

**Proposal for the Relocation of Tooling
Fabrication, Research & Development, and
Moonshine Operations to
1345 Redwood Ave**

**Boeing Canada Operations Ltd.
Winnipeg, Manitoba**

February 11, 2016

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Proposal for the Relocation of Tooling Fabrication, Research & Development, and Moonshine Operations to 1345 Redwood Ave

1. Executive Summary

This Environment Act Proposal is to request approval for the relocation of Tooling Fabrication, Research and Development, and Moonshine operations from the Boeing Canada Operations Ltd. Facility located at 99 Murray Park Road to the company's facility located at 1345 Redwood Avenue in Winnipeg Manitoba.

The Boeing Canada Operations Ltd. Facility located at 1345 Redwood Avenue is currently operating under Environment Act License Number 2846.

2. Introduction and Background

The Boeing Canada Operations Ltd. Facility located at 1345 Redwood Avenue in Winnipeg, Manitoba has been licensed as a spray paint operation facility under the Environment Act (C.C.S.M. c. E125) since 2008 (Licence Number 2846).

Boeing Canada Operations Ltd. is one of the largest aerospace composite manufacturers in Canada. In order to sustain their current needs, it is necessary to move the operation's Tooling, R&D, and Moonshine activities from Boeing Canada Operation Ltd.'s 99 Murray Park Road facility to the operation's facility located 1345 Redwood Avenue.

The purpose of this Environment Act Proposal is to ensure that the addition of the proposed operations are designed, constructed, and operated in an environmentally responsible manner consistent with provincial environmental legislation, policies, and guidance.

The following sections describe the proposed operations.

2.1 Tooling Fabrication

The proposed Tooling Fabrication operation encompasses tool building, repair, assembly, and rework functions.

Representative tasks include metal machining (including lathe, mill, and surface grinder), welding, and general metal work (shear, saws, and grinding).

Tooling is fabricated using fiberglass, reshape, plastics, metal, and other materials as required from raw components through to a final finished product.

Table 1 describes products used in the Tooling Fabrication Shop.

Table 1 Tooling Fabrication Shop Products

Product Name	Manufacturer	Boeing SDS Number	Maximum Exposure Time	Maximum Quantity	Exposure Unit
Scotch-Weld Structural Adhesive Primer EC-1593	3M (Minnesota Mining & Mfg.)	27934	2 hours	250 mL	Per use
EL-IHL315A	Axson North America	33772	2 hours	15 kg	Per use
EL-IHL315B	Axson North America	33771	2 hours	3.8 kg	Per use
Acetone	Boeing Co.	64332	3 hours	2 L	Per use
Isopropyl Alcohol	Boeing Co.	64334	30 minutes	500 mL	Per use
Methyl Ethyl Ketone	Boeing Co.	64337	3 hours	2 L	Per use
ES-215/A	Cass Polymers	120868	2 hours	10 kg	Per use
ES-215/B	Cass Polymers	31019	2 hours	1.7 kg	Per use
834 Frekote 710-NC DR	Henkel AG & Co. KGaA	128532	30 minutes	250 mL	Per use
Epocast 4B-AT	Huntsman	26774	2 hours	15 kg	Per use
Epocast 5A-21	Huntsman	68063	2 hours	15 kg	Per use
Epocast 5B-10	Huntsman	30153	2 hours	1.7 kg	Per use
Epocast 7W-AT	Huntsman	21563	2 hours	10 kg	Per use
Epocast 7W-B	Huntsman	21564	2 hours	1.6 kg	Per use
Epocast 946	Huntsman	21747	2 hours	1.5 kg	Per use
Epocast 959	Huntsman	22848	2 hours	1.2 kg	Per use
Aluminum Putty (F) Resin 10610	Illinois Tool Works, Inc.	26735	2 hours	2 L	Per use
Defin Eggshell MBase 9498	PPG Industries, Inc.	201969	2 hours	1 L	Per use
LR-200 Yellow	Resin Services	23687	2 hours	15 kg	Per use
LH-102 Blue	Resin Services	23686	2 hours	1.7 kg	Per use

2.2 Research and Development (R&D)

The proposed R&D operation encompasses the build, prototype, development, and testing of new technologies and processes to evolve future production operations.

The proposed R&D Lab provides emergent support, including but not limited to; coupons and testing, 3D printing, custom fabrication, inspection standards, and other unique requests.

Representative tasks of the proposed R&D Lab include the machining of metal and composite parts (including lathe, mill, saw, and drilling), welding, and 3D printing.

Table 2 describes products used in the R&D Lab.

Table 2 R&D Lab Products

Product Name	Manufacturer	Boeing SDS Number	Estimated Annual Quantities
Frekote 710-NC 5 LTR Mold Release	Henkel Canada Corporation	151381	20 L
Methyl Ethyl Ketone	Univar	120981	10 L
Acetone	Univar	121283	10 L
Isopropyl Alcohol	Univar	110790	10 L
Boelube (Liquid)	The Orelube Corporation	15599	8 L
Cimperial 1070	Milacron, LLC (Cimcool)	145889	20 L

2.3 Moonshine

The proposed Moonshine operation encompasses the building and assemblies of shop hardware to aid in production.

Representative tasks of the proposed Moonshine operation includes machining (including lathe, mill, and surface grinder), and general metal work.

The proposed Moonshine operation builds and assembles shop hardware using plastics, fiberglass, rensape, wood, metals (aluminum and steel), and other materials as required from raw components through to a finished product.

Table 3 describes products used in the Moonshine Shop.

Table 3 Moonshine Shop Products

Product Name	Manufacturer	Boeing SDS Number	Estimated Annual Quantities
Isopropyl Alcohol	Univar	110790	20 L
Methyl Ethyl Ketone	Univar	120981	6 L
Acetone	Univar	121283	6 L
Accu-Lube (LB-2000)	Illinois Tool Works Inc.	153680	4 L
LPS Tapmatic Aquacut	Illinois Tool Works Inc.	85772	5 L
Boelube (Paste)	The Orelube Corporation	48555 and 15598	2 L

3. Description of the Proposed Development

3.1 Certificate of Title

DATE: 2003/04/29
TIME: 09:41
POST

MANITOBA
STATUS OF TITLE

TITLE NO: 1939669
PAGE: 1

STATUS OF TITLE..... ACCEPTED
ORIGINATING OFFICE..... WINNIPEG
REGISTERING OFFICE..... WINNIPEG
REGISTRATION DATE..... 2003/04/02
COMPLETION DATE..... 2003/04/08

PRODUCED FOR: FILLMORE RILEY
BY: V.CASTELLI
LTO BOX NO: 51

LEGAL DESCRIPTION:

REDWOOD PROPERTIES LTD.
IS REGISTERED OWNER SUBJECT TO SUCH ENTRIES
RECORDED HEREON, IN THE FOLLOWING DESCRIBED LAND:
LOT 7 PLAN 16753 WLTO
IN OTM LOTS 41 TO 43 PARISH OF ST JOHN

ACTIVE TITLE CHARGES:

2833176	WPG ACCEPTED	CAVEAT	REG'D: 2003/04/02
	DESCRIPTION:	LEASE AGREEMENT	
	FROM/BY:	GENERAL MOTORS OF CANADA LIMITED	
	TO:	DOUGLAS G. WARD AS AGENT	
	CONSIDERATION:		NOTES:
2833177	WPG ACCEPTED	MORTGAGE	REG'D: 2003/04/02
	FROM/BY:	REDWOOD PROPERTIES LTD.	
	TO:	CANADIAN WESTERN BANK	
	CONSIDERATION:	3500000.00	NOTES:
2833178	WPG ACCEPTED	CAVEAT	REG'D: 2003/04/02
	DESCRIPTION:	GENERAL ASSIGNMENT OF RENTS AND LEASES	
	FROM/BY:	CANADIAN WESTERN BANK	
	TO:	W. P. FILLMORE AS AGENT	
	CONSIDERATION:		NOTES:
2833179	WPG ACCEPTED	PERSONAL PROPERTY SECURITY NOTICE	REG'D: 2003/04/02
	DESCRIPTION:	SECURITY AGRT.NO.200306242708 EXPIRES ON 2010/04/01	
	FROM/BY:	CANADIAN WESTERN BANK	
	TO:	W. P. FILLMORE AS AGENT	
	CONSIDERATION:		NOTES:

ACCEPTED THIS 2ND DAY OF APRIL, 2003
BY G.SCOTT FOR THE DISTRICT REGISTRAR OF
THE LAND TITLES DISTRICT OF WINNIPEG.

CERTIFIED TRUE EXTRACT PRODUCED FROM THE LAND TITLES DATA
STORAGE SYSTEM ON 2003/04/29 OF TITLE NUMBER 1939669
THIS IS NOT A DUPLICATE TITLE.

X 
FOR THE DISTRICT REGISTRAR

***** END OF STATUS OF TITLE FOR TITLE 1939669 WPG *****

3.2 Mineral Rights

Not Applicable

3.3 Existing Land Use

The subject property located at 1345 Redwood Avenue in Winnipeg, Manitoba, Canada has a land area of 40063.87 sq m with a developed area of 10436.72 sq m. The commercial space is currently used for the assembly processes and spray painting of aircraft composite parts.

The property is located in a mixed residential/industrial area in the City of Winnipeg. The site is bounded by Redwood Avenue and farther to the south by a vacant lot owned by the City of Winnipeg, and Sisler High School. The school is located approximately 92 m from the facility. Adjacent land to the west and north of the site is developed for industrial use. The site is bounded to the east by Fife Street, with an apartment building, and commercial and industrial facilities located farther to the east of the site. The commercial and industrial facilities include an automotive repair facility, mechanical system contractor, welding, and machine shop. The nearest residential facilities are located approximately 200 m from the facility.

Figure 1 illustrates the location of the site.

Figure 1: Site Location¹



¹ City of Winnipeg Citizen's Information Service: <http://cms00asa1.winnipeg.ca/mapxtreme/servlet/cismap>

There is no surface water located on the property. The nearest significant surface water body is the Red River located approximately 3.5 kilometers to the southeast of the property.

3.4 Land Use Designation & Zoning Designation

The land use designation according to The City of Winnipeg Zoning By-law 6400/94 for 1345 Redwood Ave is MP-2 (Industrial Park) and falls under the Industrial District.

3.5 Previous Studies and Authorizations

Not Applicable

3.6 Planning

The detailed planning phase for relocating the Tooling Fabrication Shop to 1345 Redwood began on January 29th 2016 and is proposed to take 2 months. This phase consists of defining what equipment is to be relocated, what facilities are required, such as; air, water, electrical, and network drops and finalizing the overall shop layout to ensure it meets environmental, safety, fire protection and shop requirements.

The execution phase is planned to start on March 30th 2016. The first part of this phase will include the physical installation of electrical, water, network and air drops as identified in the planning phase. Once all of the facilities are in place, the equipment is planned to be relocated and installed over a two week period completing on May 10th 2016.

The future state vision for Boeing Canada Operations Ltd.'s facility located at 1345 Redwood also includes the Research & Development (R&D) Lab and Moonshine Shop. There are currently no detailed plans to move these operations over to this facility, however at a high level; the R&D Lab could be relocated in 2017 and the Moonshine Shop in 2018.

4. Potential Environmental and Human Health Effects of the Proposed Development

The following sections describe the potential impacts on the environment that might arise due to the proposed operations.

4.1 Impacts to Air Quality

The addition of the proposed operations to the existing processes at 1345 Redwood Avenue is not predicted to create any significant changes in the air quality of the immediate or surrounding areas.

4.1.1 Tooling Fabrication

The proposed Tooling operation will include a local exhaust ventilation system (fume booth) to capture any fumes from activities and applications that include, but are not limited to; wet fiberglass layup (including resin and hardeners), casting compounds, fillers, waxes, adhesives, paints, cleaning agents, and, mold release agents. The fume booth will be equipped with a tube axial in-line exhaust fan (14,000 CFM with a 3HP 48-v/60/3 TEFC motor) vented directly to the outdoors. The booth is also equipped with a polyester filter offering high arrestance and low resistance to further reduce impact to air quality.

The proposed Tooling operation will include three portable dust collectors designed to capture dust from the sanding of wood, aluminum, and steel using band saws, disc sanders, and surface grinders. Contents of the dust collectors will be disposed of as regular non-hazardous waste.

The proposed Tooling operation also includes a portable smoke extractor for welding activities. The extractor is equipped with a HEPA filter and a fan with a capacity of 1450 CFM free-blowing and 700 CFM at the hood of the extractor.

4.1.2 R&D Lab

The proposed R&D Lab will include a number of dust collectors and vacuum systems to capture any dust that may result from the machining of metal and/or composite parts. Contents of the dust collectors and vacuum systems will be disposed of as regular non-hazardous waste.

4.1.3 Moonshine

The proposed Moonshine operation will include a dust collector and a vacuum system to capture any dust that may result from the machining of metal and/or composite parts. Contents of the dust collectors and vacuum systems will be disposed of as regular non-hazardous waste.

4.2 Impacts to Water Quality

It is not predicted that there will be any effects on surface water or groundwater.

4.3 Impacts to Land

It is not predicted that there will be any effects on the wildlife, fisheries, forestry, or heritage resources being that the proposed operation is going to be established in an industrial zone.

In addition, it is not predicted that there will be any socio-economic effects considering that the operation is relatively small-scale.

5. Environmental Management Practice (Mitigation Measures)

The following sections describe mitigation measures that will be taken to minimize potential environmental impacts that might arise due to the proposed operations.

5.1 Air Quality Management

The following measures will be taken to minimize ambient air quality effects from the proposed operations

5.1.1 Tooling Fabrication

- i) Preventative maintenance will be performed on the fume booth. This will ensure that the booth is working at maximum efficiency. The booth will be inspected on a weekly basis to examine the condition of the booth and filters. The filters will be changed on a monthly basis. The operation of the exhaust fan will be inspected on a quarterly basis. All inspections and replacements will be recorded and tracked to provide self-audits on the system.
- ii) Dust collectors will be inspected annually to ensure that they are operating efficiently. The dust collectors are emptied on an as-need basis and the contents are disposed of as regular non-hazardous waste.
- iii) Preventative maintenance will be performed on the smoke extractor to ensure that it is working at maximum efficiency. The HEPA filters will be changed on a regular basis (as-needed) and the operation of the fan will be inspected annually.

5.1.2 R&D

- i) Dust collectors will be inspected annually to ensure that they are operating efficiently. The dust collectors are emptied on an as-needed basis and the contents are disposed of as regular non-hazardous waste.
- ii) Vacuums are inspected annually to ensure that they are operating efficiently. The contents of the vacuum collection bags are emptied on an as-needed basis and the collection bag and contents are disposed of as regular non-hazardous waste.

5.1.3 Moonshine

- i) Dust collectors will be inspected annually to ensure that they are operating efficiently. The dust collectors are emptied on an as-needed basis and the contents are disposed of as regular non-hazardous waste.
- ii) Vacuums are inspected annually to ensure that they are operating efficiently. The contents of the vacuum collection bags are emptied on an as-needed basis and the collection bag and contents are disposed of as regular non-hazardous waste.

5.2 Water Quality Management

The proposed R&D Lab includes a heated wash bath, known as a Support Cleaning Apparatus (SCA) that is used to remove support material from prototypes that are created using 3D printer and Soluble Support Technology (SST). The SCA contains water and small amounts of 9400 SC (Appendix C). The contents of the SCA are drained approximately every three months to maintain proper concentrations for removal of the support material. In order to prevent any non-compliance with the City of Winnipeg's Sewer Bylaw 92/2010, Boeing Canada Operations Ltd. had the waste material tested by ALS Labs (2015) and it was concluded that the material exceeds the limits for total phosphorous and suspended solids set forth in the bylaw. As a result, the wastewater material is collected and disposed of as non-regulated hazardous waste by an accredited Boeing Canada Operations Ltd. contractor (Miller Environmental Corporation).

Since there are no surface water bodies, the Tooling, R&D, and Moonshine operations will not have any effect on the surface water quality. In addition, the proposed operations will not involve any process water or liquid discharge that might affect the soil quality of the property or adjacent areas.

5.3 Soil Quality Management

The proposed operations will be conducted in the developed area, i.e., on the factory shop floor. Hence, the soil quality of the surrounding undeveloped areas will not be affected.

5.4 Storage of Hazardous Materials

All chemicals and hazardous materials will be stored in approved flame resistant cabinets as per the requirements of the federal and provincial laws and regulations, and Boeing procedures.

5.5 Hazardous Waste Management

The Boeing Canada Operations Ltd. facility at 1345 Redwood Ave is currently registered (Provincial ID No. MBG11564) under the Manitoba Regulation 175/87 (Generator Registration and Carrier Licencing Regulation).

The hazardous waste generated from the proposed operations will be disposed of by an accredited Boeing Canada Operations Ltd. contractor. At present, Miller Environmental Corporation is responsible for transporting and disposing of all hazardous waste streams generated from the two Boeing Canada Operations Ltd. Facilities, namely: 99 Murray Park Road and 1345 Redwood Avenue.

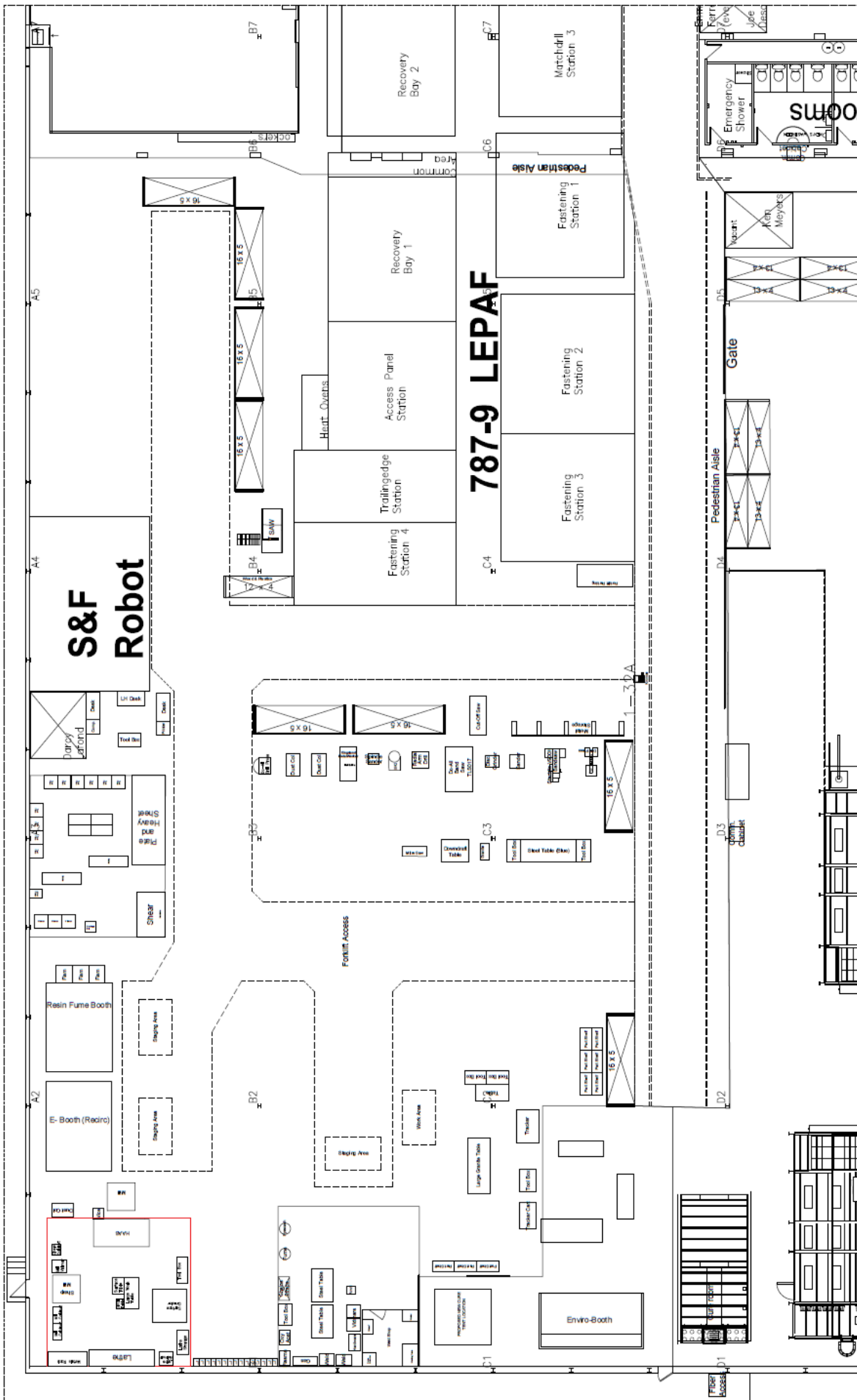
Currently, there are no plans for the decommissioning of the proposed operations. In all likelihood if this situation did arise, the proposed operations would be decommissioned in an environmental friendly manner.

5.6 Non-Hazardous Waste Management

All non-hazardous waste generated from the proposed operations will be recycled or disposed of by accredited Boeing Canada Operations contractors. At present, the following contractors are responsible for transporting and disposing of all non-hazardous waste streams generated from the two Boeing Canada Operations Ltd. Facilities, namely; 99 Murray Park Road and 1345 Redwood Avenue: Waste Management (landfill waste, plastics, cardboard, wood), and Orloff Metal Recycling (metals).

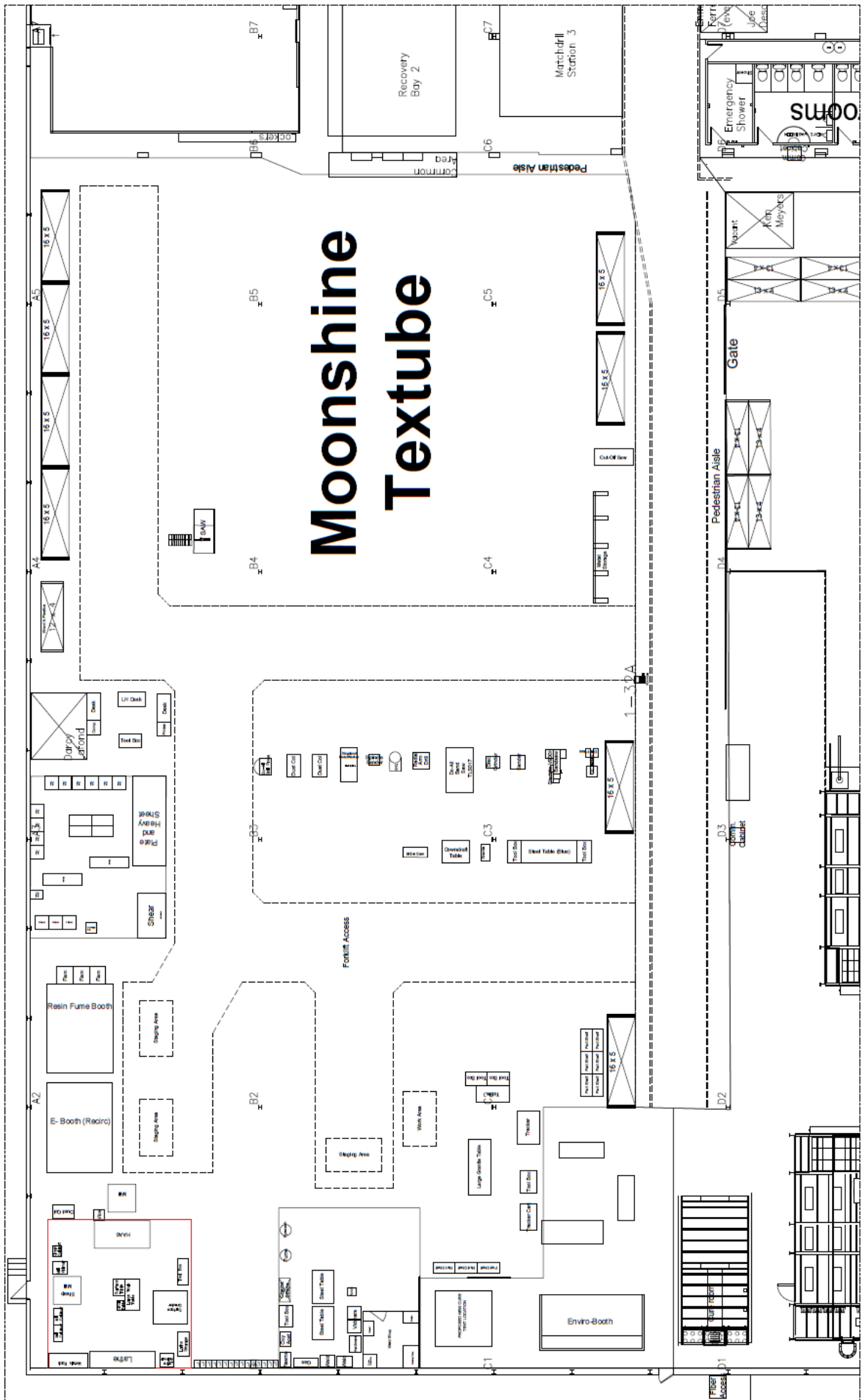
Appendix A

Near Term Drawing



Appendix B

Long Term Drawing



Appendix C
SDS: P400 SC



Safety Data Sheet
acc. to OSHA HCS

Page 1/8

Printing date 04/2/2013

Reviewed on 04/2/2013

1 Identification of the substance/mixture and of the company/undertaking


- **Product identifier**
- **Trade name:** *P400 SC*
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation** *Alkaline cleaner/ detergent*
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Stratasys, Inc.
7665 Commerce Way
Eden Prairie, MN 55344
USA



Tel +1 952 937 3000
Fax +1 952 937 0070
- **For information in Europe contact:**

C.S.B. GmbH
Düsseldorfer Straße 113
D-47809 Krefeld
Germany

Tel.: +49-2151-6520860
Fax: +49-2151-6520869
E-Mail: info@csb-online.de
- **Information department:** *Sales / Technics*
- **Emergency telephone number:** *see above*

2 Hazards identification

- **Classification of the substance or mixture**
-  **GHS05 Corrosion**

Skin Corr. 1A H314 Causes severe skin burns and eye damage.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
-  **Corrosive**
Causes severe burns.
- **Classification system:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Label elements**
- **GHS label elements**
The product is classified and labelled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**
-  **GHS05**
- **Signal word** *Danger*
- **Hazard-determining components of labelling:**
Sodium hydroxide
Sodiumsilicate, pentahydrate
- **Hazard statements**
H314 Causes severe skin burns and eye damage.
- **Precautionary statements**
P260 Do not breathe dust/fume/gas/mist/vapours/spray.

(Contd. on page 2)

USA


Safety Data Sheet
acc. to OSHA HCS

Printing date 04/2/2013

Reviewed on 04/2/2013

Trade name: P400 SC

(Contd. of page 1)

- P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 Immediately call a POISON CENTER or doctor/physician.
 P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
 P405 Store locked up.
 - Additional information: Void
 - Classification system
 - NFPA ratings (scale 0-4)



- HMIS

HEALTH	3	Health = 3
FIRE	0	Fire = 0
REACTIVITY	1	Reactivity = 1

- Other hazards
 - Results of PBT and vPvB assessment
 - PBT: Not applicable.
 - vPvB: Not applicable.

3 Composition/information on ingredients

- Chemical characterization: Mixtures
 - Description: Mixture of the substances listed below with nonhazardous additions.

- Dangerous components:

497-19-8	Sodium carbonate Xi R36 Eye Irrit. 2, H319	50-100%
1310-73-2	Sodium hydroxide C R35 Met. Corr. 1, H290; Skin Corr. 1A, H314	10-25%
151-21-3	sodium dodecyl sulphate Xn R21/22; Xi R36/38 Acute Tox. 3, H311; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319	< 2.5%
10213-79-3	Sodiumsilicate, pentahydrate C R34; Xi R37 Met. Corr. 1, H290; Skin Corr. 1B, H314; STOT SE 3, H335	< 2.5%

- Additional information For the wording of the listed risk phrases refer to section 16.

4 First aid measures

- Description of first aid measures
 - General information Immediately remove any clothing contaminated by the product.
 - After inhalation
 Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor.
 In case of unconsciousness place patient stably in side position for transportation.

(Contd. on page 3)

USA



Safety Data Sheet
acc. to OSHA HCS

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Trade name: P400 SC

(Contd. of page 2)

- **After skin contact**
Immediately rinse with water.
Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.
- **After eye contact**
Rinse opened eye for several minutes under running water.
Call a doctor immediately.
Protect unharmed eye.
Remove contact lenses, if present and easy to do.
- **After swallowing**
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
Do not induce vomiting - danger of perforation!
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents** None
- **Special hazards arising from the substance or mixture**
Sulphur oxides (SO_x)
Sodium oxide (Na₂O)
Carbon monoxide and carbon dioxide
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Avoid formation of dust.
Do not breathe dust.
Avoid contact with skin and eyes.
- **Environmental precautions:**
Do not allow to enter sewers/ surface or ground water.
Inform respective authorities in case product reaches water or sewage system.
- **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
- **Reference to other sections** See Section 8 for information on personal protection equipment.

7 Handling and storage

- **Precautions for safe handling**
Prevent formation of dust.
Any deposit of dust which cannot be avoided must be regularly removed.
Do not breathe dust.
Avoid skin and eye contact under any circumstances.
Make sure that all applicable workplace limits are observed.

(Contd. on page 4)

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*Safety Data Sheet
acc. to OSHA HCS*

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Trade name: P400 SC

(Contd. of page 3)

- *When diluting, always stir the product into standing water, not water to product.*
- *Information about protection against explosions and fires: No special measures required.*
- *Conditions for safe storage, including any incompatibilities*
- *Storage*
- *Requirements to be met by storerooms and receptacles:*
Observe all local and national regulations for storage of water polluting products.
- *Information about storage in one common storage facility: Do not store together with acids.*
- *Further information about storage conditions:*
Store receptacle in a well ventilated area.
Store in cool, dry conditions in well sealed receptacles.
Store under lock and key and out of the reach of children.
- *Specific end use(s) No further relevant information available.*

8 Exposure controls/personal protection

- *Additional information about design of technical systems: No further data; see item 7.*
- *Control parameters*

- *Components with limit values that require monitoring at the workplace:*

1310-73-2 Sodium hydroxide

PEL 2 mg/m³

REL Short-term value: C 2 mg/m³

TLV Short-term value: C 2 mg/m³

- *Additional information: The lists that were valid during the creation were used as basis.*
- *Exposure controls*
- *Personal protective equipment*
- *General protective and hygienic measures*
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Do not breathe dust.
Avoid contact with the eyes and skin.
Wash hands before breaks and at the end of work.
- *Breathing equipment:*
If all workplace limits are observed and good ventilation is ensured, no special precautions necessary.
- *Protection of hands:*
Alkaline resistant gloves
Check the permeability prior to each renewed use of the glove.
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.
- *Material of gloves*
Natural rubber, NR
PVC gloves
- *Penetration time of glove material*
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- *Eye protection: Tightly sealed goggles.*
- *Body protection: Alkaline resistant protective clothing*

USA
(Contd. on page 5)



Safety Data Sheet
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Printing date 04/2/2013

Reviewed on 04/2/2013

Trade name: P400 SC

(Contd. of page 4)

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form:	Granulate Beads
Color:	White
Odor:	odorless
Odor threshold:	no data available

pH-value: ~ 13 (soln.)

Change in condition

Melting point/Melting range: undetermined
Boiling point/Boiling range: Not applicable

Flash point: Not applicable

Flammability (solid, gaseous) Not applicable

Ignition temperature: Not applicable

Decomposition temperature: Not determined

Auto igniting: Product is not selfigniting.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

Lower: Not applicable

Upper: Not applicable

Oxidizing properties Not applicable

Vapor pressure: Not determined

Density: Not determined

Solubility in / Miscibility with

Water: soluble

Viscosity:

dynamic: Not applicable

kinematic: Not applicable

Other information No further relevant information available.

10 Stability and reactivity

Reactivity

Chemical stability

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Possibility of hazardous reactions

Strong exothermic reaction with acids

Reacts with metals forming hydrogen

Conditions to avoid No further relevant information available.

Incompatible materials:

Strong acids

base metals

Hazardous decomposition products:

Sulfur oxides (SO_x)

Sodium oxide (Na₂O)

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Carbon monoxide and carbon dioxide

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11 Toxicological information

- Information on toxicological effects

- Acute toxicity:

- LD/LC50 values that are relevant for classification:

497-19-8 Sodium carbonate

Oral	LD50	4090 mg/kg (rat)
Dermal	LD50	2000 mg/kg (rabbit)
Inhalative	LC50/1 h	2.3 mg/l (rat) (LC50/2h)

1310-73-2 Sodium hydroxide

Oral	LD50	2000 mg/kg (rat)
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- Primary irritant effect:

- on the skin: Strong corrosive effect on skin and mucous membranes.

- on the eye: Strong corrosive effect.

- Sensitization: No sensitizing effects known.

- Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Corrosive

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

- Carcinogenic categories

- IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

- NTP (National Toxicology Program)

None of the ingredients is listed.

12 Ecological information

- Toxicity

- Aquatic toxicity:

497-19-8 Sodium carbonate

EC50/48 h 256 mg/l (water flea (daphnia magna))

LC50/96 h 740 mg/l (gambusia affinis)

300 mg/l (Bluegill sunfish)

1310-73-2 Sodium hydroxide

EC50/48 h > 100 mg/l (water flea (daphnia magna))

LC50/48 h 133 - 189 mg/l (leuciscus idus)

LC50/96 h 99 mg/l (Bluegill sunfish)

45.4 mg/l (rainbow trout (oncorhynchus mykiss))

- Persistence and degradability No further relevant information available.

- Bioaccumulative potential No further relevant information available.

- Mobility in soil No further relevant information available.

- Additional ecological information:

- General notes: Water hazard class 1 (Self-assessment) (German regulation): slightly hazardous for water.

- Results of PBT and vPvB assessment

- PBT: Not applicable.

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- vPvB: Not applicable.
- Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
- Recommendation: Disposal must be made according to local/official regulations.
- Uncleaned packagings:
- Recommendation: Disposal must be made according to local/official regulations.
- Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number
- ADR, IMDG, IATA UN1823
- UN proper shipping name
- IMDG, IATA SODIUM HYDROXIDE, SOLID, MIXTURE
- ADR 1823 SODIUM HYDROXIDE, SOLID, MIXTURE

- Transport hazard class(es)
- DOT

- ADR



- Class 8 (C6) Corrosive substances
- Label 8

- IMDG, IATA



- Class 8 Corrosive substances.
- Label 8

- Packing group
- DOT, ADR, IMDG, IATA II

- Special precautions for user Warning: Corrosive substances
- Danger code (Kemler): 80
- EMS Number: F-A-S-B
- Segregation groups Alkali

- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable

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- UN "Model Regulation": UN1823, SODIUM HYDROXIDE, SOLID, MIXTURE, 8, II

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture

- SARA Section 355 (extremely hazardous substances)

None of the ingredients is listed.

- TSCA (Toxic Substances Control Act)

497-19-8 Sodium carbonate

1310-73-2 Sodium hydroxide

7757-82-6 Sodium sulphate

151-21-3 sodium dodecyl sulphate

68439-46-3 Alcohols, C9-11, ethoxylated

- Cancerogenity categories

- MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

- National regulations

- Information about limitation of use: Employment restrictions concerning young persons must be observed.

- Disturbance regulations: Directive 96/82/EC does not apply.

- Water hazard class:

Water hazard class 1 (Self-assessment) (German regulation): slightly hazardous for water.

- Other regulations, limitations and prohibitive regulations

Observe restrictions on the marketing and use according to Annex XVII of Regulation (EC) No 1907/2006.

- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

NFPA: National Fire Protection Association (USA)

HMS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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