

Air Permit Review

Permit Issue Date: **PROPOSED, 2007**

Region: Wilmington Regional Office County: New Hanover NC Facility ID: 6500083 Inspector's Name: Ashby Armistead Date of Last Inspection: 09/26/2006 Compliance Code: 3/In Compliance - Inspection

Facility Data			Permit Applicability (this application only)		
Applicant (Facility's Name): Invista, S.a.r.l. Facility Address: Invista, S.a.r.l. 4600 Highway 421 North Wilmington, NC 28401 SIC: 2869 / Industrial Organic Chemicals,nec NAICS: 325211 / Plastics Material and Resin Manufacturing Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V			SIP: NSPS: NESHAP: PSD: PSD Avoidance: NC Toxics: 112(r): Other: Renewal		
Contact Data			Application Data		
Facility Contact	Authorized Contact	Technical Contact	Application Number: 6500083.07A Date Received: 06/01/2007 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 0164T37 Existing Permit Issue Date: 09/14/2004 Existing Permit Expiration Date: 02/29/2008		
Dennis Tart Sr. Environmental Engineer (910) 341-3671 4600 Highway 421 North Wilmington NC, 28402+0327	William King Site Manager (910) 341-5594 4600 Highway 421 North Wilmington NC, 28402+0327	Donna Lazzari EHS Manager (910) 341-3146 4600 Highway 421 North Wilmington NC, 28402+0327			
Review Engineer: Michael Brandon, P.E. Review Engineer's Signature: _____		Date: _____	Comments / Recommendations: Issue 0164T38 Permit Issue Date: PROPOSED 2007 Permit Expiration Date: 5 yr		

I. Purpose of Application:

This permitting action is a renewal of an existing Title V permit pursuant to 2Q .0513. The existing Title V permit (00164T37) was issued on September 14, 2004 and expired on February 29, 2008. The renewal application was received and deemed complete on June 1, 2007. The renewal application was received at least nine months prior to the expiration date. Therefore, the existing permit will **not** expire until the renewal permit has been issued or denied with submittal of a complete and timely application, and the terms and conditions of the existing permit will remain in effect until the renewal permit has been issued or denied pursuant to 2Q .0513.

II. Facility Description

Invista, S.a.r.l. is a chemical plant that produces dimethyl terephthalate and terephthalic acid from paraxylene.

III. History/Background/Application Chronology

March 14, 2003 - Initial Title V (0164T32) issued by Michael Brandon
 May 7, 2003 - permit revision 0164T33 issued by Michael Brandon for administrative amndement
 July 8, 2003 - permit revision 0164T34 issued by Michael Brandon for significant modification
 September 9, 2003 - permit revision 0164T35 issued by Michael Brandon for minor modification
 April 28, 2004 - permit revision 0164T36 issued by Michael Brandon for Name Change and Administrative Amendment and reformat of permit to MS Word
 September 14, 2004 - permit revision 0164T37 issued by Michael Brandon for Significant modification
 June 1, 2007 - Received application for renewal of existing Title V permit.

IV. Permit Changes

The following table describes the modifications to the current permit as part of the renewal process:

PAGE	CONDITION	CHANGE
NA	Insignificant Activities	The list was made into a table. 149 of the emission unit ID Nos. had to be modified to add the "I" designation
NA	Insignificant Activities	The hydrated lime silo (ID No. T32041) was removed from the permit at the applicants request.
NA	Insignificant Activities	The following 14 tanks were constructed after the applicability date for NSPS Kb and were subject to the record keeping requirements of that rule. The rule revision now exempts them entirely and the "NSPS Kb" has been removed from the tank description. Nine Terate Resin tanks (ID Nos. IT1219, IT1220, IT7006, IT7008, IT70011, IT70014, IT70016, IT7017, IT7019) Two DMT Residue tanks (ID Nos. IT13002R and IT69004) Two Additive tanks (ID No. IT7009 and IT70015) Diethylene glycol tank (ID No. IT64173)
9	Equipment List	Notation of applicability to the Miscellaneous Organic Chemical Manufacturing NESHAP (a.k.a. MON, 40 CFR 63, Subpart FFFF) was added for the Terate resin equipment. A closed vent system designation was added for the vent collection header (ID No. VS7100) as LDAR will likely apply.
NA	Equipment List Section 2.2 D.	Wastewater tank (ID No. T1939A) was removed at the applicant's request.
11	Equipment list	Moved the PTA slurry tank (ID No. T4051) and condenser (ID No. E40513CD) from the insignificant activity list.
12	Equipment list	Provided designations for control equipment on the DMT rail loading operation (ID No. DMTRAIL). A water venturi scrubber controls particulate emissions (ID No. T6550CD) and condenser (ID No. E65504CD) controls methanol emissions.
17	2.1 B	Monitoring, record keeping, and reporting requirements were added for the particulate control scrubber.
13/14	Equipment List	Notation of applicability to the Industrial, Commercial, and Institutional Boiler and Process Heaters NESHAP (40 CFR 63, Subpart DDDDD) was added for fuel fired equipment. (Only Initial Notification required.)
16	2.1 A.1.c.i. 2.1 A.1.d.	The monitoring condition was modified to include the pump horsepower minimum alarm. Added monitoring of alarm events and remediation.
16 18 20 23/24 26/27	2.1 A.2.c 2.1 B.2.c 2.1 C.2.d 2.1E.3.c 2.1 F.2.c	The visible emissions monitoring provisions were modified to clarify intent.
58	Section 2.2 G.	Added table row for last MACT TAP assessment.
59	Section 2.2 G.1.a.	Revised the start-up, shut-down., and malfunction requirements pursuant to revisions in 40 CFR 63.6 on April 26, 2006.
63	Section 2.2 G.6.	Added the last MACT TAPS facility wide assessment requirement 2Q .0705.
64	Section 2.2 H.	A future MACT compliance provision for the MON was added.
65-71	General Conditions	The citation codifications were updated.
67	General Conditions, IA.3. IB.2.	The reporting requirement was changed from next business day to quarterly. This added provision defines violation for excess emissions.

PAGE	CONDITION	CHANGE
68	General Conditions, P.	The compliance certification date was changed from January 1 to March 1.

V. Regulatory Review

The facility is subject to the following regulations:

- 15A NCAC 2D .0402: Ambient Air Quality Standards for Sulfur Dioxide
- 15A NCAC 2D .0503: Particulates From Fuel Burning Indirect Heat Exchangers
- 15A NCAC 2D .0515: Particulates From Miscellaneous Industrial Processes
- 15A NCAC 2D .0516: Sulfur Dioxide Emissions From Combustion Sources
- 15A NCAC 2D .0521: Control of Visible Emissions
- 15A NCAC 2D .0949: Storage of Miscellaneous Volatile Organic Compounds
- 15A NCAC 2D .1100: Control of Toxic Air Pollutants (via 2D .1208)
- 15A NCAC 2D .1111: MACT for SOCOMI (HON 40 CFR 63, Subpart F, G, and H), MACT for Boilers (40 CFR 63, Subpart DDDDD), MACT for Miscellaneous Organic Chemical Manufacture (40 CFR 63, Subpart FFFF)
- 15A NCAC 2D .1208: Other Incinerators
- 15A NCAC 2D .1806: Control and Prohibition of Odorous Emissions

- 15A NCAC 2Q .0317: Avoidance Condition for Prevention of Significant Deterioration (NOx, SO₂, PM/PM-10)
- 15A NCAC 2Q .0705: Existing Sources and SIC calls for facility wide toxic air pollutant assessment
- 15A NCAC 2Q .0711: Toxic Air Pollutant Emissions Limitation Requirement (H₂SO₄, Hg, Cl₂, Mn)

The facility is no longer subject to New Source Performance Standards for Volatile Organic Compound Storage Tanks (15A NCAC 2D .0524 - 40 CFR Part 60 Subpart Kb)

VI. NSPS, NESHAPS, PSD, Attainment Status, 112(r), CAM, NOx SIP Call

NSPS

The NSPS for the storage of volatile organic liquids (Kb) was amended on October 15, 2003 to change the applicability criteria and now exempts tanks of all sizes that do not contain volatile organic liquids with vapors pressures less than 3.5 kilopascals (~0.51 psi). Terate resins, diethylene glycol, and additives are not stored at temperatures that would cause their respective vapor pressures to exceed this value.

NESHAP/MACT

The following new MACT requirements apply to this facility.

40 CFR 63, Subpart FFFF

Terate resins production will be subject to the Miscellaneous Organic Chemical Manufacture, NESHAP (MON). The facility has a future compliance date of May 10, 2008 [40 CFR 63.2445(b)] and the "Notification of Compliance" status report is due by October 27, 2009 [40 CFR 63.2450(g)(5)].

40 CFR 63, Subpart DDDDD

The boilers and process heaters are subject to the Initial Notification Requirements of the Industrial, Commercial, and Institutional Boiler and Process Heaters NESHAP.

40 CFR 63, Subpart EEEE

Organic Liquids Distribution- All methanol and xylene storage and handling is covered under the HON (40 CFR 63 Subparts F, G, and H) and are excluded from this rule as effected sources. [40 CFR 63.2338(c)]

PSD/NSR

This existing facility is a major source for PSD applicability.

Attainment Status

This facility is located in New Hanover County, which is currently in attainment for all pollutants. No increase in emissions is expected during the renewal process.

CAM

40 CFR 64 requires that a continuous assurance monitoring plan be developed for all equipment located at a major facility that have pre-controlled emissions above the major source threshold (100 tons per year of PM-10) and use a control device to meet an applicable standard. The Permittee has reviewed all controlled emission sources that are not regulated by MACT and determined that the terephthalic acid steam heated dryer (ID No. G4074) with wet cyclonic scrubber (ID No. A40749RCD) has uncontrolled particulate emissions of 56 pounds per hour and requires control to meet an allowable emission limit of 42.5 pounds per hour pursuant to the particulate control standard 15A NCAC 2D .0515.

Section 6.11 of "The US EPA Compilation of Air Pollution Factors (AP42)" was used to estimate emissions from the product transfer of terephthalic acid (7 grams per kilogram or 700 ppmw). The maximum throughput of terephthalic acid is 40 tons per hour with an allowable emission rate of 42.5 pounds per hour. Uncontrolled emissions are estimated to be 56 pounds per hour requiring about 24 percent reduction in emission by the control device. The wet cyclonic scrubber is a passive control device where hygroscopic material, such as terephthalic acid, is flushed from the device with a water spray. The water supply serves to maintain the proper function of the cyclone rather than by impaction as in a scrubber.

The annual through put of 450 million pounds per year results in uncontrolled annual particulate emissions of about 158 tons. However, the purified terephthalic acid powder has an aerodynamic particle size greater than 10 micrometers and very few fines of this size are generated in the handling of the powder due to product specification and its extreme hygroscopic nature. It is estimated that less than five percent of the particulate matter generated is PM-10. Therefore; uncontrolled emissions of PM-10 for the purpose of determining CAM applicability would be about eight tons per year under the worst-case scenario. CAM would; therefore, not apply.

VII. Facility-wide Air Toxics

The facility has **not** triggered the state-only toxics regulations (2D .1100) with the exception of emissions from the wastewater incinerator for which a negative determination was made for the toxic metals of concern. However, the facility must comply with the last MACT facility wide TAP assessment requirements of 15A NCAC 2D .0705. This regulation requires the facility wide assessment of TAPs upon submission of an application to comply with the last applicable MACT. The last applicable MACT for this regulation is the MON with a compliance date of March 10, 2008.

The Permittee has reported facility wide TAPS in the renewal application as follows.

Pollutant	lb/hr	lb/day	lb/year
acetaldehyde	0.356	NA	NA
acetic acid	45.5	NA	NA
ammonia	3.35	NA	NA
benzene	NA	NA	3.37
1,4 dioxane	NA	8.98	NA
formaldehyde	8.24	NA	NA
toluene	4.75	114	NA
xylene	33.8	811	NA

VIII. Statement of Compliance

The responsible official has certified that the facility is not in compliance with the applicable regulations for the leak detection and repair monitoring of some open ended lines as required by the HON. However, the responsible official has certified that the LDAR program has been modified to include these equipment.

The DAQ has, otherwise, reviewed the compliance status of this facility and find it to be in compliance with all applicable regulations and permit conditions (The latest compliance inspection was on September 26, 2006.)

IX. Facility Emissions Review

The facility recalculated emissions from some equipment based on revised emission factors and provided revised facility wide potential emissions. These new emissions estimates are contained in the table below.

Pollutant	Potential Emissions (tons per year)	Expected Actual Emissions (tons per year)
Criteria Pollutants		
particulate matter (PM)	1,100	357
PM10	919	312
PM2.5	604	215
sulfur dioxide	15,400	4,560
nitrogen oxides	3,130	901
carbon monoxide	15,600	13,300
volatile organic compounds	1,150	977
lead	0.07	0.03
Hazardous Air Pollutants		
acetaldehyde	1.9	1.56
benzene	3.37	2.92
1,4 dioxane	1.88	1.64
formaldehyde	42.5	36.1
methanol	434	378
toluene	24.1	20.8
xylene	170	148
Total HAPS	677.75	NA

X. Stipulation Review

The permit modification/changes (where needed) were incorporated into the permit (see table of changes in Section IV of this document).

XI. Public Notice / EPA and Affected State Review

Pursuant to 2Q .0521, a notice of the draft Title V Permit will be placed in a newspaper of general circulation in the area where the facility is located. The notice provides for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice will be sent to persons on the Title V mailing list and EPA. Pursuant to 2Q .0522, a copy of each permit application, each proposed permit and each final permit were provided to EPA. Also pursuant to 2Q .0522, a notice of the draft Title V Permit was provided to each affected State at or before the time notice was provided to the public under 2Q .0521 above. There are no affected States for this facility.

XII. Conclusions, Comments, and Recommendations

The RCO and WIRO recommend renewal of the Title V operating permit 0164T38.