

ODOR INVESTIGATION

**Alfred J. Gomes Elementary School
286 South Second Street
New Bedford, Massachusetts**



Prepared by:
Massachusetts Department of Public Health
Bureau of Environmental Health
Indoor Air Quality Program
January 2012

Background/Introduction

At the request of Marianne De Souza, Director of Public Health, New Bedford Health Department, the Massachusetts Department of Public Health (MDPH), Bureau of Environmental Health (BEH) provided assistance and consultation regarding indoor air quality (IAQ) at the Alfred J. Gomes Elementary School (GES) located at 286 South Second Street, New Bedford, Massachusetts. The assessment was prompted by odors resulting from the application of a floor-stripping material in second floor classrooms.

BEH/IAQ staff were contacted by Ms. DeSouza for technical assistance the morning of Sunday January 8, 2012; she reported that during a carpet removal project on Saturday January 7, 2012, a floor-stripping material that was used to remove glue and mastic had leaked through cracks in the concrete floor in the 700s pod area into several classroom areas directly below (600s pod area). BEH staff recommended to Ms. DeSouza that:

- The material data safety sheet (MSDS) should be consulted to determine proper clean-up methods (e.g., neutralizing agent);
- The affected areas should be vented continuously and thoroughly cleaned (e.g., floors, ceilings and other materials) repeatedly over the course of the weekend until odors dissipated; and
- In the event odors did not dissipate, the school administration should develop a contingency plan to relocate classrooms to alternate areas until the area could be reoccupied.

BEH staff was contacted by Ms. DeSouza later on the afternoon of Sunday January 8, 2012; she reported that:

- MSDSs for the stripper as well as the neutralizing agent were obtained (see Attachments 1 and 2);
- Surfaces and building materials had been repeatedly treated with the neutralizing agent and cleaned with cold clean water as per instructions on the product label (Attachment 3);
- High speed industrial fans were being employed along with open windows to provide cross ventilation; and that
- Local school and health officials were planning on meeting later that evening to reevaluate.

Late on the evening of Sunday January 8, 2012, BEH staff were contacted by Ms. DeSouza who reported that although the area had been repeatedly cleaned and vented, some residual odors remained and that the school had a contingency in place to relocate classrooms to allow the area to continue to be vented. Subsequent to that, Ms. DeSouza reported that classrooms had indeed been relocated to alternate sites over the course of the week in order for the area to continue to be vented and for odors to dissipate.

BEH staff received a follow-up call from Ms. DeSouza on Thursday January 12, 2012, requesting assistance from BEH's IAQ Program to conduct a site visit to the assess the affected areas due to lingering odors. On the morning of Friday January 13, 2012, Cory Holmes, Environmental Analyst/Inspector in BEH IAQ Program conducted an IAQ assessment at the GES. Mr. Holmes was accompanied by Marco Pimentel, Head Custodian; Jamie Camacho, Principal; Ellyn Gallant, Assistant Principal and Ms. DeSouza. During the course of this assessment, GES staff raised concerns regarding dust residue generated from carpet removal in the 700s pod area.

Methods

Air testing for total volatile organic compounds (TVOCs) was conducted using a Thermo Environmental Instruments Inc., Model 580 Series Photo Ionization Detector (PID). Air tests for airborne particle matter with a diameter less than 2.5 micrometers were taken with the TSI, DUSTTRAK™ Aerosol Monitor Model 8520.

Results/Discussion

Total Volatile Organic Compounds

BEH reviewed the MSDS for the product Pioneer Eclipse Final Strip H.D.® Heavy Duty Floor Stripper. The product contains the volatile organic compounds (VOCs) Ethylene Glycol Mono-Butyl Ether (a mineral solvent) and Ethanolamine (a weak base material with an ammonia-like odor). VOCs are organic compounds that have the ability to evaporate at room temperature. Frequently, exposure to low levels of total VOCs (TVOCs) may produce acute eye, nose, throat and/or respiratory irritation in some sensitive individuals. In an effort to determine whether measurable levels of VOCs were present, BEH staff conducted air monitoring for TVOCs.

Outdoor (ambient) TVOC levels were measured upwind and away from likely potential VOC sources. Comparison measurements were also taken in unaffected areas inside the GES. TVOC readings for both outdoor and unaffected areas were non-detectable (ND) (Table 1).

TVOC measurements were taken directly over affected floors as well as 4 to 5 feet off the ground (e.g., breathing zone) in the 700s pod area as well as in classrooms below (the 600s pod area). Measurements in the 700s pod area were taken both under maximum ventilation conditions (e.g., fans operating/windows open) and with windows closed and fans deactivated. It

is important to note that although no measureable levels of TVOCs were detected. Lingering odors existed 700s pod area, which were more noticeable when fans were deactivated and windows shut. Lingering odors could provide a source of eye and respiratory irritation to sensitive individuals.

Other IAQ Evaluations

Particulate Matter

Indoor air quality can be negatively influenced by the presence of airborne respiratory irritants such as those from dust-generating renovation projects (e.g., carpet removal). Exposure to particulate matter with a diameter of 2.5 micrometers (μm) or less (PM_{2.5}) can produce immediate, acute health effects upon exposure. Several staff members whose classrooms are located in the 700s pod area reported a film of dust/debris on classroom items that were not removed during the carpet removal project. To determine elevated particulates were present in the indoor environment, BEH staff obtained measurements for PM_{2.5}.

The US EPA has established NAAQS limits for exposure to particulate matter. Particulate matter is airborne solids that can be irritating to the eyes, nose and throat. The NAAQS originally established exposure limits to particulate matter with a diameter of 10 μm or less (PM₁₀). According to the NAAQS, PM₁₀ levels should not exceed 150 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) in a 24-hour average (US EPA, 2006). These standards were adopted by both American Society of Heating Refrigeration and Air-Conditioning Engineers (ASHRAE) and the Building Officials & Code Administrators (BOCA) (BOCA, 1993; ASHRAE, 1989). Since the issuance of the ASHRAE standard and BOCA Code, US EPA established a more protective standard for fine airborne particles. This more stringent PM_{2.5} standard requires

outdoor air particle levels be maintained below $35 \mu\text{g}/\text{m}^3$ over a 24-hour average (US EPA, 2006). Although both the ASHRAE standard and BOCA Code adopted the PM10 standard for evaluating air quality, MDPH uses the more protective PM2.5 standard for evaluating airborne particulate matter concentrations in the indoor environment.

Outdoor PM2.5 was measured at $20 \mu\text{g}/\text{m}^3$ (Table 1). Indoor PM2.5 levels ranged from 14 to $26 \mu\text{g}/\text{m}^3$ (Table 1). Both indoor and outdoor PM 2.5 levels were below the NAAQS PM2.5 level of $35 \mu\text{g}/\text{m}^3$. While the accumulated dust/debris left from the carpet removal are unsightly and require cleaning, no elevated levels of PM2.5 were found in locations where the carpet removal activities occurred. Therefore, it appears that the dust/debris are too heavy to be a source of airborne (i.e., respirable) pollutants.

Frequently, indoor air levels of particulates (including PM2.5) can be at higher levels than those measured outdoors. A number of mechanical devices and/or activities that occur in schools can generate particulate during normal operations. Sources of indoor airborne particulates may include but are not limited to particles generated during the operation of fan belts in the HVAC system, cooking in the cafeteria stoves and microwave ovens; use of photocopiers, fax machines and computer printing devices; operation of an ordinary vacuum cleaner and heavy foot traffic indoors.

Conclusions/Recommendations

In view of the findings at the time of the assessment, the following is recommended:

1. Continue to ventilate the impacted area using existing mechanical ventilation components (univents and exhaust vents) as well as supplementary fans as needed until odors fully dissipate.

2. Use openable windows in conjunction with mechanical ventilation to increase air exchange. Care should be taken to ensure windows are properly closed at night and weekends to avoid the freezing of pipes and potential flooding.
3. If odors continue to linger, consider contacting the manufacturer, a flooring specialist or a professional cleaning/restoration service for further advice on cleaning/neutralizing odors.
4. Ensure Material Safety Data Sheets (MSDS) are obtained for all materials used during renovations and keep them in an area that is accessible to all individuals during periods of building operations as required by the Massachusetts Right-To-Know Act (MGL, 1983).
5. Consult MSDS' for any material applied to the affected area during renovation(s) including any sealant, carpet adhesive, tile mastic, flooring and/or roofing materials. Provide proper ventilation and allow sufficient curing time as per the manufacturer's instructions concerning these materials.
6. Schedule projects that produce large amounts of dusts, odors and emissions during extended periods of unoccupancy (e.g., school vacations).
7. Communicate project schedules to all affected parties through meetings, emails and/or other form of notification prior to commencement of work and throughout the duration of the project.
8. Remove or ensure all classroom materials are covered and/or sealed in cleanable containers prior to dust/debris-generating work.

References

ASHRAE. 1989. Ventilation for Acceptable Indoor Air Quality. American Society of Heating, Refrigeration and Air Conditioning Engineers. ANSI/ASHRAE 62-1989.

BOCA. 1993. The BOCA National Mechanical Code/1993. 8th ed. Building Officials & Code Administrators International, Inc., Country Club Hills, IL.

OSHA. 1997. Limits for Air Contaminants. Occupational Safety and Health Administration. Code of Federal Regulations. 29 C.F.R 1910.1000 Table Z-1-A.

US EPA. 2006. National Ambient Air Quality Standards (NAAQS). US Environmental Protection Agency, Office of Air Quality Planning and Standards, Washington, DC.
<http://www.epa.gov/air/criteria.html>.

Location: Gomes Elementary School
Address: 286 South Second Street, New Bedford

Table 1

Indoor Air Results
Date: 1/13/2011

Location/ Room	TVOCs (*ppm)	PM2.5 (µg/m ³)	Windows Openable	Ventilation		Remarks
				Supply	Exhaust	
Background	ND	20				Wind/Weather conditions: rainy/cloudy clearing to mostly sunny with scattered clouds, winds SSW 7-26 mph, gusts up to 46 mph
1 st floor Conference Room	ND	16	Y	Y	Y	
2 nd Floor Hallway (near cafeteria)	ND	21	N	N	N	
2 nd Floor Cafeteria	ND	23	Y	Y	Y	
2 nd Floor Common Area Pod 1	ND	26	N	N	N	
2 nd Floor Common Area Pod 2	ND	24	N	Y	Y	
2 nd Floor 700s Pod 3	ND	22	Y	Y	Y	Windows open, fans operating, moderate odors detected
1st Floor 600s Pod 2 (642)	ND	15	Y	Y	Y	Area with cracks in concrete ceiling where stripping material seeped
1st Floor 600s Pod 2 (650)	ND	16	Y	Y	Y	Area with cracks in concrete ceiling where stripping material seeped
1st Floor 600s Pod 2 (651)	ND	18	Y	Y	Y	Area with cracks in concrete ceiling where stripping material seeped
1st Floor 600s Pod 2 (620)	ND	20	Y	Y	Y	Area with cracks in concrete ceiling where stripping material seeped through
2 nd Floor 700s Pod 3	ND	14	Y	Y	Y	Measurement taken with fans off and windows shut-odors more pronounced

ppm = parts per million

ND = non detect

µg/m³ = micrograms per cubic meter

TVOCs = total volatile organic compounds

Comfort Guidelines

Carbon Dioxide: < 600 ppm = preferred
600 - 800 ppm = acceptable
> 800 ppm = indicative of ventilation problems

Particle matter 2.5 < 35 µg/m³

Attachment 1
MSDS for Pioneer Eclipse Final Strip H.D.® Heavy Duty Floor Stripper

Pioneer Eclipse

MATERIAL SAFETY DATA SHEET

Issued: April 1, 2011
Supersedes: May 20, 2009

FINAL STRIP HEAVY DUTY (H.D.) STRIPPER

1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: Final Strip Heavy Duty Floor Stripper Product Number: 502
Product Type: non-ammoniated, heavy duty stripper

Manufacturer Address:

Amano Pioneer Eclipse Corporation
P.O. Box 909
1 Eclipse Road
Sparta, NC 28675

Contact Information:

Telephone: 1-336-372-8080
Email: msds@pioneer-eclipse.com
Internet: www.pioneer-eclipse.com

FOR CHEMICAL EMERGENCY: Spill, Leak, Fire, Exposure or Accident. Call CHEMTREC Day or Night
Within USA and Canada 1-800-424-9300. Outside USA and Canada 1-703-627-3887 (collect calls accepted)

2: HAZARDS IDENTIFICATION

OSHA status: Hazardous-Corrosive

Precautions: Danger. Combustible. Corrosive to skin and eyes. Keep container closed when not in use. Keep out of reach of children.

Potential Health Effects:

Eye Contact: Causes eye burns. May cause permanent damage.

Skin Contact: Causes skin burns. May cause permanent damage.

Inhalation: May be harmful if inhaled. May cause irritation and corrosive effects to nose, throat and respiratory tract.

Ingestion: Harmful if swallowed. May cause burns to mouth, throat and stomach.


Health: 3
Flammability: 2
Reactivity: 0

3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS Number	Weight %
ethylene glycol monobutyl ether	111-78-2	10 - 30
monoethanolamine	141-43-6	7 -13

4: FIRST AID MEASURES

Eye Contact: In case of contact, immediately flush eye with plenty of water for at least 15 minutes. (If easy to do, remove contact lenses, if worn). Get medical attention immediately.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately.

Inhalation: If breathing is difficult. Remove subject to fresh air. Seek medical attention immediately.
Call a physician or poison control center immediately. Do not induce vomiting. Seek medical advice immediately.

Ingestion: Call a physician or poison control center immediately. Do not induce vomiting. Seek medical advice immediately.

5: FIRE FIGHTING MEASURES

Extinguishing Media: Water spray, CO₂ dry chemical, alcohol-type or universal type foams

Special Fire Fighting Procedures: Corrosive liquid. (See Sections 8 and 10.) Do not spray a solid stream of water or foam directly in hot liquid. This may cause frothing. Fire fighters should wear NIOSH approved breathing apparatus.

Hazardous Combustible Products: N/A

Unusual Fire and Explosion Hazards: Materials can splatter above 100° C / 212° F

6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Put on appropriate personal protective equipment (see Section 8). Keep spectators away. Floors may be slippery; use care to avoid falling.

Environmental Precautions: Keep spills and cleaning run-off out of sewers and open bodies of water.

Containment and Clean-Up

Small Spills: Absorb spill with inert material (e.g. sand, earth) and dispose of as waste material in accordance with local, state and federal regulations.

Large Spills: Neutralize spill area. Dike and contain spill with inert material (e.g. sand, earth). Transfer liquid to containers for recovery or disposal and solid diking material to separate containers for disposal.

Attachment 1

MSDS for Pioneer Eclipse Final Strip H.D.® Heavy Duty Floor Stripper



MATERIAL SAFETY DATA SHEET

Issued: April 1, 2011
Supersedes: May 20, 2009

FINAL STRIP HEAVY DUTY (H.D.) STRIPPER

Waste Disposal: Landfill or incinerate the contaminated solids and diking material in accordance with local state and federal regulations concerning disposal of hazardous materials. Non-salvageable liquid should be drummed and turned over to a licensed hazardous waste disposal facility.

7: HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Use only in well-ventilated areas. Avoid breathing vapors or mists. Remove and wash contaminated clothing and footwear before re-use.

Storage: Storage temperature (Max. 60°C/140°F - Min. 1°C/34°F)

Other information: Keep from freezing, product may coagulate. Keep container sealed when not in use. Keep out of reach of children.

8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limit Values

Ingredient	CAS Number	ACGIH		OSHA	
		TWA	STEL	TWA	STEL
ethylene glycol monobutyl ether	111-78-2	20 ppm (BEI)	N/L	50 ppm (skin)	N/L
monoethanolamine	141-43-5	3 ppm	6 ppm	3 ppm	N/L

Engineering Controls: Ensure adequate general ventilation.

Personal Protective Equipment (PPE)

Eye/Face Protection: Chemical splash goggles (ANSI Z87.1-1989 or approved equivalent.)

Skin Protection: Rubber gloves recommended. If major exposure is possible, wear suitable protective clothing such as rubber boots, apron, etc.

Respiratory Protection: None required when permissible airborne concentrations are not exceeded. In an emergency, use approved positive pressure self-contained breathing device.

9: PHYSICAL AND CHEMICAL PROPERTIES

<p>Appearance: clear, red liquid</p> <p>Odor Threshold: N/E</p> <p>Freezing Point: 32°F / 0°C</p> <p>Flash Point: 158°F / 70°C (ASTM D56)</p> <p>Viscosity: < 5 cps @ 68°F (20°C)</p> <p>Vapor Pressure: less than water</p> <p>Relative Density: 8.3 lb/gal @ 68°F / 0.99 kg/l @ 20°C</p> <p>Partition Coefficient (n-octanol/water): N/E</p> <p>Decomposition Temperature: N/E</p>	<p>Odor: slight lemon</p> <p>pH: 12.6 ± 0.5</p> <p>Boiling Point: 212°F / 100°C</p> <p>Evaporation Rate: less than water</p> <p>Upper/Lower Flammability limits: N/A</p> <p>Vapor Density: greater than air</p> <p>Solubility: 100% soluble in water</p> <p>Auto ignition temperature: N/E</p> <p>Volatile by Weight: 95 - 97%</p>
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10: STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Hazardous reactions: Adding water directly to the product may generate heat and cause product to splash. To avoid adverse reaction, always add product to water, do not add water to product.

Conditions to avoid: Improper order of dilution

Incompatible materials: Strong acids (or bases) and oxidizing agents

Hazardous decomposition products: Carbon monoxide, carbon dioxide and nitrogen oxides

11: TOXICOLOGICAL INFORMATION

Acute Toxicity: Not determined on product.

Component	LD50 Oral - Rat (mg/kg)	LD50 Dermal - Rabbit (mg/kg)	LC50 Inhalation - Rat (mg/l)	Carcinogenicity	CA - Prop 65
ethylene glycol monobutyl ether	470	220	2.2 (4 hr)	IARC 3	N/L
monoethanolamine	1,720	1025	N/A	N/L	N/L

Attachment 1

MSDS for Pioneer Eclipse Final Strip H.D.® Heavy Duty Floor Stripper



MATERIAL SAFETY DATA SHEET

Issued: April 1, 2011
Supersedes: May 20, 2009

FINAL STRIP HEAVY DUTY (H.D.) STRIPPER

LOCAL EFFECTS

Skin contact: Corrosive. Can cause skin burns.
Eye contact: Corrosive. Can cause eye burns.
Sensitization: None expected
Chronic effects: None expected

SPECIFIC EFFECTS

Carcinogenicity: None known
Reproductive effects: None known
Teratogenicity: None known
Mutagenicity: None known

12: ECOLOGICAL INFORMATION

Ecological data not available.

13: DISPOSAL CONSIDERATIONS

Disposal of this material should be in accordance with local, regional, and national regulations.

14: TRANSPORT INFORMATION

Proper Shipping Name: Corrosive liquid, n.o.s (ethanolamine) **Hazard Class:** 8
UN Number: UN1790 **Packing Group:** III

15: REGULATORY INFORMATION

U.S. Regulations/Reporting:

Ingredient	CAS Number	SARA 302/304	SARA 313	CERCLA
ethylene glycol monobutyl ether	111-76-2	N/L	1.00%	N/L
monoethanolamine	141-43-5	N/L	N/L	N/L

State Right to Know Status:

Ingredient	CAS Number	MA - RTK	NJ - RTK	PA - RTK	RI - RTK
ethylene glycol monobutyl ether	111-76-2	present	present	present	present
monoethanolamine	141-43-5	present	present	present	present

Canada Regulations/Reporting

WHMIS Hazard Symbol:
WHMIS hazard class: E B3

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations (CPR)* and the MSDS contains all of the information required by the *CPR*.

Ingredients required for disclosure:

Ingredient	CAS Number	Weight %	Classification
ethylene glycol monobutyl ether	111-76-2	> 1%	B3, D1A, D2B
monoethanolamine	141-43-5	> 1%	B3, E

16: OTHER INFORMATION

Abbreviations Used:

N/E - Not Established
 N/L - Not Listed

N/A - Not applicable
 IARC 3- Unclassifiable as to Carcinogenicity in Humans.

Revision History:

04/01/2011- format change to ANSI Z400.1-2004

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This MSDS has been provided to you in accordance with the OSHA Hazard Communication Standard (29CFR1910.1200).

****IMPORTANT SAFETY INFORMATION**DO NOT DISCARD**PLEASE ROUTE TO COMPANY SAFETY OFFICER****

Attachment 2
MSDS for Pioneer Eclipse Eclipse® Neutral All Purpose Cleaner

Pioneer Eclipse

MATERIAL SAFETY DATA SHEET

Issued: April 1, 2011
Supersedes: May 10, 2009

ECLIPSE® NEUTRAL ALL PURPOSE CLEANER

1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: Eclipse Neutral All Purpose cleaner Product Number: 301
Product Type: All purpose synthetic water-based cleaner

Manufacturer Address:

Amsco Pioneer Eclipse Corporation
P.O. Box 909
1 Eclipse Road
Sparta, NC 28675

Contact Information:

Telephone: 1-336-372-8080
Email: msds@pioneer-eclipse.com
Internet: www.pioneer-eclipse.com

FOR CHEMICAL EMERGENCY: Spill, Leak, Fire, Exposure or Accident. Call CHEMTREC Day or Night.
Within USA and Canada 1-800-424-9300. Outside USA and Canada 1-703-627-3897 (collect calls accepted)

2: HAZARDS IDENTIFICATION

OSHA status: Not classified as hazardous.
Precautions: Keep container closed when not in use. Keep out of reach of children.

Potential Health Effects:

Eye Contact: None expected under normal use.
Skin Contact: None expected under normal use.
Inhalation: None expected under normal use.
Ingestion: None expected under normal use.



3: COMPOSITION/INFORMATION ON INGREDIENTS

This product contains no hazardous ingredients.

4: FIRST AID MEASURES

Eye Contact: Rinse with plenty of water. If irritation develops and persists, seek medical attention.
Skin Contact: Rinse with plenty of water. If irritation develops and persists, seek medical attention.
Inhalation: If breathing is difficult, remove to fresh air. If symptoms persist, seek medical attention.
Ingestion: If ingested, do not induce vomiting. Seek medical attention.

5: FIRE FIGHTING MEASURES

Extinguishing Media: Dry chemical, water spray, foam, carbon dioxide
Special Fire Fighting Procedures: None
Hazardous Combustible Products: Materials can splatter above 212 °F / 100 °C
Unusual Fire and Explosion Hazards: No special fire fighting procedures recommended

6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Put on personal protective equipment (see Section 8). Keep spectators away.
Floors may be slippery; use care to avoid falling.
Environmental Precautions: Keep spills and cleaning run-off out of sewers and open bodies of water.
Containment and Clean-Up
Small Spills: Absorb spill with inert material (e.g. sand, earth) and dispose of as waste material in accordance with local, state and federal regulations.
Large Spills: Dike and contain spill with inert material (e.g. sand, earth). Transfer liquid to containers for recovery or disposal and solid diking material to separate contains for disposal.
Waste Disposal: Landfill or incinerate the contaminated solids and diking material in accordance with local, state and federal regulations. Non-salvageable liquid should be drummed and disposed of in accordance with local, state and federal regulations.

Attachment 2
MSDS for Pioneer Eclipse Eclipse® Neutral All Purpose Cleaner

Pioneer Eclipse®

MATERIAL SAFETY DATA SHEET

Issued: April 1, 2011
Supersedes: May 10, 2009

ECLIPSE® NEUTRAL ALL PURPOSE CLEANER

7: HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Use only in well-ventilated areas. Avoid breathing vapors or mists. Remove and wash contaminated clothing and footwear before re-use.

Storage: Storage temperature (Max. 60°C/140°F - Min. 1°C/34°F).

Other information: Keep from freezing, product may coagulate. Keep container sealed when not in use. Keep out of reach of children.

8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Ensure adequate general ventilation.

Personal Protective Equipment (PPE)

Eye/Face Protection: Safety glasses recommended.

Skin Protection: Rubber gloves recommended.

Respiratory Protection: No specific personal protection is required.

9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: pink, viscous liquid	Odor: Slight lemon
Odor Threshold: N/E	pH: 9.5 ± 0.5
Freezing Point: 32 °F / 0°C	Boiling Point: 212 °F / 100 °C
Flash Point: non-combustible	Evaporation Rate: less than water
Flammability: non-combustible	Upper/Lower Flammability limits: N/E
Vapor Pressure: less than water	Vapor Density: greater than air
Relative Density: 8.4 lb/gal @ 68°F/ 1.01 kg/l @ 20 °C	Solubility: 100% soluble in water
Partition Coefficient (n-octanol/water): N/E	Auto Ignition temperature: N/E
Decomposition Temperature: N/E	Volatile by Weight: 92 - 94%
Viscosity: 200 ± 50 centipoise @ 68 °F (20 °C)	

10: STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions to avoid: None known.

Incompatible materials: Strong acids and bases.

Hazardous decomposition products: None known.

Hazardous reactions: None known.

11: TOXICOLOGICAL INFORMATION

Acute Toxicity: Not determined on product.

LOCAL EFFECTS

Skin contact: May cause mild irritation

Eye contact: May cause mild irritation

Sensitization: None expected

Chronic effects: None expected

SPECIFIC EFFECTS

Carcinogenicity: None known

Reproductive effects: None known

Teratogenicity: None known

Mutagenicity: None known

12: ECOLOGICAL INFORMATION

Ecological data not available.

13: DISPOSAL CONSIDERATIONS

Disposal of this material should be in accordance with local, regional, and national regulations.

14: TRANSPORT INFORMATION

This product is not classified as hazardous for transportation.

Attachment 2
MSDS for Pioneer Eclipse Eclipse® Neutral All Purpose Cleaner

Pioneer Eclipse

MATERIAL SAFETY DATA SHEET

Issued: April 1, 2011
Supersedes: May 10, 2009

ECLIPSE® NEUTRAL ALL PURPOSE CLEANER

15: REGULATORY INFORMATION

U.S. Regulations/Reporting	Components are not subject to US Reporting (SARA 302/304, 313 CERCLA)
State Right to Know Status:	Components are not subject to State RTK Reporting (MA, NJ, PA, RI)
Canada Regulations/Reporting:	This product has been classified in accordance with the hazard criteria of the <i>Controlled Products Regulations (CPR)</i> and the MSDS contains all of the information required by the <i>CPR</i> .
WHMIS Hazards:	Not a controlled product. Components not subject to disclosure.

16: OTHER INFORMATION

Abbreviations Used:

N/E - Not Established

N/A - Not applicable

N/L - Not Listed

Revision History:

April 1, 2011- MSDS format change to ANSI Z400.1-2004, correction to density

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This MSDS has been provided to you in accordance with the OSHA Hazard Communication Standard (29CFR1910.1200).

****IMPORTANT SAFETY INFORMATION**DO NOT DISCARD**PLEASE ROUTE TO COMPANY SAFETY OFFICER****

Attachment 3
 Product Label for Final Strip H.D.® Heavy Duty Floor Stripper

Pioneer Eclipse

A Division of The AMANO Group

Heavy Duty Floor Stripper

Final Strip H.D.®

CONTENTS:
 2 X 1.5 US GALLONS (2 X 5.5 LITERS)

PRODUCT OF MANUFACTURE BY:
 Oxi Finish Pioneer Eclipse Technical Services, 6150 W. 45th + 1395 172 Street, Aurora, Illinois 60015
 EQUIP BY PIONEER ECLIPSE CORPORATION
 11111 S. 15th Ave #200
 Aurora, IL 60015
 708.527.3897
 www.pioneer-eclipse.com

MSD SDS • FLOOR STRIPPER
 (2019) Pioneer Eclipse Corp
 51107PS-0011

DIRECTIONS FOR USE:

1. Mix FINAL STRIP H.D.® Floor Stripper in mop bucket or autostrubber according to the following dilution ratios:
 For sealer and coating removal: 1:4 (32 US oz/gallon warm water (1.25 liters/5 liters of warm water))
 For linoleum application: 1:8 (16 US oz/gallon warm water (0.62 liters/5 liters of warm water))
2. Apply solution liberally to the floor and allow to soak for 15 minutes. Do not allow stripper solution to dry on the floor.
3. Scuff floor with recommended Pioneer Eclipse autostrubber or stripping machine with Pioneer Eclipse pads or brushes.
4. Pick up dry solution with autostrubber or wet vac.
5. Use a clean mop or autostrubber to rinse floor (begin with a Pioneer Eclipse neutral cleaner following label directions).
6. Rinse floor again with clean cold water. Allow to dry thoroughly before applying sealer or coating.

NOTE: Works most effectively in warm water. Test floor for color fastness in an inconspicuous area.

In California: For Light or Medium stripping, dilute at 1:9 (14.2 oz per gallon warm water).
 For Heavy stripping, dilute at 1:4 (32 oz per gallon warm water).
Industrial Use Only.

HAZARDOUS INGREDIENTS: Ethanol (90% Also See: Ethyl Ether (CAS# 109-87-2), Ethanolamine (2659-141-4), S) (product code exempt)

PRECAUTIONS: Keep out of reach of children. Keep container sealed when not in use. Keep from freezing. Contaminated Gloves and safety glasses recommended. Floor may become very slippery. Wear appropriate non-slip safety shoes. The product should not be used in contact with wood, rubber, paint surfaces or on asphalt or concrete tile. Please read the label for Safety Data Sheet before handling the product.

FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure or accident. Call CHEMTRAC: Day or Night Within USA and Canada: 1-800-424-9300. Outside USA and Canada: +1 708 527 3897 (product code exempt)

RISKS: Causes severe burns. Hazardous if inhaled, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin.

SAFETY ADVICE: Keep liquid up and out of the reach of children. Wear adequate gloves and eye/face protection. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of contact or if you feel unwell seek medical advice immediately (show the label where possible).