HOLDFAST® SCOTTS GLASS CLEANER
MATERIAL SAFETY DATA SHEET

Product Code: 45031 (750ml)
Product Name: HOLDFAST® Scotts Glass Cleaner

Hazardous Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS - Nr</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMMONIA</td>
<td>7664-41-7</td>
<td>1 – 5%</td>
</tr>
<tr>
<td>ETHYLENE GLYCOL MONOBUTYL ETHER</td>
<td>111-76-2</td>
<td>1 – 5%</td>
</tr>
<tr>
<td>METHYLATED SPIRITS</td>
<td>Not avail</td>
<td>1 – 10%</td>
</tr>
<tr>
<td>SURFACTANT</td>
<td>Not avail</td>
<td>0.01 – 0.1%</td>
</tr>
<tr>
<td>WATER</td>
<td>7732-18-5</td>
<td>Not avail</td>
</tr>
</tbody>
</table>

Physical Description/Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.0</td>
</tr>
<tr>
<td>Boiling Point °C</td>
<td>100°C approx</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Soluble</td>
</tr>
<tr>
<td>Odour</td>
<td>Slight</td>
</tr>
<tr>
<td>Flammability</td>
<td>Non flammable</td>
</tr>
<tr>
<td>Exposure Standard (TWA)</td>
<td>25 ppm Ammonia</td>
</tr>
<tr>
<td>pH</td>
<td>7.5</td>
</tr>
<tr>
<td>Vapour Pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower Explosion Limit</td>
<td>Not relevant</td>
</tr>
<tr>
<td>Upper Explosion Limit</td>
<td>Not relevant</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>Not relevant</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not relevant</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not relevant</td>
</tr>
</tbody>
</table>

First Aid

Eye: Flush gently with running water, holding eyelids open for 20 minute period. Seek immediate medical attention.

Inhalation: Leave exposure area immediately. If assisting a victim, avoid becoming a casualty; wear a Full-face Type B (Inorganic and acid gas) respirator or an Air-line respirator where an inhalation risk exists. If victim is not breathing apply artificial respiration and seek urgent medical attention.

Skin: Remove contaminated clothing and gently flush affected areas with water. Continue to flush with water until skin no longer feels soapy. Seek medical attention. Launder clothing before reuse.
**Ingestion**

Do not induce vomiting. Give a glass of water to drink. Seek urgent medical attention.

**Personal Protection Information**

**Reactivity:** Incompatible with oxidising agents (eg hypochlorites, peroxides), acids (eg sulphuric acid), alkalis (eg hydroxides), heat and ignition sources.

**Ventilation:** Ensure adequate natural ventilation.

**Personal Protection:** Wear splash-proof goggles or safety glasses. With prolonged use, wear PVC or rubber gloves.

**Flammability:** Non flammable. May evolve toxic gases (carbon/nitrogen oxides, hydrocarbons, ammonia) when heated to decomposition.

**Safe Storage and Handling**

**Storage:** Store in a cool, dry, well ventilated area, removed from oxidising agents, alkalis, acids and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

**Waste Disposal:** For small amounts, absorb with sand, vermiculite or similar and dispose of to an approved landfill site. Prevent contamination of drains or waterways as aquatic life may be threatened and environmental damage may result.

**Transport:** Not regulated for transport purposes.

**Fire & Explosion Data**

Non flammable. If product is present in a fire, toxic gases may be evolved. Evacuate area and contact emergency services. Toxic gases (hydrocarbons, carbon/nitrogen oxides, ammonia) may be evolved. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use water fog to cool intact containers and nearby storage areas.

Extinguishing Non flammable. Prevent contamination of drains or waterways; absorb runoff with sand or similar.

**Health Hazard/Toxicological Properties Overexposure Effects**

Concentration in this product: Not Available

Molecular Formula: H2O

Molecular Weight: 18

**ADDITIONAL INFORMATION FOR: SURFACTANT**

Concentration in this product: 0.01 - 0.1%

EMERGENCY - ENVIRONMENT

Surfactants are not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. However larger quantities may cause foaming of waterways with adverse effects on aquatic life. At high levels, surfactants may dissolve the oils on bird feathers with potential for bird to drown. They are not expected to bioaccumulate.

**ADDITIONAL INFORMATION FOR: AMMONIA**

Concentration in this product: 1 - 5%

Molecular Formula: N-H3

Molecular Weight: 17

**HEALTH HAZARDS - HEALTH HAZARD SUMMARY**

Six cases were reported of acute ammonia gas exposure following rupture of a pipe containing ammonia. Varying degrees of symptoms of acute inflammation of the respiratory tract and chemical skin burns were observed. Residual chronic bronchitis was evident in 2 cases. One worker died one month after the accident and the autopsy revealed acute laryngitis, tracheitis, bronchopneumonia, and pulmonary oedema. The kidneys showed congestions and early hemorrhagic nephritis, which was attributed to toxemia secondary to chemical skin burns. [Slot GMJ, Lancet 2: 1356-57 (1938) as cited in NIOSH; Criteria Document: Ammonia p.26 (1979) DHEW Pub. NIOSH 74-136].

**HEALTH HAZARDS - EYE**
Over exposure to vapours may result in conjunctivitis. Direct contact may result in eye damage and cataracts.

**HEALTH HAZARDS - INHALATION**

Exposure to 94 mg/m3 has been reported to cause eye, nose, throat and chest irritation. Exposure to high concentrations may result in cough, difficult breathing, bronchospasm, chest pain and pulmonary oedema which may be fatal. A tolerance to irritating concentrations may develop.

- **TWA**: 25 ppm (17 mg/m3)
- **STEL**: 35 ppm (24 mg/m3)
- **IDLH (Inhalation)**: 300 ppm
- **TCLo (Inhalation)**: 20 ppm (human)
- **LCLo (Inhalation)**: 5000 ppm/5 minutes (human)
- **LC50 (Inhalation)**: 2000 ppm/4 hours (rat)
- **Odour Threshold**: 0.32 - 6 ppm (Intense, pungent, suffocating odour).

**HEALTH HAZARDS - SKIN**

Contact may result in burns and blistering. Sensitisation reactions have been reported from exposure to ammonia.

- **TDLo (Skin)**: 1000 mg/kg (human)

**HEALTH HAZARDS - INGESTION**

Irritant. May cause nausea and vomiting following ingestion. Swelling of the lips, mouth and larynx have been reported. Oral and oesophageal burns may occur.

- **TDLo (Ingestion)**: 0.015 mL/kg (man)
- **LD50 (Ingestion)**: 350 mg/kg (rat)

**EMERGENCY - ENVIRONMENT**

Ammonia (total) has been proposed to be added to the National Pollutant Inventory in 1999 - Threshold Category 1, use of 10 tonnes/year. ATMOSPHERE: It is assumed that ammonia combines with sulfate ion in the atmosphere or in washout by rainfall resulting in a rapid return of ammonia to the soil. WATER: The proportion of ammonia (NH3) and ammonium ion found in water used for production is considered an important indicator of quality in agriculture. In highly populated fish breeding plants, where feed left overs, excrement and metabolic waste cause growth disturbances and deficiencies, even though there is an adequate supply of oxygen, nitrogen compounds are the decisive factor. A significant role is played by the undissociated NH3 molecule. When ammonia appears in water under the normal conditions (aerobic), it is rapidly converted to nitrate by nitrification; the principal water contaminant normally being nitrate. The pH in water is increased by the presence of ammonia ion, in the form of hydroxide ions. Bacteria convert the ammonia to nitrate creating an oxygen demand (BOD) several days after the introduction of ammonia. The bacteria that oxidize ammonia to nitrate are largely of the genus Nitrosomonas; conversion of nitrite to nitrate is carried out primarily by the genus Nitrobacter. Temperature, oxygen supply, and pH of the water are factors in determining the rate of oxidation.

**ADDITIONAL INFORMATION FOR : ETHYLENE GLYCOL MONOBUTYL ETHER**

Concentration in this product : 1 - 5%

- **Molecular Formula**: C6-H14-O2
- **Molecular Weight**: 118.2

**HEALTH HAZARDS - HEALTH HAZARD SUMMARY**

Ethylene glycol monobutyl ether (2-Butoxyethanol) is regarded as the most toxic glycol monoaikyl ether used as a solvent. [Browning, E. Toxicity and Metabolism of Industrial Solvents, 1965] The effects of alkyl derivatives of ethylene glycol upon the central nervous system include headache, drowsiness, weakness, slurred speech, staggering gait, tremor and blurred vision. Changes of personality are often noted.

Ethylene glycol monobutyl ether (2-Butoxyethanol) has been assessed as a Priority Existing Chemical (PEC) under the National Industrial Chemicals Notification and Assessment Scheme (October 1996).

**HEALTH HAZARDS - EYE**
Contact with the liquid may cause conjunctivitis and corneal damage.

HEALTH HAZARDS - INHALATION
Chronic exposure may result in kidney, liver, lung, bladder, blood and lymph damage (signified by dark red urine in some cases). Experimental teratogen (TCL0: 25 ppm/6 hours [6-15 days pregnant] - specific developmental abnormalities). Human systemic effects including CNS depression have been reported.
TWA: 25 ppm (121 mg/m3) SKIN
IDLH (Inhalation): 700 ppm
TCL0 (Inhalation): 100 ppm (human)
LC50 (Inhalation): 700 ppm (mouse)

HEALTH HAZARDS - SKIN
Rapidly absorbed through the skin and may cause toxic systemic effects. Reports undertaken estimate that 75% of total uptake of EGMBE during exposure is dermal.
LD50 (Skin): 230 mg/kg (guinea pig)

HEALTH HAZARDS - INGESTION
Toxic via ingestion. May cause severe kidney and liver damage.
TDLo (Ingestion): 7813 uL/kg (woman)
LD50 (Ingestion): 300 mg/kg (rabbit)

EMERGENCY - ENVIRONMENT
SOIL: Ethylene glycol monobutyl ether is expected to have high mobility in soil. Volatilisation is not expected to be important from moist soil surfaces, however may be important from dry soil.
WATER: Aerobic degradation of ethylene glycol monobutyl ether should occur rapidly in water.
ATMOSPHERE: Degradation by reaction with hydroxyl radicals is anticipated (half-life: ~20 hours).

ADDITIONAL INFORMATION FOR: METHYLATED SPIRITS
Concentration in this product: 1 - 10%

HEALTH HAZARDS - HEALTH HAZARD SUMMARY
Methylated spirits is mainly comprised of ethanol (CAS# 64-17-5). Ingestion of barbiturates and other depressant drugs will potentiate the effects of ethanol. Simultaneous exposure to ethanol and aromatic hydrocarbons such as toluene, m-xylene and styrene, chlorinated hydrocarbons and methyl ethyl ketone may result in interference with the metabolism of these solvents and possible potentiation of the associated adverse health effects. Ethanol potentiates the effects of antihistamines, hypnotics, sedative, insulin, tranquilizers, antidepressants and monoamine oxidase inhibitors. Experimental tumorigen via ingestion. Ethanol is rapidly absorbed from the gastrointestinal tract. There is little difference in the dose required to produce anaesthesia and one that impairs vital functions.

HEALTH HAZARDS - EYE
Eye irritant.

HEALTH HAZARDS - INHALATION
Methylated spirits depresses the central nervous system causing narcosis and anaesthesia. Exposure to vapour levels greater than 1000 ppm may result in irritation of the nose and throat, headaches, 1 hour later drowsiness, weakness and loss of appetite.

HEALTH HAZARDS - SKIN
Contact may result in irritation, drying and defatting of the skin with dermatitis.

HEALTH HAZARDS - INGESTION
Ingestion may cause a burning sensation in the mouth and throat. Adult fatal dose: 300-400 mL within 1 hour. Human reproductive effects have been reported. Chronic effects include liver/kidney & brain damage and gastritis. Experimental teratogen.

ADDITIONAL SAFE HANDLING INFORMATION
ABBREVIATIONS: *** mg/m³ - Milligrams per cubic metre *** ppm - Parts Per Million *** TWA/ES - Time Weighted Average or Exposure Standard. *** pH - relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline. *** CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds. *** M - moles per litre, a unit of concentration. *** IARC - International Agency for Research on Cancer.

COLOUR RATING SYSTEM: Chem Alert reports are assigned a colour rating of Green, Amber or Red for the purpose of providing users with a quick and easy means of determining the hazardous nature of a product. Safe handling recommendations are provided in all Chem Alert reports so as to clearly identify how users can control the hazards and thereby reduce the risk (or likelihood) of adverse effects. As a general guideline a Green colour rating indicates a low hazard, an Amber colour rating indicates a moderate hazard and a Red colour rating indicates a high hazard.

EXPOSURE STANDARDS - TIME WEIGHTED AVERAGES: Exposure standards are established on the premise of an 8 hour work period of normal intensity, under normal climatic conditions and where a 16 hour break between shifts exists to enable the body to eliminate absorbed contaminants. In the following circumstances, exposure standards must be reduced: strenuous work conditions; hot, humid climates; high altitude conditions; extended shifts (which increase the exposure period and shorten the period of recuperation).

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. Information provided by Risk Management Technologies is summarised for ease of use.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

TRANSPORT INFORMATION:
Where a United Nations Number (UN No) is present on the Chem Alert report, the product is classified as a Dangerous Good by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road or Rail. If no UN Number, Dangerous Goods Class or Hazchem Code has been allocated, then the Chem Alert report will state 'none allocated' in accordance with [NOHSC:2011(1994)].

Spill & Disposal Procedure
**Spillage:** If spill (bulk), contact emergency services where appropriate. Wear splash-proof goggles, PVC/rubber gloves, a Type A (Organic vapour) respirator (where an inhalation risk exists), coveralls and rubber boots. Ventilate and clear area of all unprotected personnel. Absorb spill with sand or similar, collect and place in sealable containers for disposal.

**Health and Safety Recommendation**
- Apply the usual industrial hygiene