Commonwealth of Pennsylvania
Department of Environmental Resources
Bureau of Air Quality Control

RACT APPROVAL

PERMIT NUMBER : OP 61-00011

Owner:	Merisol Antioxidants LLC	Source & Air Cleaning Device	See Attached Page 4
Address:	292 State Route 8. Oil City, PA 16301-9702		
Attention:	Mr. Lee W. Wilson Health, Safety & Env. Mgr.	Location:	292 State Route 8 Oil City Venango County

In accordance with provisions of the Air Pollution Control Act, the Act of January 8, 1960, P. L. 2119, as amended, and with Chapter 127 of the Rules and Regulations of the Department of Environmental Resources, the Department on **April 18, 2005** approved plans for achieving compliance by the above indicated air contamination source(s) with the requirements of 25 Pa Code Section 129.91 through 129.95.
This permit is subject to the following conditions:

1. That the source(s) and any associated air cleaning device(s) are to be:

   a) Operated in such a manner as not to exceed the emission limitations specified in this Operating Permit;

   b) In compliance with the specifications and conditions of the applicable plan approval(s) issued;

   c) Operated and maintained in a manner consistent with good operating and maintenance practices.

Issued on: April 18, 2005

John F. Guth

John F. Guth

Regional Air Quality Manager

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3. The exhaust gases from the baghouse (which include the Heptane emissions) shall be ducted to the Eclipse Heater or the Petrochem Heater at all times except for emergency bypass, which shall not exceed 876 hours per year (based on a 12 month rolling total).

4. The owner or operator of the facility shall maintain and operate the heaters in accordance with the manufacturer's specifications and in accordance with good air pollution control practices. While the units are used to control Heptane emissions from the North and South BHT dryers, a minimum overall destruction rate of 95% shall be maintained.

5. The permittee shall demonstrate compliance with the minimum destruction rate (95%) by continuously monitoring the temperature of the Eclipse Furnace combustion air preheater (or Petrochem Furnace stack temperature) and maintaining records of the hours of operation of the furnaces and hours of operation of uncontrolled system emissions from the Heptane bypass vent.

6. The furnace operation hours shall be recorded based on the valve position in the bypass stream. The hours of operation shall be recorded monthly (on a calendar basis) and shall be calculated on a rolling sum 12-month basis.

7. The Eclipse Furnace air preheater temperature (or Petrochem Furnace stack temperature) shall be maintained above 275°F while heptane is being directed to these furnaces for destruction to ensure the control device efficiency restriction is being met (i.e., 275°F temperatures ensures no less than a 95% heptane destruction). The temperatures shall be recorded on a strip chart or equivalent recording device.

8. The owner or operator of the facility shall keep records of which heater is used for control of the Heptane emissions, the hours of operation of the heaters, and the hours of operation of the uncontrolled Heptane emissions (based on a 12 month rolling total).

9. The facility shall comply with the fugitive VOC source requirements of 25 Pa Code Section 129.71 by maintaining a Leak Detection and Repair (LDAR) program. The LDAR program shall be implemented in accordance with 40 CFR Part 60 Subpart VV – Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (SOCMI). New pieces of equipment in VOC service shall be added to this program.

10. The sources and air pollution control devices shall be maintained and operated in accordance with the manufacturers specifications and consistent with good air pollution control practices.

11. The facility shall monitor the flare for the presence of a flame on a continuous basis. The thermocouple shall be equipped with an alarm that will notify operators if the flame is out. The facility shall keep records of the presence of a flame at the flare tip (thermocouple reading) and log this at least twice per shift.

12. The company shall limit atmospheric bypass time to 10% of distillation operating hours to minimize annual startup, shutdown, and malfunction emissions. Atmospheric bypass time shall be monitored and recorded on an operator log sheet at least twice per shift. Any atmospheric bypass or flare "flame out" incident exceeding 48 hours shall be verbally reported to the Department within 24 hours. A written account of such events including the corrective measures shall be provided to the Department semi-annually.

13. The isobutylene compressor discharge pressure, isobutylene final condenser temperature, and recovered isobutylene flow shall be recorded on a log sheet twice per shift. The isobutylene compressor discharge pressure, isobutylene final condenser temperature, and recovered isobutylene flow shall be checked twice per shift. The range of all of these parameters shall be identified by the applicant and reported to the Department along with the initial flare performance test results. The parameters shall be included in the Title V Operating Permit. Any parameters not in the operating ranges shall be relayed to the Operations Manager at the plant for follow-up. Total isobutylene recovered shall be tabulated on a monthly basis. The usage of heptane and isobutylene will be tracked on a monthly basis and be recorded in an accounting report. The facility shall also keep records of isobutylene and heptane purchased for a period of five years.

14. The facility shall keep records pertaining to LDAR in accordance with 40 CFR Section 60.486. The facility shall maintain a log containing the components checked, identification of leaking components, location and repair of components for heptane, isobutylene or cresol service equipment. The facility shall follow the reporting requirements of 40 CFR Section 60.487 pertaining to LDAR. This includes submittal of semi-annual reports pertaining to the monitoring of valves, pumps, and compressors.

15. All log sheets and reports containing the above data shall be considered as compliance records and shall be maintained for a period of five years.

16. The facility shall comply with the record-keeping requirements of 25 Pa. Code Section 129.95.

17. This RACT approval applies to the emission of VOC pollutants only. Emission of other pollutants shall be governed by the existing Plan Approvals, Operating Permits, and applicable requirements of the Rules and Regulations of the Department. Such approval, permits, and requirements are incorporated herein by reference and made part of this permit.

18. The expiration date shown on this RACT Operating Permit is for State purposes. For Federal Enforcement purposes the RACT portion of this Operating permit shall remain in effect as part of the State Implementation Plan (SIP) until replaced pursuant to 40 CFR 51.4 and approved by the US Environmental Protection Agency (EPA). The Operating permit shall become enforceable by the US EPA upon its approval of the above as a revision to the SIP.

19. In addition to the above requirements, the facility also implemented the following RACT control measures:

Source and Control Device

- Krystal Chamber Heptane emissions from the Krystal Chamber were reduced by the installation of a new manway over the present opening and by venting the existing open vent to a conservation vent. In addition, the circulating pump packing was replaced with a steam-quenched mechanical seal.

- Mix and recycle tanks Heptane emissions from the mix and recycle tanks were reduced by the installation of a new manway on the mix tank, by venting both tanks to a conservation vent, and by nitrogen blanketing both tanks.

- Oliver Filter Heptane emissions from the Oliver filter were reduced by the installation of new gaskets and by the rebuilding and regasketing of the Krystal discharge chute.

- North and South Dryers Heptane emissions from the North and South Dryers were reduced by the installation of new gaskets and boots. In addition, the emissions from the Dryers were ducted to a new baghouse, which replaced the existing scrubber. The baghouse exhaust is controlled by combustion in the Eclipse or Petrochem Furnace.

- Product drain lines Heptane emissions from the product drain lines were reduced by the installation of site glasses and improved operating procedures.

- Krystal Unit Heptane Still The existing Krystal Unit Heptane Still was modified in the following manner to enhance heptane recovery and reduce emissions from downstream sources: 1) Addition of reflux control; 2) Addition of preheat to the still feed with a pump around loop; 3) Addition of column pressure drop instrumentation and control; 4) Addition of column feed flow control dampening; and 5) Installation

of new column, packing, and internals.

- 314/340 Distillation Column Vacuum system modifications to produce higher concentrations / lower flow of Isobutylene. Two condensers and a three-phase separator (for separation of Nitrogen, Water and liquid Isobutylene) were added to recover Isobutylene. The non-condensable gas stream is directed to the existing flare for combustion..