARIO: No occupational exposure limits have been established by Ontario for this product.

RESPIRATORY PROTECTION: None required for normal use.

VENTILATION: Use local exhaust or general room/dilution ventilation as appropriate to control employee exposures in the work place.

EYE AND FACE PROTECTION: Chemical safety goggles or safety glasses with side shields.

PROTECTIVE GLOVES: Impervious gloves (e.g. butyl rubber).

OTHER PROTECTIVE EQUIPMENT: Boots, aprons, or chemical suits should be used when necessary to prevent skin contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: Water solution
Vapor Density (Air=1): NA
Specific Gravity (Water=1): 1.14 @ 23°C (15% solution)
pH: 7 to 9
FREEZING/MELTING POINT: 32°F
SOLUBILITY (wt.% in water): Complete (100%)
Bulk Density (kg/M3): 9.462 lbs/gal
VOLUME % VOLATILE: 80-85%
VAPOR PRESSURE: NA
Evaporation Rate: NA
HEAT OF SOLUTION: NA
Physical State: Liquid.
Odor: Slight
COLOR: Clear to clear blue

10. STABILITY AND REACTIVITY

Stability: Stable.

HAZARDOUS POLYMERIZATION: Will not occur.

INCOMPATIBILITY (CONDITIONS/MATERIALS TO AVOID):
Contact with strong bases. Strong oxidizers. Strong acids.

HAZARDOUS THERMAL DECOMPOSITION/COMBUSTION PRODUCTS:
Carbon monoxide. Carbon dioxide. Oxides of nitrogen. Hydrogen chloride gas. Oxides of sodium.

11. TOXICOLOGICAL INFORMATION

SKIN IRRITATION: Non-irritating.
EYE IRRITATION: Very mildly to mildly irritating.
ACUTE ORAL LD50: > 5000 mg/kg. (rat) Slight to very low toxicity.

CARCINOGENICITY STATUS: This product is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, ACGIH, or OSHA.

MEDICAL CONDITIONS AGGRAVATED: None known.

EFFECTS OF OVEREXPOSURE:

ACUTE:

Eye/Skin Contact: The acute studies conducted in rabbits with an 18% solution of this product indicates that the material causes slight eye irritation and no significant skin irritation.

A 14-day repeated installation eye irritation study in rabbits was conducted with aqueous solutions containing Chlorinated Sustain Shield. The results of this study indicated that there was no significant eye irritation from solutions with Chlorinated Sustain Shield concentrations at use levels. When an elevated concentration of Chlorinated Sustain Shield was applied to the eye, results indicate that Sustain Shield did not add significantly to the eye irritation produced by chlorine alone.

Ingestion: The 18% Sustain Shield solution in brine is relatively non-toxic, having an oral LD50 of greater than 5000 mg/kg in rats.

Inhalation: No significant exposure is expected by this route.

Delayed Contact Hypersensitivity (Allergic Response): Several studies in both animals and humans have been conducted to ascertain the potential for Sustain Shield (use product) and Chlorinated Sustain Shield (product formed from Sustain Shield and chlorine) to cause an allergic response. There are two important concentrations relevant to interpretation of these data: 10 ppm is the maximum level of Chlorinated Sustain Shield that will be used in swimming pools. The maximum solubility of Chlorinated Sustain Shield in water is approximately 10,000 ppm.

A study was conducted in guinea pigs to determine whether Chlorinated Sustain Shield would produce a phototoxic response, a photoallergy or a delayed contact hypersensitivity. Using a concentration of 7000 ppm for both the induction and challenge phase, Chlorinated Sustain Shield did not produce phototoxicity or photoallergy, but did produce a delayed contact hypersensitivity in guinea pigs.

Another study using the Buehler delayed contact hypersensitivity protocol was conducted. Using 8000 ppm Chlorinated Sustain Shield, no delayed contact hypersensitivity was produced in guinea pigs.

A series of human repeated insult patch tests and other studies have been conducted with both Sustain Shield and Chlorinated Sustain Shield. In an initial study, humans were induced with 1000 ppm Sustain Shield and Chlorinated Sustain Shield under separate occluded patches. When challenged with the same concentration of material, Sustain Shield produced no reaction; whereas, Chlorinated Sustain Shield did produce a delayed contact hypersensitivity. Topical application of 10 and 100 ppm Chlorinated Sustain Shield to the sensitized individuals produced no response. In addition, no response was noted when these sensitized subjects had a single hand immersed for 165 minutes in a water solution containing 10 ppm Chlorinated Sustain Shield.

Human repeated insult patch test using induction and challenge concentrations of 10 ppm and 100 ppm indicated that Chlorinated Sustain Shield does not produce delayed contact hypersensitivity at these levels.

The data on delayed contact hypersensitivity indicate that concentrations of Chlorinated Sustain Shield and Sustain Shield at levels encountered with swimming pool use produce a minimal risk of sensitization in exposed people.

CHRONIC:

Chronic effects have not been evaluated; however, at the use concentrations of this product, there are no expected effects.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:
No data at this time.

ENVIRONMENTAL FATE:
No data at this time.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:
Waste material must be disposed of in accordance with federal, state, provincial, and local environmental control regulations. Empty containers should be recycled or disposed of through an approved waste management facility.

14. TRANSPORT INFORMATION

Proper Shipping Name: Not regulated

15. REGULATORY INFORMATION

USA TSCA: All components of this product are listed on the TSCA Inventory.
EU EINECS: A component in this product is not listed on EINECS. This product can only be used in R&D applications.
CANADA DOMESTIC SUBSTANCES LIST (DSL): This product and/or one of its components is not listed on the Canadian DSL, and is being offered for R & D purposes only. Contact your PPG representative for further details.
AUSTRALIA AICS: A component in this product is not listed on AICS. This product can only be used in R&D applications.
KOREA ECL: One or more components in this product are not listed on the Korean Existing Chemicals Inventory (KECI). This product can only be used in R&D applications.
JAPAN MITI (ENCS): One or more components in this product are not listed on the Japanese Existing and New Chemical Subtances (ENCS) chemical inventory. This product can only be used in R&D applications.
PHILIPPINES PICCS: One or more components in this product are not listed on the Phillipines Inventory of Chemical and Chemical Substances (PICCS). This product can only be used in R&D applications.

CHINA IECSC: A component in this product is not listed on the Inventory of Existing Chemical Substances in China (IECSC). This product can only be used in China with an appropriate exemption permit.

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

CERCLA Hazardous Substance:
Not listed.

CANADA REGULATIONS (WHMIS): Not Applicable.

16. OTHER INFORMATION

Other Information:
Note: This product is for use only as a chlorine extender in swimming pools. Follow label directions.

The following has been revised since the last issue of this MSDS:
Date. Edition. Section 1 has been updated. Section 3 has been updated. Section 4 has been updated. Section 5 has been updated. Section 6 has been updated. Section 7 has been updated. Section 8 has been updated. Section 9 has been updated. Section 10 has been updated. Section 11 has been updated. Section 12 has been updated. Section 13 has been updated. Section 15 has been updated. Section 16 has been updated.

Previous revision date: 8/18/1999
Previous edition number: 006

NA = Not Available