

MATERIAL SAFETY DATA SHEET: CRYSTAL SIMPLE GREEN®

SUNSHINE MAKERS, INC.

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SUPERSEDES ANY PREVIOUS VERSIONS

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For 24-hour emergency, call Chem-Tel, Inc.: 800-255-3924

PRODUCT IDENTIFICATION

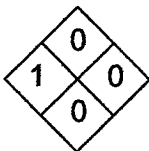
Other Names: Crystal Simple Green®
Crystal Simple Green®-Specialized Cleaner and Degreaser

UN Number: Not required

Dangerous Goods Class: Nonhazardous

Hazard Rating (NFPA/HMIS)

Health = 1* Reactivity = 0
Fire = 0 Special = None



Rating Scale

0 = minimal 1 = slight
2 = moderate 3 = serious
4 = severe

*Mild eye irritant, non-mutagenic and non-carcinogenic. **None of the ingredients in Crystal Simple Green® are regulated or listed as potential cancer agents by Federal OSHA, NTP, or IARC.**

Use: A specialized cleaner and degreaser for use in the electronic, high technology, and cosmetics industries, and in federally-inspected food processing facilities.

SAFE HANDLING INFORMATION

Fire/Explosion Hazard

Crystal Simple Green® is nonflammable, stable, and will not burn.

Flash Point/Auto-Ignition: Not relevant.

Extinguishing Media: Nonflammable/nonexplosive. No special procedures required.

Special Fire Fighting

Procedures: None required.

Reactivity Data

Nonreactive. Crystal Simple Green® is stable, even under fire conditions, and will not react with water or oxidizers.

Hazardous polymerization will not occur.

Storage and Transport

No special precautions are required. **This product is nonhazardous for storage and transport according to the U.S. Department of Transportation Regulations.**

Crystal Simple Green® requires no special labeling or placarding to meet U.S. Department of Transportation requirements.

Spills and Disposal

Spill or Leakage Procedures: Recover usable material by convenient method; residual may be removed by wipe or wet mop. If necessary, unrecoverable material may be washed to drain with large quantities of water.

Waste Disposal: Crystal Simple Green® is fully water soluble and biodegradable and will not harm sewage-treatment microorganisms if disposal by sewer or drain is necessary. Dispose of in accordance with all applicable local, state, and federal laws.

PRECAUTIONS FOR USE

Exposure Limits: The Crystal Simple Green® formulation presents no health hazards to the user, other than mild eye irritancy.

Ventilation: No special ventilation is required during normal use. Large-scale uses indoors should provide an increased rate of air exchange.

Personal Protection

Precautionary Measures: No special requirements under normal use conditions. Large-scale spray applications should be conducted with eye and respiratory protection.

Eye Protection: Caution, including reasonable eye protection, should always be used to avoid eye contact where splashing or exposure to high levels of spray-mist may occur.

Skin Protection: No special precautions required; rinse completely from skin after contact.

Respiratory Protection: No special precautions required except during large-scale spray applications where spray mist levels are high.

Work and Hygienic Practices: Wash or rinse hands before touching eyes or contact lenses. Follow standard hygienic practices for handling cleaning agents.

SYMPTOMS OF OVEREXPOSURE AND FIRST AID TREATMENT

Eye contact: Reddening may develop. Immediately rinse the eye with large quantities of cool water; continue 10-15 minutes or until the material has been removed; be sure to remove contact lenses, if present, and to lift upper and lower lids during rinsing. Get medical attention if irritation persists.

Skin contact: Minimal effects, if any; rinse skin with water, rinse shoes and launder clothing before reuse. - Reversible reddening may occur in some dermal-sensitive users; thoroughly rinse area and get medical attention if reaction persists.

Swallowing: Essentially non-toxic. Give several glasses of water to dilute; do not induce vomiting. If stomach upset occurs, consult physician.

Inhalation: Non-toxic. Prolonged exposures to concentrate-mist may cause mild irritation of nasal passages or throat; remove to fresh air. Get medical attention if irritation persists.

INGREDIENT INFORMATION

The only ingredient of Crystal Simple Green® with established exposure limits is undiluted 2-butoxyethanol (<6%) (Butyl Cellosolve; CAS No. 111-76-2): the OSHA PEL and ACGIH TLV is 25 ppm (skin). Note, however, that Butyl Cellosolve is only one of the raw material ingredients that undergo processing and dilution during the manufacture of Crystal Simple Green®. Upon completion of the manufacturing process, Crystal Simple Green® does not possess the occupational health risks associated with exposure to undiluted Butyl Cellosolve. Verification of this is contained in the independent test results detailed under "Toxicity Information" on Page 3 of this MSDS.

The Butyl Cellosolve in Crystal Simple Green® is part of a chemical category (glycol ethers) regulated by the Emergency Planning and Community Right-to-Know Act (SARA, Title III, section 313); therefore, a reporting requirement exists in the U.S.A. Based upon chemical analysis of Simple Green®, Crystal Simple Green® contains no known EPA priority - pollutants, heavy metals, or chemicals listed under RCRA, CERCLA, or CWA. Analysis by TCLP (Toxicity Characteristic Leaching Procedure) according to RCRA revealed no toxic organic or inorganic constituents.

TOXICITY INFORMATION

The information and conclusions cited in this section are based on data and testing of Simple Green®. The data are directly applicable to Crystal Simple Green® because, except for the fragrance and dyes which have been removed, it contains the same ingredients as Simple Green®.

Human Health Effects or Risks from Exposure

Adverse effects on human health are not expected from Crystal Simple Green®, based upon seventeen years' use of Simple Green® in diverse population groups without adverse health incidence reported, including extensive use by inmates of U.S. Federal prisons in cleaning operations.

Crystal Simple Green® is a mild eye irritant; mucous membranes may become irritated by concentrate-mist.

Crystal Simple Green® is not likely to irritate the skin in the majority of users. Repeated daily application to the skin without rinsing, or continuous contact of Crystal Simple Green® on the skin may lead to temporary, but reversible, irritation.

Medical Conditions Aggravated by Exposure

No aggravation of existing medical conditions is expected; some dermal-sensitive users may react to dermal contact by Crystal Simple Green®.

Nonhuman Toxicity (data for Simple Green®)

Acute Mortality Studies:

Oral LD₅₀ (rat): >5.0 g/kg body weight

Dermal LD₅₀ (rabbit): >2.0 g/kg body weight

Dermal Irritation: Only mild, but reversible, irritation was found in a standard 72-hr test on rabbits. A value of 0.2 (non-irritating) was found on a scale of 8.

Eye Irritation: With or without rinsing with water, the irritation scores in rabbits at 24 hours did not exceed 15 (mild irritant) on a scale of 110.

Subchronic dermal effects: No adverse effects, except reversible dermal irritation, were found in rabbits exposed to Simple Green (up to 2.0 g/kg/day for 13 weeks) applied to the skin of 25 males and 25 females. Only female body weight gain was affected. Detailed microscopic examination of all major tissues showed no adverse changes.

Fertility Assessment by Continuous Breeding: The Simple Green® formulation had no adverse effect on fertility and reproduction in CD-1 mice with continuous administration for 18 weeks, and had no adverse effect on the reproductive performance of their offspring.

BIODEGRADABILITY AND ENVIRONMENTAL TOXICITY INFORMATION

Biodegradability:

Like Simple Green®, Crystal Simple Green® is readily decomposed by naturally occurring microorganisms. The biological oxygen demand (BOD), as a percentage of the chemical oxygen demand (COD), will approximate 60% after 11 days.

In a standard biodegradation test with soils from three different countries, Butyl Cellosolve reached 50% degradation in 6 to 23 days, depending upon soil type, and exceeded the rate of degradation for glucose, which was used as a control for comparison.

SUNSHINE MAKERS, INC.

Environmental Toxicity Information:

Crystal Simple Green® is nontoxic to marine and estuarine test animals at concentrations below 200 mg/L (0.02%).

OTHER INFORMATION**Physical Description and Properties: Crystal Simple Green®**

Appearance/odor: Clear, viscous liquid.

Flashpoint: Nonflammable

Flammability Limits: Nonflammable

Vapor Pressure: 18 mm Hg @ 20 °C

23.5 mm Hg @ 26 °C

VOC Composite Partial Pressure: 0 mm Hg @ 20 °C

Water Solubility: Completely soluble in water.

Detection: Crystal Simple Green® has a characteristic odor that is **not** indicative of any hazardous situation.

Boiling Point: 100.6 °C

Specific Gravity: 1.020

pH: 9.35

Volatile Organic Compounds: 0%

General Information

Containers: Crystal Simple Green® residues can be completely removed by rinsing with water; the container may be recycled or applied to other uses.

Contact Point: Sunshine Makers, Inc., Director of Research and Development: 562-795-6000.

***** NOTICE *****

All information appearing herein is based upon data obtained by the manufacturer and recognized technical sources. Judgments as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of this information, Sunshine Makers, Inc. or its distributors extends no warranties, makes no representations and assumes no responsibility as to the suitability of such information for application to purchaser's intended purposes or for consequences of its use.