



Armstrong World Industries, Inc.
2500 Columbia Ave.
Lancaster, PA, U.S.A., 17603
Telephone: 717-396-2328

Armstrong S-330 Once n' Done Floor Cleaner Concentrate

S-330

MSDS Revision Date (mm/dd/yyyy): 01/07/2013

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MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product identifier : **Armstrong S-330 Once n' Done Floor Cleaner Concentrate**

Trade Name : Armstrong S-330

Product Code(s) : S-330

Product Use : Floor cleaning.

Chemical Family : Mixture.

Supplier's name and address:
Armstrong World Industries, Inc.
2500 Columbia Ave.
Lancaster, PA, U.S.A.
17603

Information Telephone # : (717) 396-2328

24 Hr. Emergency Tel # : CHEM-TEL: (800) 255-3924 (Within Continental U.S.); CHEM-TEL: +1 (813) 248-0585 (Outside U.S., please call collect).

SECTION 2 - HAZARDS IDENTIFICATION

Classification : OSHA Classification: This material is classified as hazardous under OSHA regulations (29CFR 1910.1200). Classification:
Acute Health Hazard;
Chronic Health Hazard.

Emergency Overview : Liquid; Greenish-yellow. Ammonia odour.
Warning! Ammonia gas may be liberated at high temperatures. May be harmful if inhaled or absorbed through the skin. May be harmful if swallowed. May cause respiratory irritation. May cause headache, nausea, dizziness and other symptoms of central nervous system depression. Causes severe eye irritation. May cause moderate to severe skin irritation. Contains material which can cause damage to the blood system, the liver and the kidneys.

POTENTIAL HEALTH EFFECTS:

Target organs : Eyes, skin, respiratory system, digestive system, central nervous system, blood system. Liver. Kidneys.

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

Signs and symptoms of short-term (acute) exposure

Inhalation : May cause irritation to the nose, throat and upper respiratory tract. May cause headache, nausea, dizziness and other symptoms of central nervous system depression. Inhalation in very high concentrations may result in blood system effects, such as red blood cell fragility.

Skin : May cause moderate to severe skin irritation. May be absorbed and cause symptoms similar to those for inhalation.

Eyes : Direct eye contact may produce severe irritation with possible eye damage.

Ingestion : May cause severe irritation to the mouth, throat and stomach. May cause headache, nausea, dizziness and other symptoms of central nervous system depression. May be absorbed and cause symptoms similar to those for inhalation.

Effects of long-term (chronic) exposure

: Prolonged or repeated contact may cause drying, cracking and defatting of the skin. Contains: 2-butoxyethanol. Chronic overexposure to 2-butoxyethanol may cause liver, kidney and blood damage. Humans are less sensitive to these effects.

Conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Carcinogenic status : See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards : See TOXICOLOGICAL INFORMATION, Section 11.



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Potential environmental effects

: See ECOLOGICAL INFORMATION, Section 12.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS #</u>	<u>Wt.%</u>
2-butoxyethanol	111-76-2	< 10.00
Ammonium hydroxide	1336-21-6	< 2.00

SECTION 4 - FIRST AID MEASURES

- Inhalation** : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Seek immediate medical attention/advice.
- Skin contact** : Immediately flush skin with running water for at least 15 minutes, while removing contaminated clothing. Get medical attention. Wash contaminated clothing before reuse.
- Eye contact** : Immediately flush eyes with running water for at least 15 minutes. If easy to do, remove contact lens, if worn. Seek immediate medical attention/advice.
- Ingestion** : Do not induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get medical attention.
- Notes For Physician** : Treat symptomatically.

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. Ammonia gas may be liberated at high temperatures.

Flammability classification (OSHA 29 CFR 1910.1200)

- : Non-flammable.

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.

Hazardous combustion products

- : Carbon oxides; Nitrogen oxides; Ammonia; hydrogen cyanide ; formaldehyde; Other unidentified organic compounds.

NFPA Rating

0 - Minimal	1 - Slight	2 - Moderate	3 - Serious	4 - Severe
Health: 2	Flammability: 1	Instability: 0	Special Hazards:	None.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions : All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. For personal protection see Section 8.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces.



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Spill response/cleanup : Ventilate area of release. Remove all sources of ignition. 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). The used containers should be properly closed and labeled. Residual of product, while still wet, can be cleaned up with warm soapy water. Notify the appropriate authorities as required.

Prohibited materials : None known.

Special spill response procedures

- : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
- US CERCLA Reportable quantity (RQ): None.

SECTION 7 - HANDLING AND STORAGE

Safe Handling procedures : Use in a well-ventilated area. Wear suitable protective equipment during handling. 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. Avoid breathing vapors or mists. Avoid contact with skin, eyes and clothing. Keep away from extreme heat and flame. Avoid contact with incompatible materials. Wash thoroughly after handling. Keep container tightly closed when not in use. Keep out of the reach of children.

Storage requirements : Store in a cool, dry, well-ventilated area. Keep away from direct sunlight. Keep away from incompatibles. Inspect periodically for damage or leaks. Keep out of the reach of children.

Incompatible materials : Oxidizing agents; Acids; Strong bases; Halogenated compounds; Alkali metals.

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

<u>Ingredients</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
2-butoxyethanol	20 ppm	N/Av	50 ppm (skin)	N/Av
Ammonium hydroxide	25 ppm (Ammonia)	35 ppm (Ammonia)	50 ppm (Ammonia)	N/Av

Ventilation and engineering measures

- : Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection : None required under normal conditions. If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Advice should be sought from respiratory protection specialists.

Skin protection : Impervious gloves must be worn when using this product. Advice should be sought from glove suppliers. Depending on conditions of use, safety shoes and additional protective clothing may also be necessary.

Eye / face protection : Safety glasses with side-shields or chemical splash goggles.

Other protective equipment : An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations

- : Avoid breathing vapor or mist. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Remove soiled clothing and wash it thoroughly before reuse. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state : Liquid. **Appearance** : Greenish-yellow
Odour : Ammonia odour. **Odour threshold** : N/Av



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pH	: 10.0 - 10.5	Specific gravity	: 1.00
Boiling point	: N/Av	Coefficient of water/oil distribution	: N/Av
Melting/Freezing point	: N/Av	Solubility in water	: miscible
Vapour pressure (mmHg @ 20° C / 68° F)	: N/Av	Evaporation rate (n-Butyl acetate = 1)	: N/Av
Vapour density (Air = 1)	: N/Av	Volatiles (% by weight)	: 90 – 95% including water
Volatile organic Compounds (VOC's)	: 6%, as delivered; 0.4% after dilution, per CARB rules.	Auto-ignition temperature	: N/Av
Flash point	: N/Av	Upper flammable limit (% by vol.)	: N/Av
Flash point Method	: N/Av	Flashback observed	: N/Av
Lower flammable limit (% by vol.)	: N/Av		
Flame Projection Length	: N/Av		
Viscosity	: N/Av		
Absolute pressure of container	: N/Av		
General Information	: No additional information.		

Section 10: STABILITY AND REACTIVITY

Stability and reactivity	: Stable under the recommended storage and handling conditions prescribed. Ammonia gas may be liberated at high temperatures.
Hazardous polymerization	: Hazardous polymerization does not occur.
Conditions to avoid	: Avoid heat and open flame. Keep away from direct sunlight. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.
Materials To Avoid And Incompatibility	: Oxidizing agents; Acids; Strong bases; Halogenated compounds; Alkali metals.
Hazardous decomposition products	: Refer to Section 5 for additional 'Hazardous combustion products'.

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicological data	: There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.
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<u>Ingredients</u>	<u>LC₅₀(4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
2-butoxyethanol	450 ppm (2.175 mg/L)	530 mg/kg	400 - 500 mg/kg
Ammonium hydroxide	3670 ppm (ammonia)	350 mg/kg	N/Av

Carcinogenic status	: No components are listed as carcinogenic by IARC, NTP, or OSHA.
Reproductive effects	: Not expected to have other reproductive effects.
Teratogenicity	: Not expected to be a teratogen.
Mutagenicity	: Not expected to be mutagenic in humans.
Epidemiology	: No information available.
Sensitization to material	: Not expected to be a skin or respiratory sensitizer.
Synergistic materials	: No information available.
Irritancy	: Moderate to severe skin irritant. Severe eye irritant.
other important hazards	: None known or reported by the manufacturer.



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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. This product contains the following substance which may also be hazardous for the environment:
2-butoxyethanol; Ammonium hydroxide.
The acute toxicity of 2-butoxyethanol is (OECD):
Toxicity to daphnia - EC50/48h/daphnia = 835 mg/L
Toxicity to algae - EC50/72h/algae = 911 mg/L
- The acute toxicity of ammonium hydroxide is (literature):
Toxicity to fish - LC50/96h/Fathead minnows = 8.2 mg/L
Toxicity to daphnia - EC50/48h/daphnia = 0.66 mg/L
Toxicity is primarily associated with pH.
- All other ingredients in these products are not considered acutely toxic for the environment, or are at such low levels they do not affect environmental toxicity.
- Mobility** : No information available.
- Persistence** : No data is available on the product itself. Contains: 2-butoxyethanol.
2-Butoxyethanol is considered to be readily biodegradable (OECD).
- Bioaccumulation potential** : No information available.
- Other Adverse Environmental effects** : No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

- Handling for Disposal** : Handle waste according to recommendations in Section 7.
- Methods of Disposal** : Dispose of in accordance with federal, provincial and local hazardous waste laws.
- RCRA** : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method.

SECTION 14: TRANSPORT INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
49CFR/DOT	None.	Not regulated.	Not regulated	None	
49CFR/DOT Additional information	None.				
TDG	None.	Not regulated.	Not regulated	None	
TDG Additional information	None.				

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

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

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): None.

SARA TITLE III: Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this material.



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SARA TITLE III: Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes: Immediate (Acute) health hazard; Chronic Health Hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This material is not subject to SARA notification requirements, since it does not contain any Toxic Chemical constituents above de minimus concentrations.

US State Right to Know Laws:

California Proposition 65: This product does not contain any chemicals known to the State of California to cause cancer.

Other U.S. State "Right to Know" Lists: The following chemicals are specifically listed by individual States: 2-butoxyethanol (CA, MA, MN, NJ, PA, RI); Ammonium hydroxide (CA, MA, NJ, PA).

International Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

SECTION 16 - OTHER INFORMATION

HMIS Rating : ★ - Chronic hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe

Health: *2 *Flammability:* 1 *Reactivity:* 0

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
CARB: California Air Resources Board
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
DOT: Department of Transportation
DSL: Domestic Substances List
EPA: Environmental Protection Agency
HMIS: Hazardous Materials Identification System
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
Inh: Inhalation
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
N/Ap: Not Applicable
N/Av: Not Available
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NTP: National Toxicology Program
OECD: Organization for Economic Co-operation and Development
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average



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- References** :
1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2012.
 2. International Agency for Research on Cancer Monographs, searched 2012.
 3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2012 (Chempendium, HSDB and RTECs).
 4. Material Safety Data Sheets from manufacturer.
 5. US EPA Title III List of Lists - October 2012 version.
 6. California Proposition 65 List - November 2, 2012 version.

<u>Prepared for:</u> Armstrong World Industries, Inc. 2500 Columbia Ave. Lancaster, PA, U.S.A., 17603 Telephone: 717-396-2328 Please direct all enquiries to Armstrong World Industries.	
<u>Prepared by:</u> ICC The Compliance Center Inc. http://www.thecompliancecenter.com	

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Revision Information

- : (M)SDS sections updated:
2. HAZARDS IDENTIFICATION;
 11. TOXICOLOGICAL INFORMATION;
 15. REGULATORY INFORMATION.

END OF DOCUMENT