# Ashland Inc. - Ashland Research Center Potential to Emit (Tons/Rol. Month Period) Active Sources

| Source Description | Air Quality Permit Number | Location (Building) | PM | PM10 | PM2.5 | CO | NOX | SOX | VOC | Methanol[6] | Methylene Chloride[6] | Isopropyl Alcohol | Ethanol | Hexane[6] | Heptane | Ethyl Acetate | THF | Benzene[6,7] | Ethyl Benzene[6] | Toluene[6,7] | Xylene[6] | Total HAPs | Basis for Emissions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B001-1 25.106 MMBTU/hr Boiler[1] | APC-2007/0168; Issued 7/16/2008 | 8502 | | 0.537 | | 4.09097 | 4.119 | 0.2207 | 0.353 | | | | | | | | | | | | | 0.00 | Manufacturers emission rates and max firing rates; 8760 hours for natural gas, 48 for #2 fuel oil |
| B002-1 25.106 MMBTU/hr Boiler[1] | APC-2007/0169: Issued 7/16/2008 | 8502 | | 0.537 | | 4.09097 | 4.119 | 0.2207 | 0.353 | | | | | | | | | | | | | 0.00 | Manufacturers emission rates and max firing rates; 8760 hours for natural gas, 48 for #2 fuel oil |
| R&D - Cellulose Cutter[2] | APC-2006/0016; Issued 4/5/2007 | 8150 | | 0.009 | | | | | | | | | | | | | | | | | | 0.00 | based on 8760 hours per year after controls (federally enforceable) |
| Aquarius Powder Blending & Dust Collector[2] | Apc-2006/0180; Issued 2/25/2009 | 8159 | 1.3 | | | | | | | | | | | | | | | | | | | 0.00 | based on 8760 hours per year after controls (federally enforceable) |
| Research and Development Activities - Two lb hood exhaust systems - No APC Equipment[3] | APC-95/0402 (Amend. 4); ISSUED 8/4/2006 | 8136 / 8136A | | | | | | | 6.57 | 2.63 | | | | 0.49 | | | | | | 0.33 | | 3.45 | From letter to DNREC dated 1/14/2015 re: NM status: 1.5 max ave lbs/hr (calculated from historical max emissions of 269.1 lbs/month x month/22 days x day/8 hr) equals - 1.5 lb/hr x 8760 hr/yr x lb/2000 = 6.57 TPY PTE for B8136/B8136A and using the same calc for B8100 with 14% emission factor = 5.41 TPY PTE for B1800 |
| Research and Development Activities - Three lab hood exhaust systems - No APC Equipment[3] | APC-95/0546 (Amend. 6); ISSUED 12/29/2000 | 8100 | | | | | | | 5.41 | | | | | | | | | | | | | | |
| R&D GMP Spray Dryer (before carbon beds) | APC-2016/0039-Operation (VOC RACT); Issued 10/29/2015 | 8162 | | | | | | | 8.51 | 2.45 | 12.85 | 1.22 | 1.45 | | | 5.5 | 8.51 | | | | | 12.85 | See DNREC Letter dated June 10, 2016 (Maximum run rate and hours at 100% each solvent) |
| R&D R&D Spray Dryer (before carbon beds) | APC-2013/0083; Issued 4/16/2014 | 8162 | | | | | | | 8.51 | 2.45 | 12.85 | 1.22 | 1.45 | | | 5.5 | 8.51 | | | | | 12.85 | See DNREC Letter dated June 10, 2016 (Maximum run rate and hours at 100% each solvent) |
| SD-1 Micro (before carbon beds) | APC-2013/0083; Issued 4/16/2014 | 8162 | | | | | | | 4.82 | 4.82 | 4.82 | 4.82 | 4.82 | | | 4.82 | 4.82 | | | | | 4.82 | See DNREC Letter dated June 10, 2016 (Maximum run rate and hours at 100% each solvent) |
| MP-1 (before carbon beds) | APC-2013/0083; Issued 4/16/2014 | 8162 | | | | | | | 2.81 | | | 2.81 | 2.81 | | | | | | | | | 0.00 | See DNREC Letter dated June 10, 2016 (Maximum run rate and hours at 100% each solvent) |
| Registered Dust Collector - Lab Coat I | To Be Identified; Submitted to Dover and New Castle Offices 7/2/2014 | 8162 | 0.1 | | | | | | | | | | | | | | | | | | | | Peak load after controls for 8760 hours |
| Registered Dust Collector - Lab Coat IIX | To Be Identified; Submitted to Dover and New Castle Offices 7/2/2014 | 8162 | 0.1 | | | | | | | | | | | | | | | | | | | | Peak load after controls for 8760 hours |
| Registered Dust Collector - R&D Operation | To Be Identified; Submitted to Dover and New Castle Offices 7/2/2014 | 8162 | 3.2 | | | | | | | | | | | | | | | | | | | | Peak load after controls for 8760 hours |
| R&D Support/Maintenance - Cold Solvent Degreaser[5] | APC-2015/0081-Construction/Operation (VOC RACT) | 8165 | | | | | | | 2.37 | | | | | | | | | | | | | 0.00 | From Degreaser Regulation 1102 application AP-42 emission factors for degeasers and degreaser specs for 8760 hours |
| Gasoline Dispensing | Exempt | | | | | | | | 0.44 | | | | | | | | | 0.0044 | 0.0044 | 0.0044 | 0.0044 | 0.01 | |
| Registered Dust Collector | APC-2016/0132-Registration | B8136 | 1 | | | | | | | | | | | | | | | | | | | | Peak load after controls for 8760 hours |
| Buchi Spray Dryer | APC-2016/0149-Registration | B8162 | | | | | | | 1.70 | 0.489 | 3.14 | | 0.29 | | | | 1.701 | | | | | 3.14 | Maximum run rate and hours at 100% each solvent |
| Mini Glatt | Pending Registration Submittal | B8162 | | | | | | | 0.555 | 0.555 | | 0.555 | 0.555 | | | | | | | | | 0.56 | Maximum run rate and hours at 100% each solvent |
| | | TOTAL EMISSIONS = | 5.70 | 1.08 | 0.00 | 8.18 | 8.24 | 0.44 | 42.40 | 13.39 | 33.66 | 10.63 | 11.38 | 0.49 | 0.00 | 15.82 | 23.54 | 0.00 | 0.00 | 0.33 | 0.00 | 37.67 | |

Notes:
(1) The Potential To Emit (PTE) for the boilers is based on the manufacturers or AP-42 emission factors (Stack Test results were below manufacturers), max firing rate, and 8760 hoursfor natural gas, 48 hours for #2 Fuel Oil (Boiler MACT)
(2) PTE is based on 8760 hours after baghouse (federally enforceable)
(3) There are no emission limits for HAPs in these permits. PTE is based on historical maximum chemical quantity using Department accepted emission factors for 8760 hours.
(4) PTE is based on manufacturers run rate information, fixed solvent list and associated properties, inherent restricted hours due to equipment and processing
(5) PTE is based on AP-42 emission calculations for degreasing operations and SK Model 250 degreasor specifications
(6) These compounds are listed HAPs.
(7) Assume benzene, tolulene, ethyl benzene and xylene make up 1% each of the total VOC emissions.