



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: **042012-006** Project Number: 2012-03-085
Installation Number: 031-0072

Parent Company: Nordenia International AG.

Parent Company Address: Airport Center am FMO, Greven Germany, 48268

Installation Name: Nordenia U.S.A., Inc.

Installation Address: 14591 State Highway 177, Jackson, MO 63755

Location Information: Cape Girardeau County, S5, T32N, R14E

Application for Authority to Construct was made for:

Construction of a new polyethylene bag manufacturing facility, Nordenia #2 in Jackson, Missouri, located in Cape Girardeau County. This operation will debottleneck some of the existing facility, Nordenia #1 emission points. 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.

APR 13 2012

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 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 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 Department's Air Pollution Control Program of the anticipated date of startup of these air contaminant sources. The information must be made available within 30 days of actual startup. 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 startup of these air contaminant sources.

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 sources(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.

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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."

Nordenia U.S.A., Inc.
Cape Girardeau County, S5, T32N, R14E

1. VOC Emission Limitation

- A. Nordenia U.S.A. shall emit less than 245.0 tons of Volatile Organic Compounds (VOCs) from *Nordenia #1* in any consecutive 12-month period. For the purpose of this special condition, *Nordenia #1* shall mean all source operations including activities that result in fugitive emissions located at Nordenia, U.S.A., Inc.'s 14591 State Highway 177 (Nordenia #1) property. The Nordenia #1 facility includes the emission points and/or emission units listed below:

Table 1: Emission Points and/or Emission Units

EQ Reference	Emission Point/Emission Unit Description
ATM 1	10,000 gallon storage tank (N-propyl acetate)
ATM 2	10,000 gallon storage tank (solvent blend)
ATM 4	Roto Presses 2201, 2202, 2203. Windmoller Holscher rotogravure printing presses. Presses 2201 and 2202 are 7-deck presses. Press 2203 is an 8-deck press. Emissions routed to thermal oxidizer(s).
ATM 5	Ink mixing and storage, 275 gallon tote containers
ATM 7	Boiler, 9.96 MMBTU/hr propane
ATM 9	PRI distillation units (2). Emissions included with ATM-27.
ATM 13	PRI dirty solvent tanks. One 500 gallon tank and one 1,000 gallon tank. Emissions included with ATM-27.
ATM 15	PRI clean solvent tanks. Two 500 gallon tanks and one 1,000 gallon tank. Emissions included with ATM-27.
ATM 17	Cylinder preparation - degreasing, toluene & methanol
ATM 18	Cylinder preparation - nickel plating

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SPECIAL CONDITIONS:

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

EIQ Reference	Emission Point/Emission Unit Description
ATM 19	Cylinder preparation - copper plating
ATM 20	Cylinder preparation – chrome plating
ATM 21	Cylinder preparation – de-chrome
ATM 22	Emergency diesel water pumps (2)
ATM 23	Corona treater ozone exhaust
ATM 24	Polyethylene Pellet Silos (16)
ATM 25	Blown film extrusion lines (6)
ATM 26	Bag machines that heat seal polyethylene film (6)
ATM 27	PRI Parts Washing System (incorporating ATM 9, ATM 13 and ATM 15)
ATM 28	Rotopress 2204. Windmoller Holscher 1.7 meter rotogravure printing press. Emissions routed to thermal oxidizers.
ATM 29	Laminator 2253. 1.7 meter width (Nordmeccanica)
ATM 31	Rotopress 2205. Shaanxi Bieren 2 meter rotogravure printing press. Emissions routed to thermal oxidizer(s).
ATM 32	10,000 gallon storage tank (ethyl acetate) Installed in 2007
ATM 33	10,000 gallon storage tank (ink and solvent) Installed in 2007
ATM 34	Boiler, 3.3 MMBTU/hr propane
ATM 35	Misc. Propane Usage Emissions

- B. Attachment A from Operating Permit OP2010-089, or an equivalent form that was approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 1(A). Nordenia U.S.A. 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) and purchasing/inventory records sufficient to substantiate VOC usage figures for all materials used in the equipment in this permit.
- C. Nordenia U.S.A., Inc. shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, Missouri 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 Condition Number 1(A).

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SPECIAL CONDITIONS:

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

2. Record Keeping and Reporting Requirements
 - A. Nordenia U.S.A., Inc. shall maintain all records required by this permit for not less than five 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.
 - B. Nordenia shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

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

Project Number: 2012-03-085
Installation ID Number: 031-0072
Permit Number:

Nordenia U.S.A., Inc.
14591 State Highway 177
Jackson, MO 63755

Complete: March 27, 2012

Parent Company:
Nordenia International AG.
Airport Center am FMO
Greven Germany, 48268

Cape Girardeau County, S5, T32N, R14E

REVIEW SUMMARY

- Nordenia U.S.A., Inc. has applied for authority to construct a new polyethylene bag manufacturing facility. Nordenia #2 in Jackson, Missouri, located in Cape Girardeau County. This operation will debottleneck some of the existing facility, Nordenia #1 emission points.
- Hazardous Air Pollutant (HAP) emissions are expected from the increased production from existing equipment due to debottlenecking. HAPs of concern from the chromium electroplating are Chromium VI; from the nickel plating are nickel compounds; from the cylinder prep-degreasing are methanol and toluene; from the blown film extrusion are formaldehyde, acrolein, acetaldehyde, propionaldehyde, and acrylic acid; and from the two boilers and two thermal oxidizers various HAPs from propane combustion.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) in 40 CFR Part 61 applies to this installation.
- The Maximum Achievable Control Technology (MACT) regulation 40 CFR Part 63 Subpart N-*National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks* applies to the hard chromium electroplating tank, ATM-20 (Cylinder Preparation – Chrome Plating).
- The MACT standard, 40 CFR Part 63, Subpart W-*National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations*, applies to the non-chromium (nickel) electroplating and electroless plating tanks, ATM-18 (Cylinder Preparation-Nickel Plating).

- The MACT standard, 40 CFR Part 63, Subpart PPPP *National Emission Standards for Hazardous Air Pollutants for Surface Coating of Plastic Parts and Products*, does not apply because the installation is not a major source of HAPs.
- The MACT standard, 40 CFR Part 63, Subpart KK, *National Emission Standards for the Printing and Publishing Industry*, does not apply because the installation is not a major source of HAPs.
- Mist eliminators are being used to control PM and HAP emissions from cylinder preparation (ATM-18 and ATM-20) in this permit. Existing regenerative thermal oxidizers (RTOs) are being used to control VOC emissions from the affected roto presses and a solvent laminator. The use of these controls have been required in other permits.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, Construction Permits Required. Potential emissions of all pollutants are below de minimis levels.
- This installation is located in Cape Girardeau County, an attainment area for all criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels and SMALs.
- A modification to Nordenia #1's Part 70 Operating Permit is required for this installation within one year of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Nordenia operates a rotogravure printing operation and a polyethylene bag manufacturing facility at 14591 State Highway 177 in Jackson, Missouri (Nordenia #1). At this facility, Nordenia currently manufactures items including polyethylene film, bags and flexible packaging. Nordenia received a Part 70 Operating Permit (Permit No. OP2010-089) which expires in August of 2015.

Nordenia #1 (031-0072) and Nordenia #2 (031-0132) are considered one installation for permitting purposes.

Nordenia #1 has taken a 245 tpy VOC limit for their facility. Nordenia #2's VOC potential to emit is less than 5 tpy of VOC, therefore the PTE of the installation is less than 250 tpy and remains a minor facility with regards to New Source Review permitting.

The following permits have been issued to Nordenia U.S.A., Inc. from the Air Pollution Control Program. All previous permits apply to Nordenia #1.

Table 2: Permit History

Permit Number	Description
0690-015*	Polyethylene sheeting extrusion process
1289-003*	Polyethylene laminate and print process
1293-014*	Solvent washing machine
0794-013*	Rotogravure printing press and wicket bag machine
0795-010*	Waste solvent reclamation unit
102000-026	Rotogravure printing press
042006-005	Laminator
042006-005A	Laminator colors amendment
052008-002	Rotogravure printing press

*These permits were issued to M & W Packaging U.S. Inc.

PROJECT DESCRIPTION

Nordenia has requested that a separate permit be issued for each facility: Nordenia #1 (031-0072) and Nordenia #2 (031-0132). The permit for Nordenia #2 is being issued under Project No. 2011-11-030.

The existing Nordenia plant is operating at capacity and intends to expand to meet additional demand for its products. Therefore, Nordenia intends to move the existing bag making portion of their operations from Nordenia #1 to a second plant, at 3151 N. High Street, Jackson, MO (Nordenia #2), to accommodate the additional demand. The existing facility (Nordenia #1) will retain plastic extrusion and printing portions of the process with other equipment unrelated to this project. The plastic extrusion and printing process will be debottlenecked by the new equipment being added under this project.

This permit modifies the VOC installation-wide limitation from the previous construction permit, Permit No. 052008-002 to allow the limit to be portioned out between Nordenia #1 and Nordenia #2. Testing on the thermal oxidizer should have been completed at that time and no further testing is required by this project. But as stated in the Special Condition 4.B of Permit No. 052008-002, this test must be repeated at least once every five (5) years.

The following control devices, as required by Permit No. 052008-002 are used at Nordenia #1 and the associated control efficiencies were taken into account in the net emissions increase calculations. Although there is a small sock filter on the copper engraving (ATM 30), the emissions for this unit were calculated as uncontrolled. This sock filter is not listed as a control device at Nordenia #1 and is not federally enforceable.

Table 3: Control Devices at Nordenia #1 14591 State Highway 177

Emission Units	Control Devices	Pollutant Controlled
ATM 4-1 (Roto Press 2201)	Regenerative Thermal Oxidizers CD-05 & CD-06	VOC
ATM 4-2 (Roto Press 2202)	Regenerative Thermal Oxidizers CD-05 & CD-06	VOC
ATM 4-3 (Roto Press 2203)	Regenerative Thermal Oxidizers CD-05 & CD-06	VOC
ATM-18 (Cylinder Preparation - Nickel Plating)	Mist Eliminator	PM/Nickel
ATM-20 (Cylinder Preparation - Chrome Plating)	Fiber-bed Mist Eliminator	PM/Chrome
ATM-28 (Roto Press 2204)	Regenerative Thermal Oxidizers CD-05 & CD-06	VOC
ATM-29 (Laminator 2253)	Regenerative Thermal Oxidizers CD-05 & CD-06	VOC
ATM-31 (Roto Press 2205)	Regenerative Thermal Oxidizers CD-05 & CD-06	VOC

Haul roads have not been previously calculated in prior permits. Since material is transported between Nordenia #1 and Nordenia #2, haul roads emission on Nordenia #1's property were considered for this permit.

EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 1.4 *Natural Gas Combustion*; and Journal of the Air & Waste Management Association (A&WMA), *Development of Emission Factors for Polyethylene Processing*, (June 1996).

Haul roads were based on 12 trucks per day receiving of raw material at Nordenia #1 and 20 trips per day between the two plants. Haul road calculations were based on AP-42, Section 13.2.1 *Paved Roads* (January 2011).

The affected debottlenecked emission units in the existing facility are calculated using a ratio of past actual bags made per year to future potential bags made per year once all planned equipment is installed as planned in the next five years. The increase in production rate (i.e. bags made) due to the new bag cutting machines has been estimated to equal 45 percent (%). For the emission calculations for the debottlenecked units in the existing facility, past actual emissions have been subtracted from this future potential to emit where applicable.

The potential emissions for this project are based on the following calculations:

1. The new bag cutting machines that will be operated at the facility in the next few years, (Nordenia #2)
2. New natural gas water heater and facility heating units, (Nordenia #2)
3. Haul roads, (Nordenia #1 and #2) and
4. The associated emissions increase from debottlenecking the current film manufacturing and printing operations at the existing facility (Nordenia #1).

As a part of this review, the emissions associated with the debottlenecked equipment previously permitted were verified. During the course of review for this project, several changes and one addition were made to the potential emission other than those caused by the debottlenecking. Existing haul road emissions were not previously calculated and were added in this project. A&WMA document was used to calculate the blown film extrusion emissions.

It is conservatively assumed that all emission units *except* the diesel storage tank (ATM-D1), large boiler (ATM-7), emergency diesel water pumps (ATM-22), roto press 2205 (ATM-31), hot water heater (ATM-34), and miscellaneous propane usage (ATM-35) will experience an increase in actual emissions due to the debottlenecking project. Roto press 2205 (ATM-31) listed above as one of the units not debottlenecked is a coating machine and no product from this roto press is used in the bag making process.

The projected emissions increase in VOCs for this project is 14.122 tpy, which is 3.24 pounds per hour (lbs/hr) and over the 2.75 lbs/hr threshold for VOC according to 10 CSR 10-6.061(3)(A)3.A.; thus triggering the need for a construction permit.

The following table provides a summary of the equipment at the existing facility that will experience a 45% (percent) increase because of this project.

Table 4: Debottlenecked Emission Units

Emission Source Description
ATM-1 n-Propyl Acetate Storage Tank
ATM-2 Solvent Blend Storage Tank
ATM-4-1 Roto Press 2201
ATM-4-2 Roto Press 2202
ATM-4-3 Roto Press 2203
ATM-5 Ink Mixing and Storage
ATM-17 Cylinder Prep - Degreasing
ATM-18 Cylinder Preparation - Nickel Plating
ATM-19 Cylinder Preparation - Copper Plating
ATM-20 Cylinder Preparation - Chrome Plating
ATM-21 Cylinder Preparation - Dechrome
ATM-24 Polyethylene Resin Silos
ATM-25 Blown Film Extrusion
ATM-27 PRI Parts Washer
ATM-28 Roto Press 2204
ATM-29 Laminator 2253
ATM-30 Copper Engraving
ATM-32 Ethyl Acetate Tank
ATM-33 Waste Ink and Solvent Tank

The emissions associated with this project are listed in Table 5. It reflects the 45% increase at the Nordenia #1 and haul road emissions.

Table 5: Emissions Summary (tpy)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions ^{1,3}	Existing Actual Emissions (2010 EIQ)	Net Emissions Increase for Nordenia #1	Net Emissions Increase for Nordenia #2	Total Project Emissions for Nordenia #1 and #2	Conditioned Potential ³ for Nordenia #1 and #2 ⁴
PM _{2.5}	10.0	N/D	0.62	0.57	0.58	1.15	N/A
PM ₁₀	15.0	N/D	0.6280	0.59	0.69	1.28	N/A
SO _x	40.0	N/D	N/A	0.00	0.01	0.01	N/A
NO _x	40.0	N/D	N/A	0.0	1.91	1.91	N/A
VOC	40.0	<250	33.0488	14.122	0.110	14.232	<245.11
CO	100.0	N/D	N/A	0.0	0.82	0.82	N/A
HAPs	10.0/25.0	~6.1 ³	0.0125	2.37	0.04	2.41	N/A
Chromium VI	0.002 ²	0.000862	0.0 ³	0.00039 ³	N/A	0.00039	N/A
Nickel compounds	1.0 ²	0.59	0.02	0.27 ³	N/A	0.27	N/A
Methanol	10	2.14	N/D	0.96 ³	N/A	0.96	N/A
Toluene	10	3.11	N/D	1.40 ³	N/A	1.40	N/A

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

¹In Permit 052008-002, Nordenia took an installation-wide 250 tpy VOC limit. Existing potential emissions were not determined for PM_{2.5}, PM₁₀, SO_x, NO_x, and CO.

²Screening Model Action Level (SMAL)

³Applicant submitted existing HAP emission total for installation. These have not been completely verified. However, they are believed to be representative.

⁴VOC conditioned PTE is equal to Nordenia #1 facility limitation of 245 tpy plus the PTE of Nordenia #2 of 0.11 tpy.

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 all pollutants are below de minimis levels.

APPLICABLE REQUIREMENTS

Nordenia U.S.A., Inc. 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.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *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 10-6.165

SPECIFIC REQUIREMENTS

- *Maximum Achievable Control Technology (MACT) Regulations*, 10 CSR 10-6.075, *National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks*, 40 CFR Part 63, Subpart N.
- *Maximum Achievable Control Technology (MACT) Regulations*, 10 CSR 10-6.075, *National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations*, 40 CFR Part 63, Subpart WWWWWW.

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.

Kathy Kolb
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated March 22, 2012, received March 27, 2012, designating Nordenia International AG. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Southeast Regional Office Site Survey, dated December 8, 2011.

Mr. Jeff Kisner
Manager Health, Safety, and Environment
Nordenia U.S.A., Inc.
14591 State Highway 177
Jackson, MO 63755

RE: New Source Review Permit - Project Number: 2012-03-085

Dear Mr. Kisner:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Kathy Kolb, at the department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:kk1

Enclosures

c: Southeast Regional Office
PAMS File: 2012-03-085

Permit Number: