

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

BUREAU OF AIR

DIVISION of AIR POLLUTION CONTROL

PERMIT SECTION

PROJECT SUMMARY for the
DRAFT CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT

Ineos Silicas Americas, LLC
101 Ingalls Avenue
Joliet, Illinois 60435

Illinois EPA ID Number: 197045ABO

Application Number: 96030053
Application Type: Significant Modification

Start of Public Comment Period: February 27, 2007

Close of Public Comment Period: March 29, 2007

Permit Engineer/Technical Contact: Sunil Suthar, 217/782-2113

Community Relations/Comments Contact: Brad Frost, 217/782-7027

(This Project Summary generally describes the source and explains the draft permit. This document has been prepared pursuant to Section 39.5(8)(b) of the Illinois Environmental Protection Act, which requires "a statement that sets forth the legal and factual basis for the draft CAAPP permit conditions.")

I. INTRODUCTION

This source has applied for a Significant Modification of the Clean Air Act Permit Program (CAAPP) operating permit. The CAAPP is the program established in Illinois for operating permits for significant stationary sources as required by Title V of the federal Clean Air Act and Section 39.5 of Illinois' Environmental Protection Act. The conditions in a CAAPP permit are enforceable by the Illinois Environmental Protection Agency (Illinois EPA), the USEPA, and the public. This document is for informational purposes only and does not shield the Permittee from enforcement actions or its responsibility to comply with applicable regulations. This document shall not constitute a defense to a violation of the Act or any rule or regulation.

A CAAPP permit contains conditions identifying the applicable state and federal air pollution control requirements that apply to a source. The permit also establishes emission limits, appropriate compliance procedures, and specific operational flexibility. The appropriate compliance procedures may include monitoring, record keeping, and reporting to show compliance with these requirements. The Permittee must carry out these procedures on an on-going basis to demonstrate that the source is operating in accordance with the requirements of the permit. Further explanations of the specific provisions of the draft CAAPP permit are contained in the attachments to this document, which also identify the various emission units at the source.

This significant modification seeks to: increase the process with rate limit for gel plant ring dryers in Condition 7.1.6(a) from 30,660 T/yr to 40,300 T/yr, increase the process weight rate limit for the three gel mills in Condition 7.1.6 from 9,000 T/yr to 13,000 T/yr, and to increase the PM emission limitation for the gel mills of Condition 7.1.6 to 0.88 T/yr. Language pertaining to the construction/modification of a Gel Dryer from Permit 04010025 has also been incorporated into this modification of the Title 5 permit. The Compliance Assurance Monitoring language has also been incorporated into this version of the Title V permit.

II. GENERAL SOURCE DESCRIPTION

a. Nature of source

Ineos Silicas Americas, LLC is located at 101 Ingalls Avenue, Joliet. The source is classified as Industrial Inorganic Chemicals Manufacturing. Emission sources at the facility consist of: Micronized Gel Production, Hydrogel Production, Fusing Feed, Fusing Furnaces 1 and 2, Grinding Classification, Zeolite Production, and Silicate Dissolving.

b. Ambient air quality status for the area

The source is located in an area that is currently designated nonattainment for the National Ambient Air Quality Standards for Ozone and PM_{2.5}, and attainment or unclassifiable for CO, NO₂, SO₂, PM, and Lead.

c. Major source status

This permit is issued based on the source requiring a CAAPP permit as a major source of NO_x and PM emissions.

d. Source Emissions

The following table lists annual emissions of criteria pollutants from this source, as reported in the Annual Emission Reports sent to the Illinois EPA.

Pollutant	Annual Emissions (tons)		
	2004	2003	2002
CO	10.93	9.95	9.47
NO _x	69.04	66.17	59.89
PM	53.98	56.03	45.04
SO ₂	2.88	2.98	2.63
VOM	2.08	1.27	0.37

III. NEW SOURCE REVIEW/TITLE I CONDITIONS

This draft permit contains terms and conditions that address the applicability of permit programs for new and modified sources under Title I of the Clean Air Act (CAA) and regulations promulgated thereunder, including 40 CFR 52.21, Prevention of Significant Deterioration (PSD) and 35 IAC Part 203, Major Stationary Sources Construction and Modification. Any such terms and conditions are identified within the draft permit by T1, T1R, or T1N. Any conditions established in a construction permit pursuant to Title I and not revised or deleted in this draft permit, remain in effect pursuant to Title I provisions until such time that the Illinois EPA revises or deletes them. Where the source has requested that the Illinois EPA establish new conditions or revise such conditions in a Title I permit, those conditions are consistent with the information provided in the CAAPP application and will remain in effect pursuant to Title I provisions until such time that the Illinois EPA revises or deletes them.

This draft permit would establish new Title I requirements and newly revised Title I requirements. Specifically, the process weight rate limit on the two gel plant dryers were increased from 30,660 T/yr to 40,300 T/yr. The process weight rate for the three gel

mills was increased from 9,000 T/yr to 13,000 T/yr. The PM emissions rate on three gel mills was also increased from 0.44 T/yr to 0.88 T/yr

IV. COMPLIANCE INFORMATION

The source has certified compliance with all applicable rules and regulations; therefore, a compliance schedule is not required for this source. In addition, the draft permit requires the source to certify its compliance status on an annual basis.

V. PROPOSED ILLINOIS EPA ACTION/REQUEST FOR COMMENTS

It is the Illinois EPA's preliminary determination that this source's permit application meets the standards for issuance of a CAAPP permit. The Illinois EPA is therefore proposing to issue a CAAPP permit, subject to the conditions proposed in the draft permit.

Comments are requested by the Illinois EPA for the draft or proposed permit, pursuant to 35 IAC Part 252 and Sections 39.5(8) and (9) of the Illinois Environmental Protection Act. A final decision on the draft or proposed permit will not be made until the public, affected states, and USEPA have had an opportunity to comment. The Illinois EPA is not required to accept recommendations that are not based on applicable requirements. If substantial public interest is shown in this matter, the Illinois EPA will consider holding a public hearing in accordance with 35 IAC Part 166.

ATTACHMENT 1: Summary of Source-Wide Requirements

The following table indicates the source-wide emissions control programs and planning requirements that are applicable to this source. These programs are addressed in Sections 5 and 6 of the draft permit.

Program/Plan	Applicable
Emissions Reduction Market System (ERMS)	
Nitrogen Oxides (NO _x) Trading Program	
Acid Rain Program	
Compliance Assurance Monitoring (CAM) Plan ¹	x
Fugitive Particulate Matter (PM) Operating Program ²	x
Risk Management Plan (RMP)	
PM ₁₀ Contingency Measure Plan	

1. Compliance Assurance Monitoring (CAM) is a program for pollutant-specific emission units which use an add-on control device to achieve compliance with an emission limitation or standard. A CAM plan is required for such units that have potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than major source threshold levels, and are not specifically exempt by 40 CFR Part 64. Subject units and the CAM plans are identified in Attachment 3 of the draft permit.
2. The fugitive PM operating program is required to significantly reduce fugitive particulate matter emissions from certain affected locations and facilities (35 IAC Part 212.309 – 212.312). Normally, elements of this program include, but are not limited to, addressing normal traffic pattern roads, parking facilities, and material piles and handling through the use of water, oils, or chemical dust suppressants.

ATTACHMENT 2: Summary of Requirements for Specific Emission Units

The following tables include information on the requirements that apply to significant emission units at this source. The requirements are found in Section 7 of the draft permit, which is further divided into subsection, i.e., Section 7.1, 7.2, etc., for the different categories of units at the source. A separate table is provided for each subsection in Section 7 of the draft permit. An explanation of acronyms and abbreviations is contained in Section 2 of the draft permit.

Table 1 (Section 7.1 of the draft permit)

Emission Unit	
Name	Process Emission Unit 1
Description	Micronized Silica Gel Manufacturing:
Date Constructed	Micronized Silica Gel produced by reacting sodium silicate with sulfuric acid; in washing operation, forms silica slurry, which is dewatered,

Emission Unit	
Name	Process Emission Unit 1
Emission Control Equipment	<p>dried, milled to desired particle size, de-aerated, and packaged.</p> <p>Date Constructed: 7/1991</p> <p style="padding-left: 40px;">Gel Ring Dryers S1, S2</p> <p style="padding-left: 40px;">Date Constructed: 2004</p> <p style="padding-left: 40px;">Emission Control Equipment: Dust Collectors: GDC701, GDC721</p> <p style="padding-left: 40px;">Gel Mills (3)</p> <p style="padding-left: 40px;">Date Constructed: 2004</p> <p style="padding-left: 40px;">Emission Control Equipment: Dust Collectors: GDC804, GDC824, GDC854</p> <p>Hydrogel Production:</p> <p style="padding-left: 40px;">Raw materials sulfuric acid and sodium silicate are mixed (at specified concentration, temperature, composition and flowrate). The gel is then cut, washed, milled, then packed.</p> <p style="padding-left: 40px;">ACM Mill/Classifier Product Bagger</p> <p style="padding-left: 40px;">Date Constructed: 7/1988</p> <p style="padding-left: 40px;">Emission Control Equipment: Collectors and Final Filter (for Mill/Classifier and Product Bagger)</p>
Description	Packaging Room Emissions
Date Constructed	

Emission Unit	
Name	Process Emission Unit 1
Emission Control Equipment (Cont.)	<p>Date Constructed: 7/1988</p> <p>Emission Control Equipment: Dust Collectors and Final Filter (for nuisance dust in packaging room) Rip-Tip Bag Cutter</p> <p>Date Constructed: 1973</p> <p>Emission Control Equipment: Dust Collectors for Rip-Tip Bag Cutter (venting inside, not to atmosphere)</p> <p>Fusing Feed:</p> <p>Soda ash is received from RR car; silica sand received from trucks; both are stored in silos, and then mixed at appropriate ratio for feed into Furnace #1 and 2.</p> <p>Date Constructed: 1961</p> <p>Emission Control Equipment: Micropul Feed Baghouse</p> <p>Grinding and Classification:</p> <p>Sodium Metasilicates fused in Fusing Furnace No. 1 are transported via screw conveyor and bucket elevator to a grind feed bin (flake bin), and then to a grinder. From the grinder, the material is sent to a classifier, which separates the sodium metasilicates by grain size. Some of the material is stored in one of six storage bins, while the larger particle size material is recycled back to the grinder.</p> <p>Date Constructed: 1992</p> <p>Emission Control Equipment: Baghouse #2</p> <p>Dissolvers:</p> <p>Glass from Fusing Furnace No. 2 is conveyed to one of three dissolvers. Water and steam are added to the dissolver, and glass is dissolved under proper temperature and pressure conditions.</p>

Emission Unit	
Name	Process Emission Unit 1
Emission Control Equipment (Cont.)	Date Constructed: Emission Control Equipment: Condenser "C" (only used for water vapor, letdown from dissolvers), W.W. Sly Impinjet 2 Stage Scrubber
Applicable Rules and Requirements	
Emission Standards	<ul style="list-style-type: none"> • 35 IAC 212.322: this unit is a major source of PM; this rule limits PM hourly emissions based on PWR for units constructed <u>after</u> 1972. • 35 IAC 212.321(a): this unit is a major source of PM; this rule limits PM hourly emissions based on PWR for units constructed before 1972.
Streamlining	None
Title I Conditions	<ul style="list-style-type: none"> • The draft permit contains limits on emissions in Conditions 7.1.6 for] <ul style="list-style-type: none"> Gel Plant Mill (GQ853) Gel Plant Ring Dryers Gel Plant Mill (GM801 and GM821) • These limits were incorporated from Permit 91080071. • The limitations in Conditions 7.1.5 and 7.1.6 contain revisions to previously issued Permit 91080071. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this aforementioned permit, consistent with the information provided in the CAAPP application. The equipment and activities permitted in this permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, the process weight rate limit on the two gel plant dryers were increased from 30,660 T/yr to 40,300 T/yr. The process weight rate for the three gel mills was increased from 9,000 T/yr to 13,000 T/yr. The PM emissions rate on three gel mills was also increased from 0.44 T/yr to 0.88 T/yr [T1R].

Emission Unit	
Name	Process Emission Unit 1
Title I Conditions (Cont.)	<ul style="list-style-type: none"> The limitations for the micronized silica gel ring dryer (S2) in Condition 7.1.6 were established in Permit 04010025. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to these rules. [T1]
Non-applicability	<ul style="list-style-type: none"> None
Periodic Monitoring (other than basic regulatory requirements)	
Testing	None
Emissions Monitoring	None
Operational Monitoring	None
Inspections	None
Recordkeeping	<p>Process Weight Rate: required to determine compliance with 35 IAC 212.322 and 35 IAC 212.321</p> <p>Bag Collector Records of Operation: used to ensure good operating practices</p>
Other	None
Reporting	
Prompt Reporting	Standard in all Title 5 permits
Other Reporting	None
Other Information	
Footnotes	None

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