

**DEPARTMENT OF NATURAL RESOURCES****MISSOURI AIR CONSERVATION COMMISSION****PERMIT TO CONSTRUCT**

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 022009 - 002 Project Number: 2008-10-002

Parent Company: Esselte Corporation

Parent Company Address: 48 South Service Rd. STE 400, Melville, NY 11747

Installation Name: Esselte Corporation

Installation Address: 850 West Park Road, Union, MO 63084

Location Information: Franklin County, S43N, T21, R1W

Application for Authority to Construct was made for the installation of new tinting press that includes a natural gas oven and a new in line tinting press. This review was conducted in accordance with Section 5, Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.



Standard Conditions (on reverse) are applicable to this permit.



Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

FEB - 4 2009

EFFECTIVE DATE

  
DIRECTOR OR DESIGNEE  
DEPARTMENT OF NATURAL RESOURCES

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years/18 months from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years/18 months after the effective date of this permit, or if construction or modification is suspended for one year or more.

**You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review.** In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

Page No.	3
Permit No.	
Project No.	2008-10-002

## SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

Esselte Corporation  
Franklin County, S43N, T21, R1W

1. Emission Limitation:
  - A. Esselte Corporation shall emit less than ten (10) tons of glycol ether from installation in any consecutive 12-month period.
  - B. Attachment A or equivalent forms approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 1(A). Esselte Corporation shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all materials used in this equipment.
  - C. Esselte Corporation shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after the end of the month during which the records from Special Condition Number 1(B) indicate that the source exceeds the limitation of Special Conditions Number 1(A).
2. Operating Conditions:
  - A. Esselte Corporation shall keep the inks and extenders in sealed containers whenever the materials are not in use. Esselte Corporation shall provide and maintain suitable, easily read, permanent markings on all inks, solvent and cleaning solution containers used with these equipment
  - B. Esselte Corporation shall place the cleaning cloths/rags that are used on these equipment in sealed containers when not in use and while awaiting off-site transport.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (5) REVIEW

Project Number: 2008-10-002  
Installation ID Number: 071-0140  
Permit Number:

Esselte Corporation  
850 West Park Road  
Union, MO 63084

Complete: October 10, 2008  
Reviewed: December 19, 2008

Parent Company:  
Esselte Corporation  
48 South Service Rd. STE 400  
Melville, NY 11747

Franklin County, S43N, T21, R1W

REVIEW SUMMARY

- Esselte Corporation has applied for authority to construct tinting press that includes a natural gas oven, new in line tinting press.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. HAPs of concern from this process are Glycol Ethers (CAS # 20-10-0), Methyl Isobutyl Ketone (MIBK) (CAS # 108-10-1), diethylene glycol monoethyl ether, ethylene glycol, styrene monomer and acrylic acid.
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment. 40 CFR Part 60 Subpart QQ, *Standards of Performance for the Graphic Arts Industry: Publication Rotogravure Printing*, does not apply since the presses in this installation do not fall under the definition of publication rotogravure printing press as described in this rule.
- The recordkeeping requirements of Subpart KK, *National Emission Standards for Hazardous Air Pollutants -Printing and Publishing*, of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) regulations apply to this installation.
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOC are below de minimis levels and HAPs are conditioned to below de minimis levels.
- This installation is located in Franklin County, a nonattainment area for ozone (O<sub>3</sub>) and an attainment area for all other criteria air pollutants.

- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].
- Ambient air quality modeling was performed on glycol ether since potential emissions are above threshold levels. Ambient air quality modeling was not performed for VOCs. No model is currently available which can accurately predict ambient ozone concentrations caused by this installation's VOC emissions.
- Emissions testing is not required for the equipment.
- Revision to the Basic Operating Permit application is required for this installation within 30 days of issuance of this permit.
- Approval of this permit is recommended with special conditions.

### INSTALLATION DESCRIPTION

Esselte Corporation is an existing flexographic printing installation in Union, Missouri, located in Franklin County. The installation has been in operation at this location since 1978. The principal activities are manufacture and distribution of file folders, index cards and ring binders. The major processes needed to support manufacturing are flexographic paper tinting, laminating, steel stamping, PVC and paper die cutting, folding, gluing, assembly and packaging. The following processes generate air emissions – flexographic water-based paper tinting, polyethylene bag film sealing, new tinting press that includes a natural gas oven and a new in line tinting press .

The following permits have been issued to Esselte Corporation from the Air Pollution Control Program.

Permit Number	Description
092003-003	Section 6 construction permit
2005-11-016	Basic operating permit

### PROJECT DESCRIPTION

Esselte Corporation has applied for authority to construct a new tinting press that includes a natural gas oven and a new in line tinting press. In general the mixtures for the tinting press remains between 75 to 80 % ink and 20 to 25% extender, the tinting press is capable of running 700 feet of paper per minute. The largest roll of paper that absorbs the most ink is 43 7/8 in and 2200 feet long. It takes 200 lbs to coat the rolls if they are tinted on both sides. It can run approximately 2 rolls in 1 hours.

75% ink pigment: 300 lbs. / 9.4 lbs per gallon = 31.9 gallon ink per hour.  
 25% extender: 100 lbs. / 8.46 lbs per gallon = 11.8 gallon extender per hour.  
 A total of 43.7 gal per hour.

80% ink pigment; 320 lbs / 9.4 lbs per gallon = 34 gallon ink per hour.  
 20% extender: 80 lbs / 8.46 lbs per gallon = 9.5 gallon ink per hour.  
 A total of 43.5 gallon per hour.

Calculations are based upon 80% ink pigment and 20 % extender because it reflects the worse case scenario of emitting glycol ethers, and diethylene glycol monoethyl Ether.

The in line tinting press is estimated to run about 6 gallon of ink per hour (rounded up to the nearest gal.) and the mixture is about 50% ink pigment and 50% extender.

### EMISSIONS/CONTROLS EVALUATION

Emission calculations for VOCs and HAPs were based on a mass balance approach. The proportions of ink and extender utilized in each piece of equipment are known. All VOC and HAP present in the inks and extenders is assumed to be emissions. No control devices are used on any of the proposed equipment. Potential emissions of the application represent the potential of the equipment, assuming continuous operation (8760 hours per year). The only HAP that has the potential to exceed ten (10) tons per year of emissions is glycol ether. The applicant has requested a limit of less than 10 tons/year of glycol ether and has agreed to keep records documenting their compliance with that limit. Existing actual emissions are taken from the installation's 2007 Emissions Inventory Questionnaire submission. The following table provides an emissions summary for this project.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2007 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM <sub>10</sub>	15.0	0.10	0.04	0.01	N/A
SO <sub>x</sub>	40.0	0.01	N/A	0.00	N/A
NO <sub>x</sub>	40.0	1.31	0.5	0.09	N/A
VOC	40.0	49.4	1.8	21.0078	N/A
CO	100.0	1.10	0.4	0.08	N/A
HAPs	10.0/25.0	14.94	N/A	19.8792	N/A
Glycol Ether	10.0	<10	N/A	11.4272	<10.0
Diethylene Glycol Monoethyl Ether	10.0	N/A	N/A	7.9432	N/A
Methyl Isobutyl Ketone	10.0	N/A	N/A	0.3533	N/A
Styren Monomer	10.0	N/A	N/A	0.0470	N/A
Acrylic Acid	10.0	N/A	N/A	0.0112	N/A
Ethylene Glycol	10.0	N/A	N/A	0.0974	N/A

N/A = Not Applicable; N/D = Not Determined

## PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section 5 of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of glycol ether are conditioned to below major source levels.

## APPLICABLE REQUIREMENTS

Esselte Corporation shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. Since the potential to emit for VOCs was determined to be less than 100 tons/year, 10 CSR 10-5.340, *Control of Emissions from Rotogravure and Flexographic Printing Facilities*, does not apply. For a complete list of applicable requirements for your installation, please consult your operating permit.

### GENERAL REQUIREMENTS.

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110  
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-3.090

### SPECIFIC REQUIREMENTS

- *Maximum Achievable Control Technology (MACT) Regulations*, 10 CSR 10-6.075, *National Emission Standards for Printing and Publishing*, 40 CFR Part 63, Subpart KK.
- *Maximum Allowable Emission of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating*, 10 CSR 10-5.030

## AMBIENT AIR QUALITY IMPACT ANALYSIS

The calculated potential emission of glycol ether is greater than its Screen Modeling Action Level (SMAL), which is five (5) tons per year. Therefore, ambient air quality modeling was performed using SCREEN3 to determine the ambient impact of glycol ether. The following table gives the projected concentrations of glycol ether using the SCREEN3 modeling program. The results from the refined modeling demonstrate compliance with the Risk Assessment Level (RAL).

Table 2: Modeled impact using SCREEN3 modeling

Pollutant	Modeled Impact	RAL	Time Period
Glycol ether	3284.8 $\mu\text{g}/\text{m}^3$	4,500 $\mu\text{g}/\text{m}^3$	24-hour

### STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

---

Samer Al-Shoukhi  
Environmental Engineer

---

Date

### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated September 29, 2008, received September 30, 2008, designating Esselte Corporation as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Saint Louis Regional Office Site Survey, dated October 03, 2008
- Material Safety Data Sheets (MSDS) submitted by the applicant.

