

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

October 18, 2011

PERMIT TO INSTALL
329-82D

ISSUED TO
Thetford Corporation

LOCATED AT
7101 Jackson Road
Ann Arbor, Michigan

IN THE COUNTY OF
Washtenaw

STATE REGISTRATION NUMBER
B8847

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203:

October 10, 2011

DATE PERMIT TO INSTALL APPROVED:

October 18, 2011

SIGNATURE:

DATE PERMIT VOIDED:

SIGNATURE:

DATE PERMIT REVOKED:

SIGNATURE:

PERMIT TO INSTALL

Table of Contents

Section	Page
Alphabetical Listing of Common Abbreviations / Acronyms	2
General Conditions	3
Special Conditions	5
Emission Unit Summary Table.....	5
Flexible Group Summary Table	6
Special Conditions for FGMTSTORETKS	7
Special Conditions for FGPROCESSTANKS	8
Special Conditions for FGHTDEODOR	10
Special Conditions for FGFACILITY	12

Common Abbreviations / Acronyms

Common Acronyms		Pollutant/Measurement Abbreviations	
AQD	Air Quality Division	BTU	British Thermal Unit
ANSI	American National Standards Institute	°C	Degrees Celsius
BACT	Best Available Control Technology	CO	Carbon Monoxide
CAA	Clean Air Act	dscf	Dry standard cubic foot
CEM	Continuous Emission Monitoring	dscm	Dry standard cubic meter
CFR	Code of Federal Regulations	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H ₂ S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	NO _x	Oxides of Nitrogen
MDEQ	Michigan Department of Environmental Quality (Department)	PM	Particulate Matter
MIOSHA	Michigan Occupational Safety & Health Administration	PM10	PM less than or equal to 10 microns diameter
MSDS	Material Safety Data Sheet	PM2.5	PM less than or equal 2.5 microns diameter
NESHAP	National Emission Standard for Hazardous Air Pollutants	pph	Pound per hour
NSPS	New Source Performance Standards	ppm	Parts per million
NSR	New Source Review	ppmv	Parts per million by volume
PS	Performance Specification	ppmw	Parts per million by weight
PSD	Prevention of Significant Deterioration	psia	Pounds per square inch absolute
PTE	Permanent Total Enclosure	psig	Pounds per square inch gauge
PTI	Permit to Install	scf	Standard cubic feet
RACT	Reasonably Available Control Technology	sec	Seconds
ROP	Renewable Operating Permit	SO ₂	Sulfur Dioxide
SC	Special Condition	THC	Total Hydrocarbons
SCR	Selective Catalytic Reduction	tpy	Tons per year
SRN	State Registration Number	µg	Microgram
TAC	Toxic Air Contaminant	VOC	Volatile Organic Compounds
TEQ	Toxicity Equivalence Quotient	yr	Year
VE	Visible Emissions		

* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
 - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
 - b) A visible emission limit specified by an applicable federal new source performance standard.
 - c) A visible emission limit specified as a condition of this Permit to Install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Flexible Group ID
EU0100TK01	7,350 gallon raw material storage tank.	FGMTSTORETKS FGFACILITY
EU0101TK01	7,350 gallon raw material storage tank.	FGMTSTORETKS FGFACILITY
EU0102TK01	7,350 gallon raw material storage tank.	FGMTSTORETKS FGFACILITY
EU0200MT01	925 gallon blend tank used for manufacture of non-formaldehyde (glutaraldehyde and bronopol) based toilet deodorants.	FGPROCESSTANKS FGFACILITY
EU0300MT01	1,940 gallon blend tank used for manufacture of formaldehyde based toilet deodorants.	FGPROCESSTANKS FGFACILITY
EU0400MT01	1,940 gallon blend tank used for manufacture of formaldehyde based toilet deodorants.	FGPROCESSTANKS FGFACILITY
EU0200MT02	80 gallon slurry tank used to mix various perfumes, dyes, and additives.	FGMTSTORETKS FGFACILITY
EU0300MT02	120 gallon slurry tank used to mix various perfumes, dyes, and additives.	FGMTSTORETKS FGFACILITY
EU0400MT02	120 gallon slurry tank used to mix various perfumes, dyes, and additives.	FGMTSTORETKS FGFACILITY
EU0200TK01	2,160 gallon storage reservoir for supplying blended materials to product-filling processes.	FGMTSTORETKS FGFACILITY
EU0300TK01	2,160 gallon storage reservoir for supplying blended materials to product-filling processes.	FGMTSTORETKS FGFACILITY
EU0400TK01	2,160 gallon storage reservoir for supplying blended materials to product-filling processes.	FGMTSTORETKS FGFACILITY
EU0900TK01	2,160 gallon storage reservoir for supplying blended materials to product-filling processes.	FGMTSTORETKS FGFACILITY
EU0951TK01	120 gallon reservoir that supply the automatic filling lines.	FGPROCESSTANKS FGFACILITY
EU0953TK01	120 gallon reservoir that supply the automatic filling lines.	FGPROCESSTANKS FGFACILITY
EUWT1	1,500 gallon process wastewater tank.	FGPROCESSTANKS FGFACILITY
EUWT2	1,500 gallon process wastewater tank.	FGPROCESSTANKS FGFACILITY
EUSTORAGETANKT3	6,400 gallon storage tank used for containment purposes to store formaldehyde in emergency situations.	FGFACILITY
EUVBLEND	V-blender for blending dry materials for manufacturing sanitation holding tank deodorants. Emissions are controlled by a cartridge dust collector.	FGHTDEODOR FGFACILITY

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Flexible Group ID
EUFILL1	Form fill and seal machine for filling foil and/or water soluble packets with dry mixtures of sanitation holding tank deodorants. Emissions are controlled by a cartridge dust collector.	FGHTDEODOR FGFACILITY
EUFILL2	Form fill and seal machine for filling foil and/or water soluble packets of dry mixtures of sanitation holding tank deodorants. Emissions are controlled by a cartridge dust collector.	FGHTDEODOR FGFACILITY
EUHANDFILL1	Hand fill and capping station for bottles containing salt and enzyme formulations of sanitation holding tank deodorants. Emissions are controlled by a cartridge dust collector.	FGHTDEODOR FGFACILITY
EUHANDFILL2	Hand fill, capping, and induction sealing station for liquid filled bottles of sanitation holding tank deodorants.	FGFACILITY
Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.		

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGMTSTORETKS	Raw material, product, and wastewater storage tanks.	EU0100TK01, EU0101TK01, EU0102TK01, EU0200MT02, EU0300MT02, EU0400MT02, EU0200TK01, EU0300TK01, EU0400TK01, EU0900TK01
FGPROCESSTANKS	Liquid product processing tanks.	EU0200MT01, EU0300MT01, EU0400MT01, EU0951TK01, EU0953TK01, EUWT1, EUWT2
FGHTDEODOR	Equipment for manufacturing sanitation holding tank deodorants. Emissions are controlled by a cartridge dust collector.	EUVBLEND, EUFILL1, EUFILL2, EUHANDFILL1
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.	EU0100TK01, EU0101TK01, EU0102TK01, EU0200MT01, EU0300MT01, EU0400MT01, EU0200MT02, EU0300MT02, EU0400MT02, EU0200TK01, EU0300TK01, EU0400TK01, EU0900TK01, EU0951TK01, EU0953TK01, EUWT1, EUWT2, EUSTORAGETANKT3, EUVBLEND, EUFILL1, EUFILL2, EUHANDFILL1, EUHANDFILL2

The following conditions apply to: FGMTSTORETKS

DESCRIPTION: Raw material, product, and wastewater storage tanks.

Emission Units: EU0100TK01, EU0101TK01, EU0102TK01, EU0200MT02, EU0300MT02, EU0400MT02, EU0200TK01, EU0300TK01, EU0400TK01, and EU0900TK01

POLLUTION CONTROL EQUIPMENT: Conservation vents

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall equip and maintain each FGMTSTORETKS tank with conservation vents. (R 336.1225, R 336.1702(a))

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

NA

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

The following conditions apply to: FGPROCESSTANKS

DESCRIPTION: Liquid product processing tanks.

Emission Units: EU0200MT01, EU0300MT01, EU0400MT01, EU0951TK01, EU0953TK01, EUWT1, and EUWT2

POLLUTION CONTROL EQUIPMENT: Wet scrubber

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Formaldehyde	0.8 tpy	12-month rolling time period as determined at the end of each calendar month	FGPROCESSTANKS	SC VI.1, VI.2, VI.3, VI.4	R 336.1225, R 336.1702(a)
2. Formaldehyde	0.62 pph	Test protocol*	FGPROCESSTANKS	GC 13, SC VI.1, VI.2, VI.3	R 336.1225, R 336.1702(a)
3. Glutaraldehyde	0.65 tpy	12-month rolling time period as determined at the end of each calendar month	FGPROCESSTANKS	SC VI.1, VI.2, VI.3, VI.4	R 336.1225, R 336.1702(a)
4. Glutaraldehyde	0.50 pph	Test protocol*	FGPROCESSTANKS	GC 13, SC VI.1, VI.2, VI.3	R 336.1225, R 336.1702(a)
5. Bronopol	1.8 tpy	12-month rolling time period as determined at the end of each calendar month	FGPROCESSTANKS	SC VI.1, VI.2, VI.3, VI.4	R 336.1225, R 336.1702(a)
6. Bronopol	1.4 pph	Test protocol*	FGPROCESSTANKS	GC 13, SC VI.1, VI.2, VI.3	R 336.1225, R 336.1702(a)
7. Methanol	3.38 tpy	12-month rolling time period as determined at the end of each calendar month	FGPROCESSTANKS	SC VI.1, VI.2, VI.3, VI.4	R 336.1225, R 336.1702(a)

* Test protocol shall specify averaging time

II. MATERIAL LIMITS

- The amount of isopropyl alcohol used in FGPROCESSTANKS shall not exceed 2,500 pounds per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1225, R 336.1702(a))**

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

- The permittee shall not operate EU0200MT01, EU0300MT01, EU0400MT01, EU0951TK01, EU0953TK01, EUWT1, or EUWT2 unless the Tri-mer Model F/S-8 fume scrubber is installed, maintained, and operated in a satisfactory manner. Satisfactory operation means maintaining a minimum scrubbing water flow rate of 3.0 gallons per minute. **(R 336.1225, R 336.1702(a), R 336.1910)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor the Tri-mer Model F/S-8 fume scrubber scrubbing water flow rate on a continuous basis. **(R 336.1225, R 336.1702(a), R 336.1910)**
2. The permittee shall keep, in a satisfactory manner, records of the tanks used and types and amounts of raw materials used in FGPROCESSTANKS on a per batch basis. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1225, R 336.1702(a))**
3. The permittee shall keep, in a satisfactory manner, daily records of the Tri-mer Model F/S-8 fume scrubber scrubbing water flow rate. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1225, R 336.1702(a), R 336.1910)**
4. The permittee shall keep, in a satisfactory manner, calculations of the formaldehyde, glutaraldehyde, bronopol, and methanol emissions from FGPROCESSTANKS for each month and 12-month rolling time period as determined at the end of each calendar month. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1225, R 336.1702(a))**

VII. REPORTING

NA)

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVWETSCRUBBER	30	33	R 336.1225

IX. OTHER REQUIREMENTS

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

The following conditions apply to: FGHTDEODOR

DESCRIPTION: Equipment for manufacturing sanitation holding tank deodorants.

Emission Units: EUVBLEND, EUFILL1, EUFILL2, EUHANDFILL1

POLLUTION CONTROL EQUIPMENT: Cartridge dust collector

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. PM	0.69 pph	Test protocol*	FGHTDEODOR	GC 13, SC VI.1, VI.3	R 336.1225
2. PM	0.02 lb per 1,000 lb of exhaust gas	Test protocol*	FGHTDEODOR	GC 13, SC VI.1, VI.2, VI.3	R 336.1331
3. Formaldehyde	0.69 tpy	12-month rolling time period as determined at the end of each calendar month	FGPROCESSTANKS	GC 13, SC VI.2, VI.4	R 336.1225, R 336.1702(a)

* Test protocol shall specify averaging time

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

- The permittee shall store paraformaldehyde in storage bags containing a vapor barrier. The paraformaldehyde storage bags shall remain closed except as necessary to load EUVBLEND. EUVBLEND shall remain closed while processing paraformaldehyde except as needed for ingredient addition and product removal. Finished product containing paraformaldehyde shall be stored in sealed containers. **(R 336.1225, R 336.1702(a))**

IV. DESIGN/EQUIPMENT PARAMETERS

- The permittee shall not operate FGHTDEODOR unless the dust collector is installed, maintained, and operated in a satisfactory manner. Satisfactory operation includes maintaining the dust collector pressure drop according to the manufacturer's specifications. **(R 336.1225, R 336.1331, R 336.1910)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor the dust collector pressure drop on a continuous basis. **(R 336.1225, R 336.1331, R 336.1910)**
2. The permittee shall keep, in a satisfactory manner, records of the types and amounts of raw materials used in FGHTDEODOR on a per batch basis. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1225, R 336.1702(a))**
3. The permittee shall keep, in a satisfactory manner, daily records of the dust collector pressure drop. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1225, R 336.1331, R 336.1910)**
4. The permittee shall keep, in a satisfactory manner, calculations of the formaldehyde emissions from FGHTDEODOR for each month and 12-month rolling time period as determined at the end of each calendar month. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1225, R 336.1702(a))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVDUSTCOLLECT1	15	33	R 336.1225

IX. OTHER REQUIREMENTS

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

The following conditions apply Source-Wide to: FG FACILITY

POLLUTION CONTROL EQUIPMENT: Wet scrubber, cartridge dust collector

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not blend deodorant products containing formaldehyde or glutaraldehyde in any vessels other than those in FGPROCESSTANKS. **(R 336.1225, R 336.1702(a))**
2. The permittee shall not blend deodorant products containing bronopol in any vessels other than those in FGPROCESSTANKS and FGHTDEODOR. **(R 336.1225)**

IV. DESIGN/EQUIPMENT PARAMETERS

1. NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall keep, in a satisfactory manner, records of the tanks used and types and amounts of raw materials used in FG FACILITY on a per batch basis. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1225, R 336.1702(a))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).