

US EPA ARCHIVE DOCUMENT

| | A | B |
|----|--------------------------------------|---|
| 1 | Source Description | |
| 2 | | |
| 3 | Phase II ID No. | 1010 |
| 4 | EPA ID No. | TXD008099079 |
| 5 | Facility Name | Rhodia (Rhône-Poulenc) |
| 6 | Facility Location | |
| 7 | City | Houston |
| 8 | State | TX |
| 9 | Unit ID Name/No. | Regeneration Unit No. 2 |
| 10 | Other Sister Facilities | None |
| 11 | Combustor | Sulfuric Acid Regeneration Furnace |
| 12 | Combustor Characteristics | Spent acid & sulfur as feedstock; HWs & NG for heat input |
| 13 | Capacity (MMBtu/hr) | 200 |
| 14 | Soot Blowing | |
| 15 | APCS | WHB/QT/CC/WESP/DT/CONV/SO3ABS/ME |
| 16 | APCS Characteristics | Waste heat boiler (firetube), quench tower, contact cooler, wet ESP, drying tower, SO2/SO3 converter, SO3 absorber, and mist eliminator |
| 17 | Hazardous Wastes | Liq, sludge |
| 18 | Haz Waste Description | Sludges, and other HW liquids |
| 19 | Supplemental Fuel | Natural gas |
| 20 | | |
| 21 | Stack Characteristics | |
| 22 | Diameter (ft) | 6.0 |
| 23 | Height (ft) | |
| 24 | Gas Velocity (ft/sec) | 28.8 |
| 25 | Gas Temperature (°F) | 140 |
| 26 | | |
| 27 | Permitting Status | Tier I metals |
| 28 | HWC Burn Status (Date if Terminated) | |

| | B | C |
|----|-------------------------|---|
| 1 | Cond Description | |
| 2 | | |
| 3 | 1010C1 | (Mode A) |
| 4 | | |
| 5 | Report Name/Date | Biennial RCRA Trial Burn Test Report - Rhone-Poulenc, Inc., Regeneration Unit No. 2; dated December 1996 |
| 6 | Report Prepar | Roy F. Weston, Inc. |
| 7 | Testing Firm | Roy F. Weston, Inc. |
| 8 | Testing Dates | September 9-16, 1996 |
| 9 | Cond Dates | Sep-96 |
| 10 | Cond Description | Trial burn; max cond for feedrates, comb temperature |
| 11 | Content | PM, CO, HCl/Cl ₂ ; ash, Cl feed analysis |
| 12 | | |
| 13 | | |
| 14 | 1010C2 | (Mode B) |
| 15 | | |
| 16 | Report Name/Date | Biennial RCRA Trial Burn Test Report - Rhone-Poulenc, Inc., Regeneration Unit No. 2; dated December 1996 |
| 17 | Report Prepar | Roy F. Weston, Inc. |
| 18 | Testing Firm | Roy F. Weston, Inc. |
| 19 | Testing Dates | September 9-16, 1996 |
| 20 | Cond Dates | Sep-96 |
| 21 | Cond Description | Trial burn; max cond for feedrates; min comb temp and O ₂ |
| 22 | Content | PM, CO, HCl/Cl ₂ , DRE; POHC, ash, Cl feed analysis |

| | B | C | D | E | F | G | H | I | J | K | L | M |
|----|----------------------------|----------------------|---------|-------|---|-----------|---|-----------|---|-----------|---|-----------|
| 1 | Stack Gas Emissions | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | Comments | Units | 7% O2 | | | | | | | | |
| 5 | 1010C1 | | | | | R1 | | R2 | | R3 | | Cond Avg |
| 6 | | | | | | | | | | | | |
| 7 | Sampling Train | (PM, HCl/Cl2) | | | | | | | | | | |
| 8 | Stack Gas Flowrate | | dscfm | | | 47380 | | 46950 | | 43920 | | 46083 |
| 9 | O2 | | % | | | 5.7 | | 5.5 | | 5.1 | | 5.4 |
| 10 | Moisture | | % | | | 0.4 | | 0.4 | | 0.8 | | 0.5 |
| 11 | Temperature | | °F | | | 136 | | 137 | | 141 | | 138.0 |
| 12 | | | | | | | | | | | | |
| 13 | CO (RA) | | ppmv | n | | 13.6 | | 11.1 | | 31.9 | | |
| 14 | HC (RA) | | ppmv | n | | 0.1 | | 0.1 | | 0.1 | | |
| 15 | NOx | | ppmv | n | | 46.3 | | 50.8 | | 50.1 | | |
| 16 | HCl | | ppmv | n | | 1.35 | | 1.18 | | 1.8 | | |
| 17 | Cl2 | | ppmv | n | | 0.26 | | 0.27 | | 0.29 | | |
| 18 | | | | | | | | | | | | |
| 19 | PM | | gr/dscf | y | | 0.0009 | | 0.0006 | | 0.0004 | | 0.0006 |
| 20 | CO (RA) | | ppmv | y | | 12 | | 7 | | 7 | | 8.7 |
| 21 | CO (MHRA) | | ppmv | y | | 12 | | 7.2 | | 7.1 | | 8.8 |
| 22 | HC (RA) | | ppmv | y | | 0.09 | | 0.09 | | 0.09 | | 0.09 |
| 23 | NOx | | ppmv | y | | 42.4 | | 45.9 | | 44.1 | | 44.1 |
| 24 | HCl | | ppmv | y | | 1.2 | | 1.1 | | 1.6 | | 1.3 |
| 25 | Cl2 | | ppmv | y | | 0.2 | | 0.2 | | 0.3 | | 0.2 |
| 26 | Total Chlorine | | ppmv | y | | 1.7 | | 1.6 | | 2.1 | | 1.8 |
| 27 | | | | | | | | | | | | |
| 28 | 1010C2 | | | | | R1 | | R2 | | R3 | | Cond Avg |
| 29 | | | | | | | | | | | | |
| 30 | Sampling Train | PM, HCl/Cl2 | | | | | | | | | | |
| 31 | Stack Gas Flowrate | | dscfm | | | 43,320 | | 41,780 | | 44,410 | | 43170.0 |
| 32 | O2 | | % | | | 5.9 | | 5 | | 6.6 | | 5.8 |
| 33 | Moisture | | % | | | 0.6 | | 0.5 | | 0.8 | | 0.63 |
| 34 | Temperature | | °F | | | 141 | | 139 | | 137 | | 139 |
| 35 | | | | | | | | | | | | |
| 36 | HC (RA) | | ppmv | n | | 0.9 | | 0 | | 0 | | |
| 37 | NOx | | ppmv | n | | 31 | | 47.7 | | 29.8 | | |
| 38 | HCl | | ppmv | n | | 2.8 | | 2.3 | | 2.2 | | |
| 39 | Cl2 | | ppmv | n | | 0.3 | | 0.3 | | 0.3 | | |
| 40 | | | | | | | | | | | | |
| 41 | PM | | gr/dscf | y | | 0.0010 | | 0.0001 | | 0.0004 | | 0.0005 |
| 42 | CO (RA) | | ppmv | y | | 17 | | 17 | | 19 | | 17.7 |
| 43 | CO (MHRA) | | ppmv | y | | 16.6 | | 17.7 | | 19 | | 17.8 |
| 44 | HC (RA) | | ppmv | y | | 0.83 | | 0.00 | | 0.00 | | 0.3 |
| 45 | NOx | | ppmv | y | | 28.74 | | 41.74 | | 28.97 | | 33.2 |
| 46 | HCl | | ppmv | y | | 2.6 | | 2.0 | | 2.2 | | 2.2 |
| 47 | Cl2 | | ppmv | y | | 0.3 | | 0.3 | | 0.3 | | 0.3 |
| 48 | Total Chlorine | | ppmv | y | | 3.1 | | 2.6 | | 2.7 | | 2.8 |
| 49 | | | | | | | | | | | | |
| 50 | POHC DRE | Carbon Tetrachloride | | | | | | | | | | |
| 51 | Feedrate | | lb/hr | | | 516 | | 516 | | 516 | | |
| 52 | Emission Rate | | | | | | | | | | | min of 6 |
| 53 | DRE | | % | | | 99.999995 | | 99.999995 | | 99.999995 | | 99.999995 |
| 54 | POHC DRE | Chlorobenzene | | | | | | | | | | |
| 55 | Feedrate | | lb/hr | | | 577 | | 796 | | 1775 | | |
| 56 | Emission Rate | | | | | | | | | | | max of 6 |
| 57 | DRE | | % | | | 99.999996 | | 99.999997 | | 99.999999 | | 99.999999 |

| | B | C | D | E | F | G | H | I | J | K | L | |
|----|-----------------------------------|---|---|---|----------------------|-------|---------------------------|---|---------------------|-----|-------------------------|-----|
| 1 | Feedstreams | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | 1010C1 | | | | | | | | | | | |
| 6 | Feed Class 2 | | | | Cond Avg HW Waste | 29440 | Cond Avg RM Spent acid | | Cond Avg Nat gas | 42 | Cond Avg Total Total | 200 |
| 7 | Feedstream Description | | | | | | | | | | | |
| 8 | Feed Rate | | | | | | | | | | | |
| 9 | Feed Rate | | | | | | | | | | | |
| 10 | Thermal Feedrate | | | | | | | | | | | |
| 11 | Viscosity | | | | | | | | | | | |
| 12 | Ash | | | | | | | | | | | |
| 13 | Chlorine | | | | | | | | | | | |
| 14 | Mercury | | | | | | | | | | | |
| 15 | Lead | | | | | | | | | | | |
| 16 | Cadmium | | | | | | | | | | | |
| 17 | Arsenic | | | | | | | | | | | |
| 18 | Beryllium | | | | | | | | | | | |
| 19 | Chromium | | | | | | | | | | | |
| 20 | Nickel | | | | | | | | | | | |
| 21 | Antimony | | | | | | | | | | | |
| 22 | Se | | | | | | | | | | | |
| 23 | | | | | | | | | | | | |
| 24 | Stack Gas Flowrate | | | | | | | | | | | |
| 25 | O2 | | | | | | | | | | | |
| 26 | | | | | | | | | | | | |
| 27 | Estimated Firing Rate | | | | | | | | | | | 228 |
| 28 | | | | | | | | | | | | |
| 29 | Feedrate MTEC Calculations | | | | | | | | | | | |
| 30 | Ash | | | | | | | | | | | |
| 31 | Chlorine | | | | | | | | | | | |
| 32 | Mercury | | | | | | | | | | | |
| 33 | Lead | | | | | | | | | | | |
| 34 | Cadmium | | | | | | | | | | | |
| 35 | Arsenic | | | | | | | | | | | |
| 36 | Beryllium | | | | | | | | | | | |
| 37 | Chromium | | | | | | | | | | | |
| 38 | Nickel | | | | | | | | | | | |
| 39 | Antimony | | | | | | | | | | | |
| 40 | Se | | | | | | | | | | | |
| 41 | SVM | | | | | | | | | | | |
| 42 | LVM | | | | | | | | | | | |
| 43 | | | | | | | | | | | | |
| 44 | | | | | | | | | | | | |
| 45 | 1010C2 | | | | | | | | | | | |
| 46 | Feed Class 2 | | | | Cond Avg HW Waste | 27000 | Cond Avg RM Spent acid | | Cond Avg Nat gas | 144 | Cond Avg Total Total | 150 |
| 47 | Feedstream Description | | | | | | | | | | | |
| 48 | Feed Rate | | | | | | | | | | | |
| 49 | Feed Rate | | | | | | | | | | | |
| 50 | Thermal Feedrate | | | | | | | | | | | |
| 51 | Viscosity | | | | | | | | | | | |
| 52 | Ash | | | | | | | | | | | |
| 53 | Chlorine | | | | | | | | | | | |
| 54 | Mercury | | | | | | | | | | | |
| 55 | Lead | | | | | | | | | | | |
| 56 | Cadmium | | | | | | | | | | | |
| 57 | Arsenic | | | | | | | | | | | |

| | B | C | D | E | F | G | H | I | J | K | L |
|----|-----------------------------------|---|----------|---|-------|---|---|---|---|---|---------|
| 58 | Beryllium | | g/hr | | | | | | | | |
| 59 | Chromium | | g/hr | | | | | | | | |
| 60 | Antimony | | g/hr | | | | | | | | |
| 61 | | | | | | | | | | | |
| 62 | Stack Gas Flowrate | | dscfm | | 43170 | | | | | | |
| 63 | O2 | | % | | 5.8 | | | | | | |
| 64 | | | | | | | | | | | |
| 65 | Estimated Firing Rate | | MMBtu/hr | | | | | | | | 208 |
| 66 | | | | | | | | | | | |
| 67 | <i>Feedrate MTEC Calculations</i> | | | | | | | | | | |
| 68 | Ash | | mg/dscm | | | | | | | | |
| 69 | Chlorine | | µg/dscm | | | | | | | | |
| 70 | Mercury | | µg/dscm | | | | | | | | |
| 71 | Lead | | µg/dscm | | | | | | | | |
| 72 | Cadmium | | µg/dscm | | | | | | | | |
| 73 | Arsenic | | µg/dscm | | | | | | | | |
| 74 | Beryllium | | µg/dscm | | | | | | | | |
| 75 | Chromium | | µg/dscm | | | | | | | | |
| 76 | Antimony | | µg/dscm | | | | | | | | |
| 77 | SVM | | µg/dscm | | | | | | | | |
| 78 | LVM | | µg/dscm | | | | | | | | 5717077 |

| | A | B | C |
|----|----------------------------|--------|----------|
| 1 | Process Information | | |
| 2 | | | |
| 3 | 1010C1 | Units | Cond Avg |
| 4 | | | |
| 5 | Comb Chamber Temperature | F | 2093 |
| 6 | Comb Chamber O2 | % | 0.8 |
| 7 | Comb Chamber Pressure | in H2O | -1.93 |
| 8 | Comb Gas Velocity | acfm | 186200 |
| 9 | | | |
| 10 | 1010C2 | | |
| 11 | | | |
| 12 | Comb Chamber Temperature | F | 1815 |
| 13 | Comb Chamber O2 | % | 1.83 |
| 14 | Comb Chamber Pressure | in H2O | -2.4 |
| 15 | Comb Gas Velocity | acfm | 170800 |

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|----|--------------------------------|------------------------|-------------|-------|--------|----------|-------|--------|--------|--------|-------|-------|--------|--------|
| 1 | PCDD/PCDF | | | | | | | | | | | | | |
| 2 | Facility Name and ID: | Rhodia (Rhone-Poulenc) | Houston, TX | | | | | | | | | | | |
| 3 | Condition ID: | 1010C2 | | | | | | | | | | | | |
| 4 | Condition/Test Date: | September 9-16, 1996 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |
| 7 | | I-TEF | | | Run 2 | | | | Run 3 | | | | Run 4 | |
| 8 | | Wght Fact | | Total | Total | TEQ | Total | TEQ | Total | TEQ | Total | Total | Total | TEQ |
| 9 | | | | | 1/2 ND | @ 1/2 ND | | 1/2 ND | 1/2 ND | 1/2 ND | | | 1/2 ND | 1/2 ND |
| 10 | Detected in sample volume (ng) | | | | | | | | | | | | | |
| 11 | 2,3,7,8-TCDD | 1 | nd | | | | nd | | | | | | | |
| 12 | Total TCDD | 0 | nd | | | | nd | | | | | | | |
| 13 | 1,2,3,7,8-PCDD | 0.5 | nd | | | | nd | | | | | | | |
| 14 | Total PCDD | 0 | nd | | | | nd | | | | | | | |
| 15 | 1,2,3,4,7,8-HxCDD | 0.1 | nd | | | | nd | | | | | | | |
| 16 | 1,2,3,6,7,8-HxCDD | 0.1 | nd | | | | nd | | | | | | | |
| 17 | 1,2,3,7,8,9-HxCDD | 0.1 | nd | | | | nd | | | | | | | |
| 18 | Total HxCDD | 0 | nd | | | | nd | | | | | | | |
| 19 | 1,2,3,4,6,7,8-HpCDD | 0.01 | nd | | | | nd | | | | | | | |
| 20 | Total HpCDD | 0 | nd | | | | nd | | | | | | | |
| 21 | OCDD | 0.001 | | | | | nd | | | | | | | |
| 22 | 2,3,7,8-TCDF | 0.1 | nd | | | | nd | | | | | | | |
| 23 | Total TCDF | 0 | nd | | | | nd | | | | | | | |
| 24 | 1,2,3,7,8-PCDF | 0.05 | nd | | | | nd | | | | | | | |
| 25 | 2,3,4,7,8-PCDF | 0.5 | nd | | | | nd | | | | | | | |
| 26 | Total PCDF | 0 | nd | | | | nd | | | | | | | |
| 27 | 1,2,3,4,7,8-HxCDF | 0.1 | nd | | | | nd | | | | | | | |
| 28 | 1,2,3,6,7,8-HxCDF | 0.1 | nd | | | | nd | | | | | | | |
| 29 | 2,3,4,6,7,8-HxCDF | 0.1 | nd | | | | nd | | | | | | | |
| 30 | 1,2,3,7,8,9-HxCDF | 0.1 | nd | | | | nd | | | | | | | |
| 31 | Total HxCDF | 0 | nd | | | | nd | | | | | | | |
| 32 | 1,2,3,4,6,7,8-HpCDF | 0.01 | nd | | | | nd | | | | | | | |
| 33 | 1,2,3,4,7,8,9-HpCDF | 0.01 | nd | | | | nd | | | | | | | |
| 34 | Total HpCDF | 0 | nd | | | | nd | | | | | | | |
| 35 | OCDF | 0.001 | nd | | | | nd | | | | | | | |
| 36 | | | | | | | | | | | | | | |
| 37 | Gas sample volume (dscf) | | | | | | | | | | | | | |
| 38 | O2 (%) | | | | | | | | | | | | | |
| 39 | | | | | | | | | | | | | | |
| 40 | PCDD/PCDF (ng in sample) | | | | | | | | | | | | | |
| 41 | PCDD/PCDF (ng/dscm @ 7% O2) | | | | | | | | | | | | | |
| 42 | | | | | | | | | | | | | | |
| 43 | TEQ Cond Avg | 0.0462 | | | | | | | | | | | | |

taken from 1997 Incineration Conference paper by Dickerson from Rhodia