

STATE OF MISSOURI



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:

112011-002

Project Number: 2011-05-039

Installation Number: 031-0064

Parent Company:

Kyowa Hakko Bio Ltd

Parent Company Address: PO Box 1550, Cape Girardeau, MO 63702

Installation Name:

BioKyowa, Inc.

Installation Address:

5469 Nash Road, Cape Girardeau, MO 63702

Location Information:

Cape Girardeau County, S28, T18N, R13E

Application for Authority to Construct was made for:

The installation of two conical dryers and associated handling equipment. 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.

NOV - 2 2011

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 Departments' Air Pollution Control Program of the anticipated date of start up 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 start up 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."

Biokyowa, Inc.
Cape Girardeau County (S28, T18N, R13E)

1. Control Device Requirement-Baghouse
 - A. Biokyowa shall control emissions from the following equipment using baghouses as specified in the permit application.
 - 1) Two receiving tanks vented to stack (EP-49)
 - 2) A T-2506C Filter Surge Hopper (EP-50)
 - 3) A T-2509B Filter Surge Hopper (EP-50)
 - 4) A Receiving Hood to DR-2510B Dryer Blender 1 (EP-50)
 - 5) A Receiving Hood to DR-2510C Dryer Blender 2 (EP-50)
 - 6) Surge Hopper T-2506B (EP-50)
 - 7) Surge Hopper T-2507C (EP-50)
 - 8) Pin Mill Surge Hopper T-2508 (EP-50)
 - 9) Rotary Valve Receiver Y2508
 - B. The baghouses shall be operated and maintained in accordance with the manufacturer's specifications. The baghouse shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the Department of Natural Resources' employees may easily observe them.
 - C. Replacement filters for the baghouses shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
 - D. Biokyowa, Inc. shall monitor and record the operating pressure drop across the baghouses at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - E. Biokyowa, Inc. shall maintain an operating and maintenance log for the baghouses and drum filters which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of

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SPECIAL CONDITIONS:

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

- event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
2. Record Keeping Requirements
BioKyowa, 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

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

Project Number: 2011-05-039
Installation ID Number: 031-0064
Permit Number:

BioKyowa, Inc.
5469 Nash Road
Cape Girardeau, MO 63702

Complete: May 16, 2011

Parent Company:
Kyowa Hakko Bio Ltd
PO Box 1550
Cape Girardeau, MO 63702

Cape Girardeau County (S28, T18N, R13E)

REVIEW SUMMARY

- BioKyowa, Inc. has applied for authority to construct two conical dryers and associated handling equipment.
- Hazardous Air Pollutant (HAP) emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to this installation. None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- Baghouses are being used to control the particulate emissions from the equipment in this permit.
- 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, including particulate matter (PM), particulate matter less than ten microns in diameter (PM₁₀) and particulate matter less than two-and-a-half microns in diameter (PM_{2.5}), are below their respective 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.
- Emissions testing are not required for the equipment.
- An off-permit change notification letter for the Part 70 Operating Permit (OP2006-040) is required to be sent to the Air Pollution Control Program.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

BioKyowa, Inc. manufactures feed additives for animal and human consumption. The manufacturing process consists of two production plants (identified as Plant 1 and 2), a natural gas/fuel oil-fired steam generation plant, an evaporation plant and a wastewater treatment plant. The method of production involves fermentation to produce the feed additive and subsequent processing and handling of the product.

The emissions from the existing installation consists of particulate matter from the grinding and sizing of the finished product, products of combustion from the boilers and HAPs and volatile organic compounds (VOCs) from the fermentation and extraction processes. The installation is considered a minor source for construction permits. A Part 70 Operating Permit (OP2006-040) was issued to the facility in July, 2006. Since this project will not affect any of the limits and conditions in the existing operating permit (OP2006-040), this project is considered an off-permit change and no modification or amendment to your operating permit is necessary. However, the facility is still required to submit a letter of notification to the Operating Permit Unit of the Air Pollution Control Program for the off-permit change.

The following construction permits have been issued to BioKyowa, Inc. from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
0983-006...009	Construction of a new l-lysine production installation
0284-020	Addition of a new boiler
0190-002	New boiler and drying system
0693-020	Approval to burn No. 2 fuel oil in existing natural gas-fired boilers
1099-021	Expansion to increase l-lysine production and to add FNA line
1099-021A	Wording Correction
1099-021A	Wording Change
122002-002	Modification of an existing FNA feed additive process line to allow for the production of argentine, glutamine and other amino acids in what is called the BFK process line
082008-017	Installation of four 11.56 MMBtu/hr natural gas-fired boilers and the addition of an aftercooler to plant 2, which will result in increased throughput.

PROJECT DESCRIPTION

BioKyowa, Inc. plans to install two (2) conical dryers and associated handling equipment including five (5) hoppers, two (2) receiving tanks and a rotary valve receiver. The addition of the dryers will enable the company to perform drumming operations on-site, which is currently being sent off-site, allowing an increase in its annual production capacity. Plant 2 produces multiple products and the increase in capacity will only be for one of the products (called Product A in this permit). The increase in production capacity for Product A will lead to decreases in the production of some of the other products and therefore, usage of some of the raw materials that are used in multiple products, such as hydrochloric acid (HCl), are not expected to be increased.

BioKyowa has requested that the production throughputs submitted in this application be treated as confidential. The company believes that the information identified as “confidential” has competitive value since access to the data would put the company at a competitive disadvantage.

EMISSIONS/CONTROLS EVALUATION

This project adds two emission points (EP-49 and EP-50). Emissions from the receiving tanks are vented through EP-49 while emissions from the dryer and other handling equipment are vented through EP-50. Emission point EP-38, which is the pneumatic transfer of products, will also see a slight increase in actual emissions of particulate matter. All of these emission points are controlled by a baghouse. PM_{2.5}, PM₁₀ and PM emissions from EP-49 and EP-50 were calculated using the manufacturer’s guarantee of 0.02 grains per dry standard cubic feet (gr/dscf). Emissions from EP-38 are calculated using an emission factor of 0.061 pounds per ton processed (lbs/ton), which is the PM emission factor for grain handling given in Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition, Chapter 9.9.1, *Grain Elevator and Processes*, May, 2003, and giving a 99% control efficiency for the baghouse, which is the default value used by the Air Pollution Control Program. No effort was made to distinguish between PM_{2.5}, PM₁₀ and PM emissions because the PM emissions are already low (i.e. 0.57 tons per year) and differentiating between PM_{2.5}, PM₁₀ and PM will not change the status of the permit. Even though the emissions are below the insignificant exemption level given in Table 1 of Missouri State Rules 10 CSR 10-6.061 (3)(A)3.A., a permit is needed because the emissions calculation is based on the use of baghouses. The Air Pollution Control Program does not take into account control devices when determining permit applicability.

Emissions from other emission points (EP-18, EP-19, EP-23, EP-24, EP-30, EP-31, EP-32, EP-36, EP-37) are not expected to be affected by this project because it either does not participate in the making of Product A or because emissions from the production of Product A will lead to a decrease in emissions from the production of other products.

The following table provides an emissions summary for this project.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions (Note 1)	Existing Actual Emissions (2010 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM _{2.5}	10.0	N/D	1.86	0.57	N/A
PM ₁₀	15.0	51.34	2.90	0.57	N/A
PM	25.0	N/D	N/D	0.57	N/A
SOx	40.0	<250	1.13	N/A	N/A
NOx	40.0	171.33	9.15	N/A	N/A
VOC	40.0	89.25	10.56	N/A	N/A
CO	100.0	79.48	20.55	N/A	N/A
HAPs	10.0/25.0	20.37	0.67	N/A	N/A

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

Note 1: Existing potential emissions calculated by adding the potential emissions of the application from permit 082008-017 and the existing potential emissions before permit 082008-017 was issued. This overestimates emissions because the emissions of the application from permit 082008-017 contains all of the potential emissions associated with Plant 2, some of which are also included in the existing potential emissions before permit 082008-017 was issued.

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

BioKyowa, 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

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.

Chia-Wei Young
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated May 13, 2011, received May 16, 2011, designating BioKyowa, Inc. 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 May 23, 2011.

Mr. Bruce Blankenship
Safety and Environmental Manager
BioKyowa, Inc.
PO Box 1550
Cape Girardeau, MO 63702

RE: New Source Review Permit - Project Number: 2011-05-039

Dear Mr. Blankenship:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, 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 Chia-Wei Young, 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

Kendall B. Hale
New Source Review Unit Chief

KBH: cwyl

Enclosures

c: Southeast Regional Office
PAMS File: 2011-05-039

Permit Number: