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Facility Name: **Gould Electronics Inc-Powerdex Division**

Application Number: **02-2280**

Date: **January 27, 1999**

### **GENERAL PERMIT CONDITIONS**

#### **TERMINATION OF PERMIT TO INSTALL**

Substantial construction for installation must take place within 18 months of the effective date of this permit. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

#### **NOTICE OF INSPECTION**

The Director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above-named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, or to examine records or reports pertaining to the construction, modification or installation of the source(s) of environmental pollutants identified within this permit.

#### **CONSTRUCTION OF NEW SOURCES**

The proposed source(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

If the construction of the proposed source(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of Ohio Administrative Code (OAC) Rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as

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an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet applicable standards.

### **PERMIT TO INSTALL FEE**

In accordance with Ohio Revised Code 3745.11, the specified Permit to Install fee must be remitted within 30 days of the effective date of this permit to install.

### **PUBLIC DISCLOSURE**

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC Rule 3745-49-03.

### **APPLICABILITY**

This Permit to Install is applicable only to the contaminant sources identified. Separate application must be made to the Director for the installation or modification of any other contaminant sources.

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### **BEST AVAILABLE TECHNOLOGY**

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

### **PERMIT TO OPERATE APPLICATION**

A Permit to Operate application must be submitted to the appropriate field office for each air contaminant source in this Permit to Install. In accordance with OAC Rule 3745-35-02, the application shall be filed no later than thirty days after commencement of operation.

### **SOURCE OPERATION AFTER COMPLETION OF CONSTRUCTION**

This facility is permitted to operate each source described by this permit to install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws and regulations.

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<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal &amp; OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
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AIR EMISSION SUMMARY

The air contaminant emissions units listed below comprise the Permit to Install for **Gould Electronics Inc-Powerdex Division** located in **Lake** County. The emissions units listed below shall not exceed the emission limits/control requirements contained in the table. This condition in no way limits the applicability of any other state or federal regulations. Additionally, this condition does not limit the applicability of additional special terms and conditions of this permit.

3745-17-11

<u>Ohio EPA Source Number</u>	<u>Source Identification Description</u>	<u>BAT Determination</u>	<u>Applicable Federal &amp; OAC Rules</u>
P001 (Mod)	Continuous battery electrode film caster with automatic spray coating booth and catalytic oxidizer VOC emissions control system	Use of catalytic oxidizer control system with 90 percent control efficiency to maintain OC, VOC, and methanol emissions at or below specified limits; use of only non-PCR solvents in coatings applied.	3745-31-05

3745-21-09

(B) (6)

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<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal &amp; OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
	1 from this emissions unit shall not exceed 0.53 pound/hour and 2.33 TPY			
Permit Allowable Mass Emissions and/or Control/Usage Requirements	See Additional Special Terms and Conditions			
a.				
Total OC and VOC emissions from this unit, collectively, shall not exceed 11.0 pounds/hour and 48.2 TPY.	Particulate emissions from this unit shall not exceed 0.55 pound/hour and 2.41 TPY.			
b.				
Emissions of methano				

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SUMMARY

TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons/Year</u>
Total OCs and VOCs (collectively)	48.2
Methanol	2.33
Particulates	2.41

**RECORD(S) RETENTION AND AVAILABILITY**

All records required by this Permit to Install shall be retained on file for a period of not less than three years unless otherwise indicated by Ohio Environmental Protection Agency. All records shall be made available to the Director, or any representative of the Director, for review during normal business hours.

**REPORTING REQUIREMENTS**

Unless otherwise specified, reports required by the Permit to Install need only be submitted to **Ohio EPA, Northeast District Office, 2110 E. Aurora Road, Twinsburg, OH 44087.**

**MALFUNCTION/ABATEMENT**

In accordance with OAC RULE 3745-15-06, any malfunction of the source(s) or associated air pollution control system(s) shall be reported immediately to the **Ohio EPA, Northeast District Office, 2110 E. Aurora Road, Twinsburg, OH 44087.**

Except as provided by OAC Rule 3745-15-06(A)(3), scheduled maintenance of air pollution control equipment that requires the shutdown or bypassing of air pollution control system(s) must be accompanied by the shutdown of the associated air pollution sources.

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### **AIR POLLUTION NUISANCES PROHIBITED**

The air contaminant source(s) identified in this permit may not cause a public nuisance in violation of OAC Rule 3745-15-07.

### **CONSTRUCTION COMPLIANCE CERTIFICATION**

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

### **ADDITIONAL SPECIAL TERMS AND CONDITIONS**

#### **Introduction**

This PTI is a modification of PTI No. 02-0687 for emissions unit P001. The modification is required in order to add an automatic spray coating booth to the continuous electrode caster line covered by the original PTI. The addition of this spray coating booth further requires that this emissions unit now be permitted as a synthetic minor source due to the fact that the uncontrolled potential emissions of methanol, a HAP and one of the constituents of the solvent base of the coating material to be used, exceeds the major source limit of 10 TPY under Title V permitting requirements. This PTI will require that the total emissions of methanol, as well as all other VOC and organic compounds (OCs), be collectively controlled by a catalytic oxidizer/incinerator with a control efficiency of at least 90 percent.

#### **A. Applicable Emissions Limitations**

1. Total emissions of both organic compounds (specifically, acetone) and volatile organic compounds (specifically, ethanol, methanol, & isopropanol) from this emissions unit shall, collectively, not exceed 11.0 pounds per hour and 48.2 TPY.
2. The emissions of methanol, a HAP, from this emissions unit shall not exceed 0.53 lb/hr and 2.33 TPY. The annual emissions limitation for

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methanol shall be measured on a rolling 12 cumulative basis and shall be considered a federally enforceable restriction under the terms of this permit.

3. Emissions of particulates from the spray coating booth shall not exceed 0.55 lb/hr and 2.41 TPY.

## **B. Additional Terms and Conditions**

1. Only non-photochemically reactive solvents shall be used in the coatings employed in the spray coating booth portion of this emissions unit.
2. A catalytic oxidizer (catalytic incinerator) shall be employed to capture and destroy (control) OC and VOC emissions from this emissions unit. Per OAC rule 3745-21-09(B)(6), this catalytic oxidizer shall provide not less than eighty one (81) percent reduction, by weight, in the overall OC and VOC emissions from this coating operation and have a control efficiency of not less than ninety (90) percent.
3. To ensure federal enforceability of the annual emissions limit of 2.33 tons for methanol from this emissions unit, during the first 12 calendar months of operation following issuance of this permit, the permittee shall not exceed the monthly levels of methanol containing coating/solvent input to the oxidizer specified in the following table:

<u>Months</u>	<u>Maximum Allowable Cumulative Coating/Solvent Input to Oxidizer (Gallons)</u>
1	12118
1-2	24236
1-3	36354
1-4	48472
1-5	60590
1-6	72708
1-7	84826
1-8	96944
1-9	109062
1-10	121180
1-11	133298
1-12	145416

Note: At maximum methanol content of 0.32 lb/gal. of coating/solvent and ninety (90) percent minimum allowable control efficiency of oxidizer control, 145416 gallons coating/solvent per year equals 4653.3

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pounds/year of methanol emitted or 2.33 TPY as follows:

$$145416 \text{ gals/yr} \times 0.32 \text{ lb/gal} \times 0.10 = 4653.3 \text{ lbs/yr} \times 1/2000 = 2.33 \text{ TPY.}$$

### **C. Operational Restrictions**

1. The catalytic oxidizer control system shall be operated at all times that this emissions unit, or any portion thereof, is operating.
2. There shall be no more than 16.6 gallons per hour solvent loading in this emissions unit; i.e., the cumulative total volume of solvent employed in the continuous caster (acetone in the electrode slurry) and/or the spray coating booth (coating solvent including methanol) during any one hour, in combination, shall not exceed 16.6 gallons.
3. The temperature of the gas stream both before and after the catalyst bed shall remain within the range of 540 to 650 degrees Fahrenheit and 550 to 1150 degrees Fahrenheit, respectively, at all times that this emissions unit is in operation, so as to maximize the control efficiency of the oxidizer.
4. The catalytic oxidation control unit shall be equipped with the following operational and safety interlocks to control the temperature across the catalyst:
  - a. minimum catalyst inlet gas temperature;
  - b. maximum catalyst outlet gas temperature; and,
  - c. minimum exhaust air flow before the oxidizer.
5. The filters on the spray coating booth shall be cleaned, replaced, and/or otherwise maintained in accordance with manufacturers recommendations so as to maintain the highest possible particulate capture efficiency at all times that this equipment is operating.

### **D. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall operate and maintain continuous temperature monitors and recorder(s) which measure and record(s) the temperature

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immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitors and recorder(s) shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

2. The permittee shall collect and record the following information for each day for the control equipment:
  - a. a log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit;
  - b. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature of the exhaust gases during the most recent performance test that demonstrated the emissions unit was in compliance; and,
  - c. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference during the most recent performance test that demonstrated the emissions unit was in compliance.
  
3. The permittee shall collect and record the following information for the purpose of determining the hourly and annual OC (acetone) emissions rate from the continuous casting portion of this emissions unit:
  - a. the volume of electrode slurry processed in the continuous electrode caster, in gallons and pounds;
  - b. the acetone (OC) content of this slurry, in pounds per gallon;
  - c. the hours of operation of the continuous caster on a daily basis; and,
  - d. the calculated, controlled acetone emissions rate for this portion of the emissions unit, in pounds per hour and tons per year. The

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controlled acetone (OC) emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance.

4. The permittee shall collect and record the following information for the purpose of determining the hourly and annual VOC emissions from the spray coating booth portion of this emissions unit:
  - a. the name and identification number of each coating, as applied;
  - b. the VOC content of each coating, as applied, in pounds per gallon;
  - c. the number of gallons of each coating employed;
  - d. the name and identification of each cleanup material employed;
  - e. the number of gallons of each cleanup material employed;
  - f. the VOC content of each cleanup material, in pounds per gallon;
  - g. the hours of operation of the spray coating booth portion of this emissions unit on a daily and monthly basis;
  - h. the total uncontrolled VOC emissions from all coatings and cleanup materials employed, in pounds or tons; and,
  - i. the calculated, controlled VOC emission rate for all coatings and cleanup materials, in pounds per hour and tons per year. The controlled VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance.
  
5. The permittee shall collect and record the following information for the purpose of determining the hourly and annual methanol emissions from the spray coating booth portion of this emissions unit:
  - a. the name and identification number of each coating, as applied;
  - b. the methanol content of each coating, as applied, in pounds per gallon;
  - c. the number of gallons of each coating employed;
  - d. the name and identification of each cleanup material employed;

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- e. the number of gallons of each cleanup material employed;
  - f. the methanol content of each cleanup material, in pounds per gallon;
  - g. the hours of operation of the spray coating booth portion of this emissions unit on a daily and monthly basis;
  - h. the total uncontrolled methanol emissions from all coatings and cleanup materials employed, in pounds or tons; and,
  - i. the calculated, controlled methanol emission rate for all coatings and cleanup materials, in pounds per hour and tons per year. The controlled methanol emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance.
6. The permittee shall maintain records indicating the solids content, in pounds per gallon, of each coating used in the spray coating booth in order to determine both the uncontrolled and controlled particulate emissions rate from this emissions unit.
  7. The permittee shall collect and record, on an hourly basis, information regarding the total volumes of electrode slurry and/or spray coating material employed in this emissions unit for the purpose of determining compliance with the operational restriction limiting hourly solvent loading for this process line.

#### **E. Reporting Requirements**

1. The permittee shall submit quarterly summaries of the following records:
  - a. a log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit;
  - b. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature of the exhaust gases immediately before the catalyst bed was more than 50 degrees Fahrenheit below the average temperature of the exhaust gases

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during the most recent performance test that demonstrated the emissions unit was in compliance; and,

- c. all 3-hour blocks of time (when the emissions unit was in operation) during which the average temperature difference across the catalyst bed was less than 80 percent of the average temperature difference of the bed during the most recent performance test that demonstrated the emissions unit was in compliance.

These quarterly reports shall be submitted by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarters.

2. The permittee shall also submit annual reports which specify the total acetone (OC), VOC, methanol, and particulate emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.
3. The permittee shall submit deviation (excursion) reports which identify all exceedances of the following emissions limitations and/or operational restrictions stated in this permit:
  - a. the hourly controlled emissions for acetone and/or combined VOCs on a collective basis;
  - b. the hourly controlled emissions of methanol;
  - c. the rolling 12 month cumulative total emissions of methanol and, for the first 12 months of operation following issuance of this permit, all exceedances of the monthly, maximum allowable methanol emissions levels; and,
  - d. the hourly solvent loading restriction for the entire emissions unit.

These deviation reports shall be submitted to the Northeast District Office within 45 days after the exceedance occurs and shall include information on the date of the exceedance and the steps taken to prevent a reoccurrence of the event.

## **F. Testing Requirements**

### **1. Emission Limitation**

Total OC and VOC emissions, collectively, shall not exceed 11.0 lbs/hr and 48.2 TPY

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#### Applicable Compliance Method

Compliance shall be based on calculations using operations data for the acetone content of electrode casting slurry, the VOC content of the coating material, the hours of operation of each portion of this emissions unit, and the stated control efficiency of the catalytic oxidizer as stated by manufacturer. If required pursuant to OAC 3745-15-04, the permittee shall demonstrate compliance with both the OC and VOC emissions limits of this permit by means of physical testing of the effluent from this emissions unit in accordance with testing procedures listed in 40 CFR Part 60, "Standards of Performance for New Stationary Sources", Appendix A, Method 24.

#### 2. Emissions Limitation

Methanol emissions shall not exceed 0.53 lb/hr and 2.33 TPY

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#### Applicable Compliance Method

Compliance shall be based on calculations using operations data for the methanol content of the coating material, the hours of operation of each portion of this emissions unit, and the stated control efficiency of the catalytic oxidizer as stated by manufacturer. If required pursuant to OAC 3745-15-04, the permittee shall demonstrate compliance with the methanol emissions limits of this permit by means of physical testing of the effluent from this emissions unit in accordance with testing procedures listed in 40 CFR Part 60, "Standards of Performance for New Stationary Sources", Appendix A, Method 18.

### 3. Emissions Limitation

Particulate emissions shall not exceed 0.55 lb/hr and 2.41 TPY.

#### Applicable Compliance Method

Compliance shall be based on calculations using operations data for the solids content of the coating material, the hours of operation of each portion of this emissions unit, an assumed over-spray value of 50 percent, and an assumed control efficiency of 90 percent for the filters employed by the spray booth. If required pursuant to OAC 3745-15-04, the permittee shall demonstrate compliance with the particulate emissions limits of this permit by means of physical testing of the effluent from this emissions unit in accordance with testing procedures listed in 40 CFR Part 60, "Standards of Performance for New Stationary Sources", Appendix A, Method 5, and in OAC 3745-17-03(B)(7).