MATERIAL SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

Product identifier: S-325 New Beginning Extra-Strength Cleaner and Wax Remover
Product Use: Floor cleaning; Polish remover.
Chemical Family: Mixture.
Manufacturer part no.: S-325
Supplier’s name and address:
Armstrong World Industries, Inc.
2500 Columbia Ave.
Lancaster, PA, U.S.A.
17603
Information Telephone #: (877) 276-7876, www.floorexpert.com (for MSDS)
24 Hr. Emergency Tel #: CHEM-TEL: 1-800-255-3924 OR 1-813-248-0585 (call collect)

SECTION 2 - HAZARDS IDENTIFICATION

Classification: WHMIS classification:
Class D1A (Materials Causing Immediate and Serious Toxic Effects, Very Toxic Material);
Class E (Corrosive Material).

Labelling: Phrases recommended to appear on a supplier label, can be found in Section 15.

WHMIS symbols required on a supplier label:

DANGER!
Corrosive. Prolonged contact may produce chemical burns to affected skin areas. May cause digestive tract burns. Causes eye burns. POISON! May be fatal if too much is inhaled. Harmful or fatal if absorbed through the skin. Severe respiratory irritant. Could result in pulmonary edema (fluid accumulation). Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood.

POTENTIAL HEALTH EFFECTS:

Signs and symptoms of short-term (acute) exposure

Inhalation: May cause severe irritation to the nose, throat and respiratory tract. Symptoms may include coughing, shortness of breath, wheezing and reduced lung function. If higher concentrations are inhaled, additional symptoms may include coughing, shortness of breath, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Inhalation in very high concentrations may result in blood system effects, such as red blood cell fragility. Inhalation of extremely high concentrations could cause pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed. May result in unconsciousness and possibly death.

Skin: Severely irritating or corrosive. Prolonged contact may produce chemical burns to affected skin areas. May be absorbed and cause symptoms similar to those for inhalation.

Eyes: Direct contact may strongly irritate or burn the eyes. Could cause blindness.

Ingestion: May cause chemical burns of the mouth, throat, esophagus and stomach. Symptoms may include abdominal pain, vomiting, burns, perforations, bleeding and eventually death.
Effects of long-term (chronic) exposure:

- Prolonged or repeated inhalation may cause kidney stones. Prolonged or repeated inhalation may cause severe blood system toxicity. At higher concentrations, prolonged inhalation may cause liver damage.

Carcinogenic status:

See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards:

See TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects:

See ECOLOGICAL INFORMATION, Section 12.

### SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS #</th>
<th>Wt.%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium metasilicate</td>
<td>6834-92-0</td>
<td>1.00 - 3.00</td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>141-43-5</td>
<td>1.00 - 3.00</td>
</tr>
<tr>
<td>2-butoxyethanol</td>
<td>111-76-2</td>
<td>1.00 - 3.00</td>
</tr>
</tbody>
</table>

### SECTION 4 - FIRST AID MEASURES

**Inhalation**

- If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If not breathing, clear airway and start artificial respiration. Seek immediate medical attention/advice.

**Skin contact**

- Remove/Take off immediately all contaminated clothing. Flush affected skin with gently flowing lukewarm water for at least 20 minutes. Seek immediate medical attention/advice.

**Eye contact**

- Immediately flush eyes thoroughly with running water for at least 20 to 30 minutes. Seek immediate medical attention/advice.

**Ingestion**

- Never give anything by mouth to an unconscious person. Rinse mouth with water. Do NOT induce vomiting. Have victim drink one to two glasses of water. Seek immediate medical attention/advice.

**Notes For Physician**

- Treat symptomatically. Corrosive. Immediate medical attention is required.

### SECTION 5 - FIRE FIGHTING MEASURES

**Fire hazards/conditions of flammability**

- Not flammable under normal conditions of use. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Vapours may be heavier than air and may collect in confined and low-lying areas.

**Oxidizing properties**

- None known.

**Explosion data: Sensitivity to mechanical impact / static discharge**

- Not expected to be sensitive to mechanical impact or static discharge.

**Suitable extinguishing media**

- Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

**Special fire-fighting procedures/equipment**

- Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. After fires have been extinguished, carefully clean all equipment and surfaces exposed to fumes.

**Hazardous combustion products**

- Carbon oxides; Nitrogen oxides (NOx); hydrogen cyanide; formaldehyde; silicon oxides; Sodium oxides.

### SECTION 6 - ACCIDENTAL RELEASE MEASURES
Personal precautions: Corrosive! Wear chemically resistant personal protective equipment during cleanup. Restrict access to area until completion of clean-up. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Refer to point 8 on this Safety Data Sheet, EXPOSURE CONTROLS / PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions: Do not allow product to enter waterways. Do not allow material to contaminate ground water system.

Spill response/cleanup: Ventilate area of release. Eliminate all ignition sources. Stop spill or leak at source if safely possible. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Notify the appropriate authorities as required.

Prohibited materials: None known or reported by the manufacturer.

SECTION 7 - HANDLING AND STORAGE

Safe Handling procedures: Corrosive! Wear chemically resistant protective equipment during handling. Use in a well-ventilated area. Training the workers on the potential health hazards associated with product vapor, dust or fume is important. Secondary inhalation exposures could occur when cleaning equipment, or when removing or laundering the clothing. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Keep away from acids and incompatibles. Keep containers tightly closed when not in use. Wash thoroughly after handling.

Storage requirements: Store in a cool, dry, well-ventilated area. No smoking in the area. Do not store near any incompatible materials (see Section 10). Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Protect against physical damage.

Incompatible materials: See Section 10.

Special packaging materials: Always keep in containers made of the same materials as the supply container.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TWA</td>
<td>STEL</td>
</tr>
<tr>
<td>Sodium metasilicate</td>
<td>N/Av</td>
<td>N/Av</td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>3 ppm</td>
<td>6 ppm</td>
</tr>
<tr>
<td>2-butoxyethanol</td>
<td>20 ppm</td>
<td>N/Av</td>
</tr>
</tbody>
</table>

Ventilation and engineering measures: Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection: Respiratory protection is required if the concentrations exceed the TLV. If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised.

Skin protection: Impervious gloves must be worn when using this product. Advice should be sought from glove suppliers.

Eye / face protection: Wear protective chemical safety goggles, or in splash environment, in combination with a face shield.

Other protective equipment: Where extensive exposure to product is possible, use resistant coveralls, apron and boots to prevent contact. An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations: Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid.

Appearance: green
Armstrong World Industries, Inc.
2500 Columbia Ave.
Lancaster, PA, U.S.A., 17603
Telephone: 1-877-276-7876

S-325 New Beginning Extra-Strength Cleaner and Wax Remover

MSDS Revision Date (mm/dd/yyyy): 01/05/2011

Odour : Citrus odour.

pH : 12.5 - 12.9

Boiling point : 100°C (212°F)

Melting/Freezing point : 0°C (32°F)

Vapour pressure (mmHg @ 20°C / 68°F) : Not available.

Vapour density (Air = 1) : Not available.

Boiling point : 1.01

Specific gravity : 1.01

Coefficient of water/oil distribution : Not available.

Solubility in water : completely soluble

Evaporation rate (n-Butyl acetate = 1) : Not available.

Volatile organic Compounds (VOC's) : 523.3 g/L

Flash point : Not applicable.

Flash point Method : Not applicable.

Auto-ignition temperature : Not available.

Upper flammable limit (% by vol.) : Not applicable.

Flashback observed : Not applicable.

Viscosity : Not available.

Alkali reserve = 0.88 g/NaOH

General Information

Section 10: STABILITY AND REACTIVITY

Stability and reactivity : Stable under the recommended storage and handling conditions prescribed. The corrosion rate of this product on P3 steel and 7075-T6 non-clad Aluminum does not exceed 6.25 mm/year. This product is therefore not considered corrosive to metals.

Hazardous polymerization : Hazardous polymerisation does not occur.

Conditions to avoid : Avoid heat and open flame. Avoid contact with incompatible materials.

Materials To Avoid And Incompatibility : Acids; Oxidizing agents; halogens; Alkali metals.

Hazardous decomposition products : None known, refer to hazardous combustion products in Section 5.

SECTION 11 - TOXICOLOGICAL INFORMATION

Target organs : Lungs; eyes; Skin; Digestive system; Liver; Kidney; Blood forming system.

Routes of exposure : Inhalation: YES Skin Absorption: YES Skin & Eyes: YES Ingestion: YES

Irritancy : Corrosive. This product was tested using the invitro Corrositex test. The product was found to be a mildly corrosive, Category 2 material with a corrosion breakthrough time of > 30 but < 60 minutes.

Toxicological data : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>LC50(4hr) (inh, rat)</th>
<th>LD50 (Oral, rat)</th>
<th>LD50 (Rabbit, dermal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium metasilicate</td>
<td>N/Av</td>
<td>1153 mg/kg</td>
<td>&gt; 4640 mg/kg</td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>&gt; 1210 mg/m³ (mouse)</td>
<td>1720 mg/kg</td>
<td>1000 mg/kg</td>
</tr>
<tr>
<td>2-butoxyethanol</td>
<td>450 ppm</td>
<td>530 mg/kg</td>
<td>400 mg/kg</td>
</tr>
</tbody>
</table>

Carcinogenic status : Contains the following chemicals listed as confirmed animal carcinogens (A3) by ACGIH: 2-butoxyethanol. No other components are classified as carcinogenic by IARC, ACGIH, OSHA or NTP.

Reproductive effects : None known.

Teratogenicity : None known.

Mutagenicity : None known.

Epidemiology : Not available.

Sensitization to material : Not expected to be a skin or respiratory sensitizer.
Synergistic materials: Not available.
other important hazards: None known or reported by the manufacturer.
Conditions aggravated by overexposure: Pre-existing skin, eye and respiratory disorders.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

Mobility: No data is available on the product itself.

Persistence: No data is available on the product itself.

Bioaccumulation potential: No data is available on the product itself.

Other Adverse Environmental effects: No data is available on the product itself.

SECTION 13 - DISPOSAL CONSIDERATIONS

Handling for Disposal: Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

Methods of Disposal: Dispose of in accordance with federal, provincial and local hazardous waste laws.

SECTION 14: TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>Regulatory Information</th>
<th>UN Number</th>
<th>Shipping Name</th>
<th>Class</th>
<th>Packing Group</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>49CFR/DOT None</td>
<td>Consumer Commodity</td>
<td>ORM-D</td>
<td>None</td>
<td>ORM-D</td>
<td></td>
</tr>
<tr>
<td>49CFR/DOT Additional information</td>
<td>Must be a consumer-type product, in Limited Quantity size, no larger than 5.0 L per container. Package weight must not exceed 30 kg gross.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TDG UN1760</td>
<td>CORROSIVE LIQUID, N.O.S. (Sodium metasilicate; Monoethanolamine)</td>
<td>8 III</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TDG Additional information</td>
<td>May be shipped under Section 1.17 when packages are marked &quot;Consumer Commodity&quot; Must be a consumer-type product, in Limited Quantity size, no larger than 5.0 L per container. Package weight must not exceed 30 kg gross.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 15 - REGULATORY INFORMATION

Labelling:

Danger. Corrosive liquid. Prolonged contact may cause corrosive burns and eye damage. May be fatal if too much is inhaled. Harmful or fatal if absorbed through the skin. Severe respiratory irritant Could result in pulmonary edema (fluid accumulation). Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood.

Precautions: Use in a well-ventilated area. Wear suitable protective equipment during handling. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Keep away from extreme heat and flame. Keep away from incompatibles. Store in a cool, dry, well ventilated area, away from heat and ignition sources.

FIRST AID: If inhaled, move to fresh air. If breathing stopped, begin artificial respiration. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. For eye contact, flush with running water for at least 15 minutes. If ingested, do not induce vomiting. For all cases, obtain medical attention immediately.

Refer To Material Safety Data Sheet for further information.

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

**US Federal Information:**

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

**SECTION 16 - OTHER INFORMATION**

<table>
<thead>
<tr>
<th>Legend</th>
<th>ACGIH: American Conference of Governmental Industrial Hygienists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CAS: Chemical Abstract Services</td>
</tr>
<tr>
<td></td>
<td>IARC: International Agency for Research on Cancer</td>
</tr>
<tr>
<td></td>
<td>Inh: Inhalation</td>
</tr>
<tr>
<td></td>
<td>LC: Lethal Concentration</td>
</tr>
<tr>
<td></td>
<td>LD: Lethal Dose</td>
</tr>
<tr>
<td></td>
<td>N/Av: Not Available</td>
</tr>
<tr>
<td></td>
<td>N/Ap: Not Applicable</td>
</tr>
<tr>
<td></td>
<td>NIOSH: National Institute of Occupational Safety and Health</td>
</tr>
<tr>
<td></td>
<td>NTP: National Toxicology Program</td>
</tr>
<tr>
<td></td>
<td>OSHA: Occupational Safety and Health Administration</td>
</tr>
<tr>
<td></td>
<td>PEL: Permissible exposure limit</td>
</tr>
<tr>
<td></td>
<td>RTECS: Registry of Toxic Effects of Chemical Substances</td>
</tr>
<tr>
<td></td>
<td>STEL: Short Term Exposure Limit</td>
</tr>
<tr>
<td></td>
<td>TDG: Canadian Transportation of Dangerous Goods Act &amp; Regulations</td>
</tr>
<tr>
<td></td>
<td>TLV: Threshold Limit Values</td>
</tr>
<tr>
<td></td>
<td>TWA: Time Weighted Average</td>
</tr>
<tr>
<td></td>
<td>WHMIS: Workplace Hazardous Materials Identification System</td>
</tr>
</tbody>
</table>

**References:**

1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2010.
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2010 (Chempendium and RTECs).
4. Material Safety Data Sheet from manufacturer.

**Prepared for:**
Armstrong World Industries, Inc.
2500 Columbia Ave.
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Telephone: 1-877-276-7876
Please direct all enquiries to Armstrong World Industries.

**Prepared by:**
ICC The Compliance Center Inc.
http://www.thecompliancecenter.com

**DISCLAIMER OF LIABILITY**

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**MSDS Preparation Date (mm/dd/yyyy)**

: 02/05/2010

**MSDS Revision Date (mm/dd/yyyy)**

: 01/05/2011
S-325 New Beginning Extra-Strength Cleaner and Wax Remover

MSDS Revision Date (mm/dd/yyyy): 01/05/2011

Revision No. : 5

Revision Information : (M)SDS sections updated:

14. TRANSPORT INFORMATION (49CFR/DOT; TDG Additional Information)

END OF DOCUMENT