

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION**

April 28, 2014

**PERMIT TO INSTALL**  
155-13

**ISSUED TO**  
Sun Chemical

**LOCATED AT**  
4925 Evanston Avenue  
Muskegon, Michigan

**IN THE COUNTY OF**  
Muskegon

**STATE REGISTRATION NUMBER**  
B5966

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203:

**January 17, 2014**

DATE PERMIT TO INSTALL APPROVED:

**April 28, 2014**

SIGNATURE:

DATE PERMIT VOIDED:

SIGNATURE:

DATE PERMIT REVOKED:

SIGNATURE:

## PERMIT TO INSTALL

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**Common Abbreviations / Acronyms**

| <b>Common Acronyms</b> |   | <b>Pollutant / Measurement Abbreviations</b> |  |
|------------------------|---|--|--|
| AQD                    | Air Quality Division                                      | BTU  | British Thermal Unit                       |
| BACT                   | Best Available Control Technology                         | °C   | Degrees Celsius                            |
| CAA                    | Clean Air Act   | CO   | Carbon Monoxide                            |
| CEM                    | Continuous Emission Monitoring                            | dscf   | Dry standard cubic foot                    |
| CFR                    | Code of Federal Regulations                               | dscm   | Dry standard cubic meter                   |
| CO <sub>2</sub> e      | Carbon Dioxide Equivalent                                 | °F   | Degrees Fahrenheit                         |
| COM                    | Continuous Opacity Monitoring                             | gr   | Grains                                     |
| EPA                    | Environmental Protection Agency                           | Hg   | Mercury                                    |
| EU                     | Emission Unit   | hr   | Hour                                       |
| FG                     | Flexible Group  | H <sub>2</sub> S                             | Hydrogen Sulfide                           |
| GACS                   | Gallon of Applied Coating Solids                          | hp   | Horsepower                                 |
| GC                     | General Condition   | lb   | Pound                                      |
| GHGs                   | Greenhouse Gases  | kW   | Kilowatt                                   |
| HAP                    | Hazardous Air Pollutant                                   | m  | Meter                                      |
| HVLP                   | High Volume Low Pressure *                                | mg   | Milligram                                  |
| ID                     | Identification  | mm   | Millimeter                                 |
| LAER                   | Lowest Achievable Emission Rate                           | MM   | Million                                    |
| MACT                   | Maximum Achievable Control Technology                     | MW   | Megawatts                                  |
| MAERS                  | Michigan Air Emissions Reporting System                   | ng   | Nanogram                                   |
| MAP                    | Malfuction Abatement Plan                                 | NO <sub>x</sub>                              | Oxides of Nitrogen                         |
| MDEQ                   | Michigan Department of Environmental Quality (Department) | PM   | Particulate Matter                         |
| MSDS                   | Material Safety Data Sheet                                | PM10   | PM with aerodynamic diameter ≤10 microns   |
| NESHAP                 | National Emission Standard for Hazardous Air Pollutants   | PM2.5  | PM with aerodynamic diameter ≤ 2.5 microns |
| NSPS                   | New Source Performance Standards                          | pph  | Pounds per hour                            |
| NSR                    | New Source Review   | ppm  | Parts per million                          |
| PS                     | Performance Specification                                 | ppmv   | Parts per million by volume                |
| PSD                    | Prevention of Significant Deterioration                   | ppmw   | Parts per million by weight                |
| PTE                    | Permanent Total Enclosure                                 | psia   | Pounds per square inch absolute            |
| PTI                    | Permit to Install   | psig   | Pounds per square inch gauge               |
| RACT                   | Reasonably Available Control Technology                   | scf  | Standard cubic feet                        |
| ROP                    | Renewable Operating Permit                                | sec  | Seconds                                    |
| SC                     | Special Condition   | SO <sub>2</sub>                              | Sulfur Dioxide                             |
| SCR                    | Selective Catalytic Reduction                             | THC  | Total Hydrocarbons                         |
| SRN                    | State Registration Number                                 | tpy  | Tons per year                              |
| TAC                    | Toxic Air Contaminant                                     | µg   | Microgram                                  |
| TEQ                    | Toxicity Equivalence Quotient                             | VOC  | Volatile Organic Compound                  |
| VE                     | Visible Emissions   | yr   | Year                                       |

\* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

### GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
  - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
  - b) A visible emission limit specified by an applicable federal new source performance standard.
  - c) A visible emission limit specified as a condition of this Permit to Install.
  
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**
  
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

**SPECIAL CONDITIONS**

**EMISSION UNIT SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

| Emission Unit ID | Emission Unit Description<br>(Process Equipment & Control Devices)  | Flexible Group ID |
|------------------|---|-------------------|
| EU-Strike03T401  | The pigment manufacturing process, including the following equipment:<br>Strike tank 03T401 – controlled by caustic scrubber (ID # 03S7110)<br>Feed Tank Group A – controlled by caustic scrubber (ID # 03S7010)<br>03T200 – Sulfate<br>03T201 – Miscellaneous<br>03T202 – Solution<br>03T204 – Acetic<br>03T205 – Sodium Nitrite<br>03T206 – Hydrochloric Acid<br>03T207 – Caustic<br>03T209 – Calcium<br>03T215 – Sodium Nitrite (Quick Drop)<br>03T216 – Hydrochloric Acid (Quick Drop)<br>03T217 – Caustic<br>03T227 – Dilute Caustic<br>03T235 – Sodium Nitrite<br>03T301 – Rosin<br>03T302 – Amine / Tobias Acid Dissolver (as needed) – controlled by absolute filter (ID # 03F3020)<br>03T311 – Coupler | FG-Azo            |
| EU-Strike03T411  | The pigment manufacturing process, including the following equipment:<br>Strike tank 03T411 – controlled by caustic scrubber (ID # 03S7110)<br>Feed Tank Group B – controlled by caustic scrubber (ID # 03S7010)<br>03T200 – Sulfate<br>03T201 – Miscellaneous<br>03T202 – Solution<br>03T204 – Acetic<br>03T205 – Sodium Nitrite<br>03T206 – Hydrochloric Acid<br>03T207 – Caustic<br>03T209 – Calcium<br>03T217 – Caustic<br>03T225 – Sodium Nitrite (Quick Drop)<br>03T226 – Hydrochloric Acid (Quick Drop)<br>03T227 – Dilute Caustic<br>03T235 – Sodium Nitrite<br>03T301 – Rosin<br>03T302 – Amine / Tobias Acid Dissolver (as needed) – controlled by absolute filter (ID # 03F3020)<br>03T311 – Coupler | FG-Azo            |

| Emission Unit ID | Emission Unit Description<br>(Process Equipment & Control Devices)  | Flexible Group ID |
|------------------|---|-------------------|
| EU-Strike03T402  | The pigment manufacturing process, including the following equipment:<br>Strike tank 03T402 – controlled by caustic scrubber (ID # 03S7110)<br>Feed Tank Group C – controlled by caustic scrubber (ID # 03S7010)<br>03T200 – Sulfate<br>03T205 – Sodium Nitrite<br>03T206 – Hydrochloric Acid<br>03T207 – Caustic<br>03T211 – Rosin<br>03T212 – Solution<br>03T214 – Acetic<br>03T217 – Caustic<br>03T221 – Dilute Caustic<br>03T222 – Dilute Acetic<br>03T232 – Miscellaneous<br>03T233 – Amine<br>03T235 – Sodium Nitrite<br>03T236 – Hydrochloric Acid<br>03T312 – Tetrazo<br>03T321 – Arylide | FG-Azo            |
| EU-Strike03T412  | The pigment manufacturing process, including the following equipment:<br>Strike tank 03T412 – controlled by caustic scrubber (ID # 03S7110)<br>Feed Tank Group C – controlled by caustic scrubber (ID # 03S7010)<br>03T200 – Sulfate<br>03T205 – Sodium Nitrite<br>03T206 – Hydrochloric Acid<br>03T207 – Caustic<br>03T211 – Rosin<br>03T212 – Solution<br>03T214 – Acetic<br>03T217 – Caustic<br>03T221 – Dilute Caustic<br>03T222 – Dilute Acetic<br>03T232 – Miscellaneous<br>03T233 – Amine<br>03T235 – Sodium Nitrite<br>03T236 – Hydrochloric Acid<br>03T312 – Tetrazo<br>03T321 – Arylide | FG-Azo            |
| EU-RsnCrusher    | Rosin Crusher – controlled by caustic scrubber (ID # 03S7010).  | FG-Azo            |
| EU-RedSlryTnk    | 03T901 - Red Slurry Hold Tank – controlled by caustic scrubber (ID # 03S7110).  | FG-Azo            |
| EU-Weigh01       | The pigment manufacturing process, including the following equipment:<br>Materials Weigh-Up Station – controlled by a coarse filter (ID # 02F7010)<br>and caustic scrubber (ID # 02S7010)   | FG-Main           |
| EU-Weigh02       | The pigment manufacturing process, including the following equipment:<br>Materials Weigh-Up Station – controlled by an absolute filter (ID # 03F3020) and caustic scrubber (ID # 03S7010)   | FG-Azo            |
| EU-Weigh03       | The pigment manufacturing process, including the following equipment:<br>Materials Weigh-Up Station – controlled by a coarse filter (ID # 02F7010)<br>and caustic scrubber (ID # 02S7010)   | FG-Main           |

| Emission Unit ID | Emission Unit Description<br>(Process Equipment & Control Devices)   | Flexible Group ID |
|------------------|--|-------------------|
| EU-Strike01T401  | The pigment manufacturing process, including the following equipment:<br>Strike tank 01T401 – controlled by caustic scrubber (ID # 02S7110)<br>Feed Tank Group D – controlled by caustic scrubber (ID # 02S7010)<br>01T201 – Miscellaneous<br>01T202 – Dilute Caustic<br>01T203 – Miscellaneous<br>01T204 – Acetic<br>01T206 – Hydrochloric Acid<br>01T212 – Dilute Acetic<br>01T213 – Miscellaneous<br>01T214 – Acetic<br>01T301 – Arylide<br>01T302 – Tetrazo or Diazo<br>01T304 – Tetrazo or Diazo<br>01T304A – Pre-Coat Tank (SuperCell)<br>01T311 – Arylide | FG-Main           |
| EU-Strike01T411  | The pigment manufacturing process, including the following equipment:<br>Strike tank 01T411 – controlled by caustic scrubber (ID # 02S7110)<br>Feed Tank Group D – controlled by caustic scrubber (ID # 02S7010)<br>01T201 – Miscellaneous<br>01T202 – Dilute Caustic<br>01T203 – Miscellaneous<br>01T204 – Acetic<br>01T206 – Hydrochloric Acid<br>01T212 – Dilute Acetic<br>01T213 – Miscellaneous<br>01T214 – Acetic<br>01T301 – Arylide<br>01T302 – Tetrazo or Diazo<br>01T304 – Tetrazo or Diazo<br>01T304A – Pre-Coat Tank (SuperCell)<br>01T311 – Arylide | FG-Main           |
| EU-Strike01T421  | The pigment manufacturing process, including the following equipment:<br>Strike tank 01T421 – controlled by caustic scrubber (ID # 02S7110)<br>Feed Tank Group D – controlled by caustic scrubber (ID # 02S7010)<br>01T201 – Miscellaneous<br>01T202 – Dilute Caustic<br>01T203 – Miscellaneous<br>01T204 – Acetic<br>01T206 – Hydrochloric Acid<br>01T212 – Dilute Acetic<br>01T213 – Miscellaneous<br>01T214 – Acetic<br>01T301 – Arylide<br>01T302 – Tetrazo or Diazo<br>01T304 – Tetrazo or Diazo<br>01T304A – Pre-Coat Tank (SuperCell)<br>01T311 – Arylide | FG-Main           |

| Emission Unit ID   | Emission Unit Description<br>(Process Equipment & Control Devices)   | Flexible Group ID |
|--|--|-------------------|
| EU-Strike02T401  | The pigment manufacturing process, including the following equipment:<br>Strike tank 02T401 – controlled by caustic scrubber (ID # 02S7110)<br>Feed Tank Group E – controlled by caustic scrubber (ID # 02S7010) and coarse filter (ID # 02F7010)<br>02T201 – Slurry Rework<br>02T202 – Rosin<br>02T203 – Miscellaneous<br>02T206 – Hydrochloric Acid<br>02T207 – Caustic<br>02T301 – Coupler<br>02T302 – Amine / Tobias Acid Dissolver (as needed) controlled by absolute filter (ID # 02AF3020)<br>02T315 – Sodium Nitrite | FG-Main           |
| EU-Strike02T411  | The pigment manufacturing process, including the following equipment:<br>Strike tank 02T411 – controlled by caustic scrubber (ID # 02S7110)<br>Feed Tank Group E – controlled by caustic scrubber (ID # 02S7010) and coarse filter (ID # 02F7010)<br>02T201 – Slurry Rework<br>02T202 – Rosin<br>02T203 – Miscellaneous<br>02T206 – Hydrochloric Acid<br>02T207 – Caustic<br>02T301 – Coupler<br>02T302 – Amine / Tobias Acid Dissolver (as needed) controlled by absolute filter (ID # 02AF3020)<br>02T315 – Sodium Nitrite | FG-Main           |
| EU-Tank05T104N   | Storage tank in the tank farm used to store 56% acetic acid, with nominal capacity of 10,000 gallons – controlled by caustic scrubber (ID # 02S7010)   | FG-Main           |
| EU-Tank05T104S   | Storage tank in the tank farm used to store 56% acetic acid, with nominal capacity of 10,000 gallons – controlled by caustic scrubber (ID # 02S7010)   | FG-Main           |
| EU-Tank05T106  | Storage tank in the tank farm used to store hydrochloric acid, with nominal capacity of 10,000 gallons – controlled by caustic scrubber (ID # 02S7010)   | FG-Main           |
| EU-Tank05T116  | Storage tank in the tank farm used to store hydrochloric acid, with nominal capacity of 10,000 gallons – controlled by caustic scrubber (ID # 02S7010)   | FG-Main           |
| Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290. |  |                   |

**FLEXIBLE GROUP SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

| Flexible Group ID | Flexible Group Description   | Associated Emission Unit IDs  |
|-------------------|--|---|
| FG-Azo            | The AZO pigment manufacturing process, including associated tanks and other equipment servicing red & yellow pigment processing and strike tanks.  | EU-Strike03T401,<br>EU-Strike03T411,<br>EU-Strike03T402,<br>EU-Strike03T412,<br>EU-RsnCrusher,<br>EU-RedSlryTnk,<br>EU-Weigh02  |
| FG-MAIN           | The MAIN pigment manufacturing process, including associated tanks and other equipment servicing red & yellow pigment processing and strike tanks. | EU-Weigh01,<br>EU-Weigh03,<br>EU-Strike01T401,<br>EU-Strike01T411,<br>EU-Strike01T402,<br>EU-Strike02T401,<br>EU-Strike02T411,<br>EU-Tank05T104N,<br>EU-Tank05T104S,<br>EU-Tank05T106,<br>EU-Tank05T116 |
| FGFACILITY        | All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.                     | NA  |

**The following conditions apply to: FG-Azo**

**DESCRIPTION:** The AZO pigment manufacturing process, including associated tanks and other equipment servicing red & yellow pigment processing and strike tanks.

**Emission Units:** EU-Strike03T401, EU-Strike03T411, EU-Strike03T402, EU-Strike03T412, EU-Weigh02, EU-RsnCrusher, EU-RedSlryTnk

**POLLUTION CONTROL EQUIPMENT:**

Absolute Filter ID #:03F3020, Caustic Scrubber ID #:03S7010, 03S7110

**I. EMISSION LIMITS**

| Pollutant                   | Limit   | Time Period/<br>Operating<br>Scenario | Equipment   | Testing /<br>Monitoring<br>Method | Underlying<br>Applicable<br>Requirements |
|-----------------------------|---|---------------------------------------|---|-----------------------------------|--|
| 1. PM                       | 0.10 pound per 1,000 pounds of exhaust gases, calculated on a dry gas basis | Test protocol*                        | Equipment in FG-Azo exhausting to SV-Stack01                | GC 13                             | R 336.1331                               |
| 2. Beta-naphthylamine (BNA) | 0.33 µg/m <sup>3</sup> A, 1   | Test protocol*                        | Equipment in FG-Azo exhausting to SV-Stack01                | GC 13                             | R 336.1225                               |
| 3. Hydrogen chloride (HCl)  | 3.88 µg/m <sup>3</sup> A, 1   | Test protocol*                        | Equipment in FG-Azo exhausting to SV-Stack01                | GC 13                             | R 336.1225                               |
| 4. Hydrogen chloride (HCl)  | 0.52 µg/m <sup>3</sup> A, 1   | Test protocol*                        | Equipment in FG-Azo exhausting to SV-Stack02                | GC 13                             | R 336.1225                               |
| 5. Visible Emissions        | 0% opacity <sup>B</sup>   | 6-minute average                      | Equipment in FG-AZO exhausting to SV-Stack01 and SV-Stack02 | SC VI.3                           | R 336.1301                               |

<sup>A</sup> Corrected to 70 degrees F and 29.92 inches Hg  
<sup>B</sup> Except for uncombined water vapor  
\* Test protocol shall specify averaging time

**II. MATERIAL LIMITS**

| Material                           | Limit  | Time Period /<br>Operating<br>Scenario                                       | Equipment | Testing /<br>Monitoring<br>Method | Underlying<br>Applicable<br>Requirements |
|------------------------------------|--|--|-----------|-----------------------------------|--|
| 1. Red Pigment                     | 12,500,000 lbs pigment processed through the strike tanks per year | 12-month rolling time period as determined at the end of each calendar month | FG-Azo    | SC VI.4                           | R 336.1224, R 336.1702(a)                |
| 2. Yellow Pigment                  | 18,500,000 lbs pigment processed through the strike tanks per year | 12-month rolling time period as determined at the end of each calendar month | FG-Azo    | SC VI.5                           | R 336.1224, R 336.1702(a)                |
| 3. BNA content of tobias acid used | 0.1% by weight <sup>1</sup>  | Instantaneous  | FG-Azo    | SC VI.2                           | R 336.1224, R 336.1225                   |

**III. PROCESS/OPERATIONAL RESTRICTIONS**

1. Whenever the 3,3'-dichlorobenzidine (DCB) content for any batch of diarylide yellow product exceeds 0.5% by weight, the permittee shall immediately shutdown all process equipment used in producing yellow toner. Operation of this equipment shall not recommence unless approval has been granted by the Air Quality Division. Such approval shall be granted only if the applicant has demonstrated to the satisfaction of the Air Quality Division that the cause of this occurrence has been identified and that processes have been implemented to prevent any such further occurrence.<sup>1</sup> **(R 336.1224, R 336.1225)**
2. The permittee shall dispose of empty tobias acid bags and empty color containers by placing them into a container inside the building before ultimate disposal.<sup>1</sup> **(R 336.1224, R 336.1225)**
3. The permittee shall not operate FG-Azo unless an amended malfunction abatement plan (MAP) as described in Rule 911(2), for FG-Azo, has been submitted within 60 days of permit issuance, is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the AQD District Supervisor. The permittee shall submit any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 45 days of submittal, the amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1910, R 336.1911)**

**IV. DESIGN/EQUIPMENT PARAMETERS**

1. The permittee shall equip and maintain each scrubber in FG-Azo with a liquid flow indicator and a malfunction alarm system. **(R 336.1910)**
2. The permittee shall equip and maintain absolute filter (ID # 03F3020) with a pressure sensor with an audio alarm that sounds when the pressure drop is outside of the range specified in the MAP. **(R 336.1910)**
3. The permittee shall not operate the equipment in the table below unless the associated control device is installed, maintained, and operated in a satisfactory manner:

|    | <b>Equipment:</b>   | <b>Control Device</b>           | <b>Stack ID#</b> |
|----|---|---------------------------------|------------------|
| a. | All tanks in Feed Tank Group A,<br>All tanks in Feed Tank Group B,<br>All tanks in Feed Tank Group C<br>EU-RsnCrusher, EU-Weigh02 | Caustic Scrubber (ID # 03S7010) | SV-Stack01       |
| b. | Strike tank 03T401, Strike tank 03T411,<br>Strike tank 03T402, Strike tank 03T412,<br>EU-RedSlryTnk                               | Caustic Scrubber (ID # 03S7110) | SV-Stack02       |

Satisfactory operation includes maintaining operating parameters within the ranges specified in the MAP. **(R 336.1331, R 336.1910)**

4. The permittee shall not operate tank ID # 03T302 as a tobias acid dissolver vessel unless the absolute filter (ID # 03F3020) is installed, maintained, and operated in a satisfactory manner. Satisfactory operation includes maintaining operating parameters within the ranges specified in the malfunction abatement plan. **(R 336.1224, R 336.1225, R 336.1910)**
5. The permittee shall not handle tobias acid in EU-Weigh02 unless the absolute filter (ID # 03F3020) is installed, maintained, and operated in a satisfactory manner. Satisfactory operation includes maintaining operating parameters within the ranges specified in the malfunction abatement plan. **(R 336.1225, R 336.1331, R 336.1910)**

6. The permittee shall not operate strike tanks (ID #s 03T401, 03T411, 03T402, 03T412) unless the caustic scrubber (ID # 03S7110) is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the scrubber includes maintaining the liquid flowrate and the pH within the ranges specified in the approved MAP. **(R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**
7. The permittee shall charge raw materials to FG-AZO in a manner that minimizes fugitive air contaminant emissions. **(R 336.1331, R 336.1702(a))**
8. The permittee shall label all equipment with permanent labels that correspond with the AQD permit and MAP. Labelling shall be completed within 60 days of permit issuance. **(R 336.1201(3))**

#### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

#### **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall verify the DCB content of diarylide yellow product from FG-Azo by testing at owner's expense, in accordance with Department requirements, on a quarterly basis. The permittee shall keep a record of the results of the testing and make the record available to the AQD upon request. The permittee shall perform four consecutive quarterly readings of the DCB content of diarylide yellow product. After successful completion of the four consecutive quarterly readings, the permittee may request an alternative monitoring schedule. Any request for an alternative monitoring schedule shall be submitted to the AQD District Supervisor for approval.<sup>1</sup> **(R 336.1225)**
2. The permittee shall obtain from its suppliers of tobas acid the results of the supplier's analysis of the BNA content of the tobas acid. The permittee shall keep a record of the data received from suppliers and shall make the record available to the AQD upon request. If requested by the AQD, the permittee shall also verify the supplier's analytical data concerning the BNA content of tobas acid by analyzing one lot of tobas acid.<sup>1</sup> **(R 336.1225)**
3. The permittee shall monitor and record, in a satisfactory manner, the following operating parameters as specified in the malfunction abatement plan (MAP) at the frequency specified in the MAP:
  - a. Liquid flowrate and pH for the caustic scrubber (ID # 03S7010)
  - b. Liquid flowrate and pH for the caustic scrubber (ID # 03S7110)
  - c. Pressure drop across the absolute filter (ID # 03F3020)The permittee shall keep these records on file at the facility and make them available to the AQD upon request. **(R 336.1910)**
4. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period records of the amount of Red Pigment processed through the strike tanks in FG-Azo. The permittee shall keep all records on file at the facility and make them available to the AQD upon request. **(R 336.1224, R 336.1702(a))**
5. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period records of the amount of Yellow Pigment processed through the strike tanks in FG-Azo. The permittee shall keep all records on file at the facility and make them available to the AQD upon request. **(R 336.1224, R 336.1702(a))**

**VII. REPORTING**

1. Whenever the DCB content for any batch of diarylide yellow product exceeds 0.1% by weight, the permittee shall immediately notify the AQD District Supervisor, and within 30 days submit the following to the AQD District Supervisor<sup>1</sup>:
    - a. A written report identifying the cause of the high concentration of DCB<sup>1</sup>; and
    - b. A program, acceptable to the AQD District Supervisor, outlining procedures to be implemented to prevent further such occurrences.<sup>1</sup>
- (R 336.1224, R 336.1225)**

**VIII. STACK/VENT RESTRICTIONS**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

| <b>Stack &amp; Vent ID</b> | <b>Maximum Exhaust Diameter/Dimensions (inches)</b> | <b>Minimum Height Above Ground (feet)</b> | <b>Underlying Applicable Requirements</b> |
|----------------------------|---|---|---|
| 1. SV-Stack01              | Not restricted                                      | 65  | R 336.1225,<br>40 CFR 52.21(c)&(d)        |
| 2. SV-Stack02              | Not restricted                                      | 65  | R 336.1225,<br>40 CFR 52.21(c)&(d)        |

**IX. OTHER REQUIREMENTS**

NA

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**The following conditions apply to: FG-Main**

**DESCRIPTION:** The MAIN pigment manufacturing process, including associated tanks and other equipment servicing red & yellow pigment processing and strike tanks.

**Emission Units:** EU-Weigh01, EU-Weigh03, EU-Strike01T401, EU-Strike01T411, EU-Strike01T402, EU-Strike02T401, EU-Strike02T411, EU-Tank05T104N, EU-Tank05T104S, EU-Tank05T106, EU-Tank05T116

**POLLUTION CONTROL EQUIPMENT:**

Air Filters: 02F7010 (coarse filter), 02AF3020 (absolute filter) Caustic scrubber ID #s:02S7010, 02S7110

**I. EMISSION LIMITS**

| Pollutant                                       | Limit   | Time Period/<br>Operating<br>Scenario | Equipment  | Testing /<br>Monitoring<br>Method | Underlying<br>Applicable<br>Requirements |
|---|---|---------------------------------------|--|-----------------------------------|--|
| 1. PM   | 0.10 pound per 1,000 pounds of exhaust gases, calculated on a dry gas basis | Test Protocol*                        | Equipment in FG-Main exhausting to SV-Stack09 and SV-Stack10 | GC 13                             | R 336.1331                               |
| 2. 3-amino-naphthalene-2,7 disulfonic acid      | 0.4 µg/m <sup>3</sup> A,1   | Test Protocol*                        | FG-Main  | GC 13                             | R 336.1225                               |
| 3. 1-amino-naphthalene-2-sulfonic acid          | 0.4 µg/m <sup>3</sup> A,1   | Test Protocol*                        | FG-Main  | GC 13                             | R 336.1225                               |
| 4. 2-naphthylamine-3,6-disulfonic acid          | 0.4 µg/m <sup>3</sup> A,1   | Test Protocol*                        | FG-Main  | GC 13                             | R 336.1225                               |
| 5. 2-naphthylamine-6-sulfonic acid, sodium salt | 0.4 µg/m <sup>3</sup> A,1   | Test Protocol*                        | FG-Main  | GC 13                             | R 336.1225                               |
| 6. Beta-naphthylamine (BNA)                     | 0.33 µg/m <sup>3</sup> A,1  | Test Protocol*                        | FG-Main  | GC 13                             | R 336.1225                               |
| 7. Benzene sulfonic acid                        | 0.4 µg/m <sup>3</sup> A,1   | Test Protocol*                        | FG-Main  | GC 13                             | R 336.1225                               |
| 8. 3,3'-Dichlorobenzidine (DCB)                 | 0.01 µg/m <sup>3</sup> A,1  | Test Protocol*                        | FG-Main  | GC 13                             | R 336.1225                               |
| 9. Dichlorobiphenyl                             | 0.2 µg/m <sup>3</sup> A,1   | Test Protocol*                        | FG-Main  | GC 13                             | R 336.1225                               |
| 10. Dimethoxybenzidine (DMB)                    | 0.01 µg/m <sup>3</sup> A,1  | Test Protocol*                        | FG-Main  | GC 13                             | R 336.1225                               |
| 11. Hydrogen chloride (HCl)                     | 0.26 lb per hour <sup>1</sup>   | Test Protocol*                        | Equipment in FG-Main exhausting to Scrubber ID # 02S7010     | GC 13                             | R 336.1225                               |
| 12. HCl   | 0.37 lb per hour <sup>1</sup>   | Test Protocol*                        | Equipment in FG-Main exhausting to Scrubber ID # 02S7110     | GC 13                             | R 336.1225                               |
| 13. Sulfamic acid                               | 0.16 mg/m <sup>3</sup> A,1  | Test Protocol*                        | FG-Main  | GC 13                             | R 336.1225                               |
| 14. Visible Emissions                           | 0% opacity <sup>B</sup>   | 6-minute average                      | Equipment in FG-Main exhausting to SV-Stack09 and SV-Stack10 | SC VI.3                           | R 336.1301                               |

<sup>A</sup> Corrected to 70 degrees F and 29.92 inches Hg

<sup>B</sup> Except for uncombined water vapor

\* Test Protocol shall specify averaging time.

**II. MATERIAL LIMITS**

| Material                           | Limit   | Time Period / Operating Scenario   | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|------------------------------------|---|--|-----------|-----------------------------|------------------------------------|
| 1. Red pigment                     | 5,000,000 lbs pigment processed through the strike tanks per year | 12-month rolling time period as determined at the end of each calendar month | FG-Main   | SC VI.4                     | R 336.1224, R 336.1702(a)          |
| 2. BNA content of tobias acid used | 0.1% by weight <sup>1</sup>                                       | At any time  | FG-Main   | SC VI.2                     | R 336.1224, R 336.1225             |

**III. PROCESS/OPERATIONAL RESTRICTIONS**

- Whenever the 3,3'-dichlorobenzidine (DCB) content for any batch of diarylide yellow pigment exceeds 0.5% by weight, the permittee shall immediately shutdown all process equipment used in producing yellow pigment. Operation of this equipment shall not recommence unless approval has been granted by the Air Quality Division. Such approval shall be granted only if the applicant has demonstrated to the satisfaction of the Air Quality Division that the cause of this occurrence has been identified and that processes have been implemented to prevent any such further occurrence.<sup>1</sup> (R 336.1224, R 336.1225)
- The permittee shall dispose of empty tobias acid bags and empty color containers by placing them into containers inside the building before ultimate disposal.<sup>1</sup> (R 336.1224, R 336.1225)
- The permittee shall not operate FG-Main unless an amended malfunction abatement plan (MAP) as described in Rule 911(2), for FG-Main, has been submitted within 60 days of permit issuance, is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the AQD District Supervisor. The permittee shall submit any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 45 days of submittal, the amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. (R 336.1910, R 336.1911)

**IV. DESIGN/EQUIPMENT PARAMETERS**

- The permittee shall not operate the equipment in the table below unless the associated control device is installed, maintained, and operated in a satisfactory manner:

|    | Equipment:   | Control Device(s)               | Stack ID # |
|----|--|---------------------------------|------------|
| a. | All tanks in Feed Tank Group E, EU-Weigh01, EU-Weigh03   | Filter (ID # 02F7010)           | SV-Stack10 |
| b. | All tanks in Feed Tank Group D, All tanks in Feed Tank Group E, EU-Tank05T104N, EU-Tank05T104S, EU-Tank05T106, EU-Tank05T116, EU-Weigh01, EU-Weigh03 | Caustic scrubber (ID # 02S7010) | SV-Stack10 |
| c. | Strike Tank 01T401, Strike Tank 01T411, Strike Tank 01T421, Strike Tank 02T401, Strike Tank 02T411   | Caustic scrubber (ID # 02S7110) | SV-Stack09 |

Satisfactory operation includes maintaining operating parameters within the ranges specified in the MAP. (R 336.1331, R 336.1910)

2. The permittee shall not operate tank ID # 02T302 as a tobias acid dissolver vessel unless the absolute filter (ID # 02AF3020) is installed, maintained, and operated in a satisfactory manner. **(R 336.1224, R 336.1225, R 336.1910)**
3. The permittee shall charge raw materials to FG-Main in a manner that minimizes fugitive air contaminant emissions. **(R 336.1331, R 336.1702(a))**
4. The permittee shall equip and maintain the caustic scrubbers (ID #s 02S7010, 02S7110) with liquid flow indication systems. **(R 336.1910)**
5. The permittee shall label all equipment with permanent labels that correspond with the AQD permit and MAP. Labelling shall be completed within 60 days of permit issuance. **(R 336.1201(3))**

#### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

#### **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall verify the DCB content of diarylide yellow product from FG-Main by testing at owner's expense, in accordance with Department requirements, on a quarterly basis. The permittee shall keep a record of the results of the testing and make the record available to the AQD upon request. The permittee shall perform four consecutive quarterly readings of the DCB content of diarylide yellow product. After successful completion of the four consecutive quarterly readings, the permittee may request an alternative monitoring schedule. Any request for an alternative monitoring schedule shall be submitted to the AQD District Supervisor for approval.<sup>1</sup> **(R 336.1225)**
2. The permittee shall obtain from its suppliers of tobias acid the results of the supplier's analysis of the BNA content of the tobias acid. The permittee shall keep a record of the data received from suppliers and shall make the record available to the AQD upon request. If requested by the AQD, the permittee shall also verify the supplier's analytical data concerning the BNA content of tobias acid by analyzing one lot of tobias acid.<sup>1</sup> **(R 336.1225)**
3. The permittee shall monitor and record, in a satisfactory manner, the following operating parameters as specified in the malfunction abatement plan (MAP) at the frequency specified in the MAP:
  - a. Liquid flowrate and pH for the caustic scrubber (ID # 02S7010)
  - b. Liquid flowrate and pH for the caustic scrubber (ID # 02S7110)
  - c. Pressure drop across the absolute filter (ID # 02AF3020)
  - d. Pressure drop across the coarse filter (ID # 02F7010)The permittee shall keep these records on file at the facility and make them available to the AQD upon request. **(R 336.1910)**
4. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period records of the amount of Red Pigment processed through strike tanks in FG-Main. The permittee shall keep all records on file at the facility and make them available to the AQD upon request. **(R 336.1224, R 336.1702(a))**

**VII. REPORTING**

1. Whenever the DCB content for any diarylide yellow batch exceeds 0.1% by weight, the permittee shall immediately notify the AQD District Supervisor, and within 30 days submit all of the following to the AQD District Supervisor.<sup>1</sup>
    - a. A written report identifying the cause of the high concentration of DCB;<sup>1</sup>
    - b. A program, acceptable to the AQD District Supervisor, outlining procedures to be implemented to prevent further such occurrences.<sup>1</sup>
- (R 336.1224, R 336.1225)**

**VIII. STACK/VENT RESTRICTIONS**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

| <b>Stack &amp; Vent ID</b>   | <b>Maximum Exhaust Diameter/Dimensions (inches)</b> | <b>Minimum Height Above Ground (feet)</b> | <b>Underlying Applicable Requirements</b> |
|--|---|---|---|
| 1. SV-Stack09*   | Not restricted                                      | Not restricted                            | NA  |
| 2. SV-Stack10  | 24  | 77  | R 336.1225,<br>40 CFR 52.21(c)&(d)        |
| * Not required to discharge exhaust gases unobstructed vertically upwards. |   |   |   |

**IX. OTHER REQUIREMENTS**

NA

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**The following conditions apply Source-Wide to: FGFACILITY**

**DESCRIPTION:** All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.

**I. EMISSION LIMITS**

| <b>Pollutant</b>       | <b>Limit</b>     | <b>Time Period / Operating Scenario</b>                                      | <b>Equipment</b> | <b>Testing / Monitoring Method</b> | <b>Underlying Applicable Requirements</b> |
|------------------------|------------------|--|------------------|------------------------------------|---|
| 1. Aggregate HAPs      | Less than 25 tpy | 12-month rolling time period as determined at the end of each calendar month | FGFACILITY       | SC VI.1                            | R 336.1205(1)                             |
| 2. Each individual HAP | Less than 10 tpy | 12-month rolling time period as determined at the end of each calendar month | FGFACILITY       | SC VI.1                            | R 336.1205(1)                             |

**II. MATERIAL LIMITS**

No additional requirements

**III. PROCESS/OPERATIONAL RESTRICTIONS**

No additional requirements

**IV. DESIGN/EQUIPMENT PARAMETERS**

No additional requirements

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

No additional requirements

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period individual HAP and total HAP emission calculations to demonstrate compliance with the limits in SC I.1 and SC I.2. These calculations shall be based upon emission test results or emission factors; and records of production rate, hours of operation, or fuel usage, as appropriate. The permittee shall keep all records on file and make them available to the AQD upon request. **(R 336.1205(1))**

**VII. REPORTING**

No additional requirements

**VIII. STACK/VENT RESTRICTIONS**

No additional requirements

**IX. OTHER REQUIREMENTS**

No additional requirements

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).