



Missouri Department of Natural Resources  
Air Pollution Control Program

## PART 70 PERMIT TO OPERATE

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to operate the air contaminant source(s) described below, in accordance with the laws, rules, and conditions set forth herein.

**Operating Permit Number:** OP2010-039C  
**Expiration Date:** May 2, 2015  
**Installation ID:** 147-0023  
**Project Number:** 2012-02-031

**Installation Name and Address.**

Kawasaki Motors Manufacturing Corporation  
28147 Business Highway 71  
Maryville, MO 64468  
Nodaway County

**Parent Company's Name and Address**

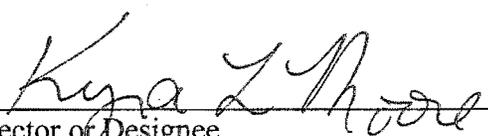
Kawasaki Heavy Industries Ltd.  
1-1 Kawasaki-Cho  
Akashi, Japan

**Installation Description:**

Kawasaki Motors builds engines ranging from 6.0 horsepower (hp) up to 35.0 hp. Companies primarily use these engines in walk-behind lawn mowers, riding lawn mowers and all-terrain vehicles. This version of the operating permit is the result of a significant modification. The modification removes the emission limitations associated with hydrogen fluoride based on additional information, research and flux manufacturers' affirmations. Amendments and modifications to operating permits do not adjust the expiration date. Therefore, the original expiration date for the operating permit remains unchanged.

AUG 24 2012

Effective Date

  
Director of Designee

Department of Natural Resources

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## I. Installation Description and Equipment Listing

Kawasaki Motors Manufacturing Corporation operates a gasoline engine manufacturing installation in Maryville, Missouri. Kawasaki Motors builds engines ranging from 6.0 horsepower (hp) up to 35.0 hp. Companies primarily use these engines in walk-behind lawn mowers, riding lawn mowers and all-terrain vehicles.

Kawasaki Motors is a Part 70 State Installation because the actual emissions of several pollutants exceed the 100 ton per year threshold.

Kawasaki has had several permitting actions take place over a relatively short period. Production has expanded to meet the demand and need for new engines. Although several projects involve machining, the parts made serve different purposes, and so, the permitting authority does not consider these projects a single phase.

Reported Air Pollutant Emissions, tons per year								
Year	Particulate Matter ≤ Ten Microns (PM-10)	Particulate Matter ≤ 2.5 Microns (PM-2.5)	Sulfur Oxides (SO <sub>x</sub> )	Nitrogen Oxides (NO <sub>x</sub> )	Volatile Organic Compounds (VOC)	Carbon Monoxide (CO)	Lead (Pb)	Hazardous Air Pollutants (HAPs)
2008	8.90	4.67	0.18	19.50	150.47	84.25	0.00	1.17
2007	7.96	4.83	0.14	21.35	118.54	62.88	0.00	0.00
2006	9.87	9.64	0.14	20.73	108.43	62.39	0.00	0.00
2005	9.17	3.22	0.13	12.58	95.12	57.54	0.00	0.83
2004	4.02	1.83	0.84	5.99	62.42	30.47	0.00	0.55

### EMISSION UNITS WITH LIMITATIONS

The following equipment emit air pollutants and have unit-specific emission limitations.

Emission Unit #	Description of Emission Unit
AET1	ASSEMBLY ENGINE TESTING LINE 1
AET10	ASSEMBLY ENGINE TESTING LINE 10
AET12	ASSEMBLY ENGINE TESTING LINE 12
AET2	ASSEMBLY ENGINE TESTING LINE 2
AET3	ASSEMBLY ENGINE TESTING LINE 3
AET4	ASSEMBLY ENGINE TESTING LINE 4
AET5	ASSEMBLY ENGINE TESTING LINE 5
AET6	ASSEMBLY ENGINE TESTING LINE 6
AET7	ASSEMBLY ENGINE TESTING LINE 7
AET8	ASSEMBLY ENGINE TESTING LINE 8
AET9	ASSEMBLY ENGINE TESTING LINE 9
AETT	ASSEMBLY ENGINE TESTING TRAINING LINE

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<b>Emission Unit #</b>	<b>Description of Emission Unit</b>
ASTC	ANECHOIC SOUND TEST CHAMBER
DCF01	ALUMINUM ALLOY #1 MELTING FURNACE
DCF03	ALUMINUM ALLOY #2 MELTING FURNACE
DCF05	ALUMINUM ALLOY #3 MELTING FURNACE
DCF07	ALUMINUM ALLOY #4 MELTING FURNACE
DCF09	ALUMINUM ALLOY #5 MELTING FURNACE
DCF11	ALUMINUM ALLOY #6 MELTING FURNACE
DCF13	ALUMINUM ALLOY #7 MELTING FURNACE
DCF15	ALUMINUM ALLOY #8 MELTING FURNACE
DCF18	ALUMINUM ALLOY #9 MELTING FURNACE
DE1	DIESEL ENGINE FOR FIRE SPRINKLER SYSTEM
DET1	DYNO/ENDURANCE ENGINE TEST CELL 1
DET3	DYNO/ENDURANCE ENGINE TESTING CELL 3
DET5	DYNO ENDURANCE ENGINE TESTING CELL 5
ETC	ENDURANCE TEST CHAMBER
ETF1	ENDURANCE TESTING FACILITY-ENGINE EXHAUST
ETF2	ENDURANCE TESTING FACILITY CELL #2-ENGINE EXHAUST
ETF3	ENDURANCE TESTING FACILITY CELL #3-ENGINE EXHAUST
ETF4	ENDURANCE TESTING FACILITY CELL #4-ENGINE EXHAUST
ETF5	ENDURANCE TESTING FACILITY CELL #5-ENGINE EXHAUST
ETF6	ENDURANCE TESTING FACILITY CELL #6-ENGINE EXHAUST
ETF7	ENDURANCE TESTING FACILITY CELL #7-ENGINE EXHAUST
ETF8	ENDURANCE TESTING FACILITY CELL #8-ENGINE EXHAUST
ETF9	ENDURANCE TESTING FACILITY CELL #9-ENGINE EXHAUST
ETF10	ENDURANCE TESTING FACILITY CELL #10-ENGINE EXHAUST
ETF11	ENDURANCE TESTING FACILITY CELL #11-ENGINE EXHAUST
ETF12	ENDURANCE TESTING FACILITY CELL #12-ENGINE EXHAUST
ETF13	ENDURANCE TESTING FACILITY CELL #13-ENGINE EXHAUST
PE10	PAINTING HANGER BURN OFF FURNACE #1
PE10B	PAINTING HANGER BURN OFF FURNACE #2
PE10C	PAINTING HANGER BURN OFF FURNACE #3
PE4	PRE-TREATMENT WASHER HEATERS - FUEL USE
PE5	PAINTING PRE-TREATMENT DRY OFF OVEN
PE6	PAINTING CURE OVEN - PAINT USE
SH1	SPACE HEATERS
PE1	ALKALINE CLEANING BATH FOR PARTS TO BE PAINTED
PE2	ZINC PHOSPHATE BATH - PAINT PRETREATMENT
PE3	PAINTING WASHER NICKEL AND MANGANESE COMPOUNDS
PE9	PAINTING WET PAINT BOOTH
EG01	EMERGENCY GENERATOR

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### EMISSION UNITS WITHOUT LIMITATIONS

The following equipment does not have unit specific limitations.

#### 2008 EIQ

#### Designator

#### Description of Emission Unit

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ALF3	ASSEMBLY LINES ANTIFREEZE USE
DCHTE14	DIE CASTING HEAT TREATING FURNACE
DCF02	#1 DIE CASTING MACHINE
DCF04	#2 DIE CASTING MACHINE
DCF06	#3 DIE CASTING MACHINE
DCF08	#4 DIE CASTING MACHINE
DCF10	#5 DIE CASTING MACHINE
DCF12	#6 DIE CASTING MACHINE
DCF14	#7 DIE CASTING MACHINE
DCF16	#8 DIE CASTING MACHINE
DEFT1	DIESEL FUEL TANK
DF1	DIESEL FUEL TANK – OUTSIDE
GS1	UNLEADED GAS FOR MAT. HANDLING & LAWN EQUIP.
GSPU1	UNLEADED GASOLINE STORAGE TANK-PRODUCTION USE
IM1	PLASTIC INJECTION MOLDING PROCESS - PP
IM2	PLASTIC INJECTION MOLDING PROCESS - PP
MAF1A	MACHINING HYDRAULIC OIL 32 STORAGE TANK
MFCE1	MISCELLANEOUS FUGITIVE CHEMICALS EMITTED - VOC'S
MFCE2	MISCELLANEOUS FUGITIVE CHEMICALS EMITTED - HAP'S
MMF	ALL MACHINING LINES - VOC USAGE
MOSF1	MOTOR OIL STORAGE TANK
MSF1A	MACHINING WAYLUBE 68 OIL STORAGE TANK
PE14	IMMERSION ELECTRODEPOSITION PAINTING OF METAL PARTS
PE7	POWDER PAINT BOOTH
PE8	PAINTING CURE OVEN AIRSEAL BLEED OFF
PST1	PROPANE STORAGE TANK
PW1	PARTS WASHERS - 1 IN OPERATION
T-ETF	ENDURANCE TESTING FACILITY-1000 GAL UNLEADED FUEL TANK
T-ETF2	ENDURANCE TESTING FACILITY - 1000 GAL UNLEADED FUEL TANK
WOSF1	WASTE OIL STORAGE TANKS (2 EACH)
WVISF1	WET VACUUM IMPREGNATION SYSTEM

## **DOCUMENTS INCORPORATED BY REFERENCE**

The following Missouri Department of Natural Resources Construction Permits have been incorporated by reference into this permit.<sup>1</sup>

- (1) 082008-007A This amendment removes the emission limitations associated with hydrogen fluoride based on additional information, research and flux manufacturers' affirmations.
- (2) 102009-004B This amendment removes the emission limitations associated with fluorides based on new information made available after the construction permit was issued and amended. There is no emission increase associated with this amendment.
- (3) 012010-003 Installation of a new paint bake-off oven and emergency generator.
- (4) 102009-004A Installation of a new die casting machine, new crankcase machining line and new cylinder head machining line.
- (5) 082008-007 The installation of a crankcase machining line #7 and a cylinder head machining line #8 that will emit Volatile Organic Compounds (VOCs) from the oils used (MMF). An aluminum die casting machine (DCF12) with a Maximum Hourly Design Rate (MHDR) of 0.435 tons of metal produced per hour and an aluminum alloy melting furnace (DCF11) with a natural gas MHDR of 2472 standard cubic feet per hour will be installed.
- (6) 092007-011 The installation of a crankcase machining line #9, an Assembly Engine Testing Line #12, seven (7) performance dynamometers, and five (5) endurance dynamometers. Gasoline combustion is the main source of emissions.
- (7) 062007-004 The use of Tier II EEE gasoline which is a low sulfur unleaded gasoline and the use of aviation gasoline (100LL) which contains lead (Pb) for the engine testing on Assembly Engine Testing (AET) lines #2, #6, #7 and #8 (AET2, AET6, AET7 and AET8) and the following ethanol fuel blends are requested for use E85, E20 and E10.
- (8) 032004-006 Installation of six machining lines, 0.85 MMBtu per hour cleaning furnace, and an engine assembly line for gasoline fueled, internal combustion engines.
- (9) 082003-011 Installation of an engine assembly line for gasoline fueled, internal combustion engines.
- (10) 062001-001A Installation of a wet vacuum impregnation system to seal porosities in aluminum parts.
- (11) 112000-010 Installation of two (2) engine assembly lines for building gasoline fueled engines. These assembly lines will be similar to the five (5) existing lines presently in operation at the Kawasaki Maryville plant.
- (12) 0699-024 Installation of an assembly line for building internal combustion engines and installation of an immersion electro deposition paint system for applying acrylic paint to metal parts.
- (13) 0598-012 Installation of a wet paint booth for painting steel and cast iron parts and a 1.2 MMBtu/hr process heater.
- (14) 0897-034 Installation of an assembly line for gasoline fueled engines ranging in size from 220 cc to 400 cc to an existing source.
- (15) 0797-005 Installation of four machining lines and six heating or ventilation units.
- (16) 0494-009 Construction of foundations, piping, and electrical conduit trenches of one used aluminum die casting machine; and installation of one machining process which consists of aluminum, steel and cast machining.
- (17) 0493-011 Installation of two (2) new aluminum die casting machines with melting furnaces.

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<sup>1</sup> Some construction permits were not incorporated by reference because they were superseded and thus voided.

- (18) 0193-001A Installation of a powder paint booth and a wet paint booth to paint aluminum and steel parts. It will include a ten stage phosphate washer, dry off and cure ovens, a paint burn-off oven and a waste treatment system.
- (19) 0193-001 Installation of a powder paint booth and a wet paint booth to paint aluminum and steel parts. It will include a ten stage phosphate washer, dry off and cure ovens, a paint burn-off oven and a waste treatment system.
- (20) 0791-001 A small engine assembly line, an aluminum scrap melting furnace, and an engine endurance test area.
- (21) 1190-004 Connecting rod machining line, drilling, grinding and tapping connecting rod. Injection molding of plastic engine cover using polypropylene or polyethylene on aluminum gasoline tank.

## II. Plant Wide Emission Limitations

The following requirements apply to all conditions in addition to any other requirements listed in the specific conditions, unless otherwise noted in the specific conditions.

### Monitoring:

The permittee shall calibrate, maintain and operate all instruments and control equipment according to the manufacturer's recommendations.

### Recordkeeping:

The permittee shall record all inspections and corrective actions on the appropriate forms.

### Reporting:

1. The permittee shall report any exceedance of any of the terms imposed by this permit, or any malfunction which could cause an exceedance any of the terms imposed by this permit, no later than ten (10) days after the exceedance or event causing the exceedance (unless otherwise specified in the specific condition), to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102.
2. The permittee shall submit an annual certification<sup>2</sup> that it is in compliance with all of the federally enforceable terms and conditions contained in this permit, including emissions limitations, standards, or work practices. All deviations and Part 64 exceedances and excursions must be included in the compliance certifications. These certifications shall be submitted annually by April 1<sup>st</sup>, unless the applicable requirement specifies more frequent submission. These certifications shall be submitted to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 901 North 5th Street, Kansas City, KS 66101.

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued.

<p style="text-align: center;"><b>Permit Condition PW001<sup>3</sup></b></p>
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<p style="text-align: center;">10 CSR 10-6.060 <i>Construction Permits Required</i>, Permit Number: 012010-003, Special Condition 2.B)</p>
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### Emission Limitation:

Kawasaki Motors Manufacturing Corp. shall emit less than 250 tons of Volatile Organic Compounds (VOCs) from the entire installation in any consecutive 12-month period<sup>4</sup>.

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<sup>2</sup> Refer to Section V. General Permit Requirements for more details.

<sup>3</sup> The permitting authority imposed conditions PW001 & PW002 on the permittee to avoid major source construction permitting. Removal of these conditions may result in the permittee being subject to major source construction permit requirements.

<sup>4</sup> The total of 12 monthly averages ending with the month of interest; or, when there are less than 12 monthly averages available, the total of the monthly arithmetic averages of the samples of the complete months available divided by 12. A new limit or change of limit initiates a new rolling average period.

**Recordkeeping:**

The permittee shall use Attachment E or its equivalent approved by the Air Pollution Control Program, to demonstrate compliance with this condition.

**Reporting:**

The permittee shall report any exceedance of this condition no later than twenty (20) days after the exceedance or event causing the exceedance, to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102

**Permit Condition PW002**

10 CSR 10-6.060 *Construction Permits Required*,  
Permit Number: 012010-003, Special Condition 2.A)

**Emission Limitation:**

Kawasaki Motors Manufacturing Corp. shall emit less than 250 tons of Carbon Monoxide (CO) from the entire installation in any consecutive 12-month period.

**Recordkeeping:**

The permittee shall use Attachment F or its equivalent approved by the Air Pollution Control Program, to demonstrate compliance with this condition.

**Reporting:**

The permittee shall report any exceedance of this condition no later than twenty (20) days after the exceedance or event causing the exceedance, to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102

**Permit Condition PW003**

10 CSR 10-6.060 *Construction Permits Required*,  
Permit Number: 012010-003, Special Condition 2.C)

**Emission Limitation:**

The permittee shall not emit any single HAP in excess of ten (10) tons per year, or all HAPs combined in excess of twenty-five (25) tons per year, from the entire installation in any consecutive 12-month period.

**Recordkeeping:**

The permittee shall use Attachment G, or its equivalent approved by the Department, to demonstrate compliance with this condition. The permittee shall maintain records of the Material Safety Data Sheets (MSDS) for all materials used at the installation.

**Permit Condition PW004**

10 CSR 10-6.060 *Construction Permits Required*,  
Permit Number: 082008-007A, Special Condition 2.E.

**Emission Limitation:**

The permittee shall maintain records of:

1. Material Safety Data Sheets (MSDS) for all materials used at the installation;
2. Flux manufacturer's declarations of flux fluorides binding to dross for all fluxes used (i.e. sf350, sf206 and COVERAL 777, refer to Attachment H); and,

3. Make all records available immediately to any Missouri Department of Natural Resources' personnel upon request.

**Permit Condition PW005**

10 CSR 10-6.060 *Construction Permits Required*,  
Permit Number: 112000-010, Special Condition 2.

**Operational Limitation/Equipment Specifications:**

If a continuing situation of demonstrated nuisance odors exists in violation of Restriction of Emission of odors, 10 CSR 10-3.090, the Director may require the permittee to submit a corrective action plan within ten (10) days adequate to timely and significantly mitigate the odors. The permittee shall implement any such plan immediately upon its approval by the Director. Failure to either submit or implement such a plan shall be a violation of the permit.

**Permit Condition PW006**

10 CSR 10-6.060 *Construction Permits Required*,  
Permit Number: 092007-011, Special Condition 2.

**Operational Limitation/Equipment Specifications:**

Screen Modeling Action Level (SMAL)

When considering using an alternative material that contains a HAP, the permittee must calculate the potential emissions for each individual HAP in the alternative material that has a SMAL available at [http://www.dnr.mo.gov/forms/NSR\\_SUPPL\\_INFO\\_PACKAGE.pdf](http://www.dnr.mo.gov/forms/NSR_SUPPL_INFO_PACKAGE.pdf). If the potential HAP emissions for the alternative HAP containing material is equal to or greater than the SMAL, then the permittee must seek approval from the Air Pollution Control Program before the use of the alternative material.

**Recordkeeping:**

The permittee must determine the potential emissions for each individual HAP in the alternative material consumed in the installation. Attachment K or equivalent forms approved by the Department shall be used to demonstrate compliance with this permit condition.

**Permit Condition PW007**

10 CSR 10-6.060 *Construction Permits Required*,  
Permit Number: 092005-001A, Special Condition 3.

**Operational Limitation/Equipment Specifications:**

Usage Restriction - Kawasaki Motors Manufacturing Corporation is no longer authorized to use Alodine 1000 (chromic acid mixture) at the installation.

### III. Emission Unit Specific Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued.

<b>Group 01 – Visible Emitters</b>		
Emission Unit	Description	Construction Date
AET1	Assembly Engine Testing Line 1	8/8/1990
AET2	Assembly Engine Testing Line 2	8/8/1990
AET3	Assembly Engine Testing Line 3	7/1/1991
AET4	Assembly Engine Testing Line 4	8/4/1997
AET5	Assembly Engine Testing Line 5	6/1/1999
AET6	Assembly Engine Testing Line 6	11/3/2000
AET7	Assembly Engine Testing Line 7	11/3/2000
AET8	Assembly Engine Testing Line 8	11/3/2003
AET9	Assembly Engine Testing Line 9	2/20/2004
AET10	Assembly Engine Testing Line 10	1/10/2005
AET12	Assembly Engine Testing Line 12	11/24/2007
AETT	Assembly Engine Testing Training Line	6/1/2006
ASTC	Anechoic Sound Test Chamber	4/3/2007
DET1	Dyno/Endurance Engine Test Cell 1	
DET3	Dyno/Endurance Engine Test Cell 3	
DET5	Dyno/Endurance Engine Test Cell 5	
ETC	Endurance Test Chamber	
ETF1	Endurance Testing Facility Cell - Engine Exhaust	
ETF2	Endurance Testing Facility Cell #2- Engine Exhaust	
ETF3	Endurance Testing Facility Cell #3- Engine Exhaust	
ETF4	Endurance Testing Facility Cell #4- Engine Exhaust	
ETF5	Endurance Testing Facility Cell #5- Engine Exhaust	
ETF6	Endurance Testing Facility Cell #6- Engine Exhaust	
ETF7	Endurance Testing Facility Cell #7- Engine Exhaust	
ETF8	Endurance Testing Facility Cell #8- Engine Exhaust	
ETF9	Endurance Testing Facility Cell #9- Engine Exhaust	
ETF10	Endurance Testing Facility Cell #10- Engine Exhaust	

<b>Group 01 – Visible Emitters</b>		
Emission Unit	Description	Construction Date
ETF11	Endurance Testing Facility Cell #11- Engine Exhaust	
ETF12	Endurance Testing Facility Cell #12- Engine Exhaust	
ETF13	Endurance Testing Facility Cell #13-Engine Exhaust	
PE10	Painting Hanger Burn Off Furnace #1	
PE10B	Painting Hanger Burn Off Furnace #2	
PE10C	Painting Hanger Burn Off Furnace #3	
PE4	Pre-treatment Washer Heaters – Fuel Use	
PE5	Painting Pre-treatment Dry Off Oven	
PE6	Painting Cure Oven – Paint Use	
SH1	Space Heaters	
DCHTE14	Die Casting Heat Treating Furnace	
	Die Casting Area 1 – North	
	Die Casting Area 1- Southwest	
	Die Casting Area 1 – South Middle	
	Die Casting Area 1 – Southeast	
	Die Casting Area 2 – North	
	Die Casting Area 2- Middle	
	Die Casting Area 2 – South	

<p><b>Permit Condition Group 01-001</b>          10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants</p>
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**Emission Limitation:**

The permittee shall not discharge into the atmosphere from this group any visible emissions in excess of twenty percent (20%).<sup>5</sup>

<p><b>Permit Condition Group 01-002</b>          10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds</p>
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**Emission Limitation:**

No person shall cause or permit the emission into the atmosphere gases containing more than five hundred parts per million by volume (500 ppmv) of sulfur dioxide.

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<sup>5</sup> Refer to *Core Requirement 10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants*, page 27, for monitoring, record keeping and reporting.

<b>Group 02 – Fuel Types</b>		
Emission Unit	Description	Construction Date
AET1	Assembly Engine Testing Line 1	8/8/1990
AET2	Assembly Engine Testing Line 2	8/8/1990
AET3	Assembly Engine Testing Line 3	7/1/1991
AET4	Assembly Engine Testing Line 4	8/4/1997
AET5	Assembly Engine Testing Line 5	6/1/1999
AET6	Assembly Engine Testing Line 6	11/3/2000
AET7	Assembly Engine Testing Line 7	11/3/2000
AET8	Assembly Engine Testing Line 8	11/3/2003
AET9	Assembly Engine Testing Line 9	2/20/2004
AET10	Assembly Engine Testing Line 10	1/10/2005
AET12	Assembly Engine Testing Line 12	11/24/2007
AETT	Assembly Engine Testing Training Line	6/1/2006
ASTC	Anechoic Sound Test Chamber	4/3/2007
DET1	Dyno/Endurance Engine Test Cell 1	
DET3	Dyno/Endurance Engine Test Cell 3	
DET5	Dyno/Endurance Engine Test Cell 5	
ETC	Endurance Test Chamber	
ETF1	Endurance Testing Facility Cell - Engine Exhaust	
ETF2	Endurance Testing Facility Cell #2- Engine Exhaust	
ETF3	Endurance Testing Facility Cell #3- Engine Exhaust	
ETF4	Endurance Testing Facility Cell #4- Engine Exhaust	
ETF5	Endurance Testing Facility Cell #5- Engine Exhaust	
ETF6	Endurance Testing Facility Cell #6- Engine Exhaust	
ETF7	Endurance Testing Facility Cell #7- Engine Exhaust	
ETF8	Endurance Testing Facility Cell #8- Engine Exhaust	
ETF9	Endurance Testing Facility Cell #9- Engine Exhaust	
ETF10	Endurance Testing Facility Cell #10- Engine Exhaust	
ETF11	Endurance Testing Facility Cell #11- Engine Exhaust	
ETF12	Endurance Testing Facility Cell #12- Engine Exhaust	
ETF13	Endurance Testing Facility Cell #13-Engine Exhaust	

**Permit Condition Group 02-001**

10 CSR 10-6.060 *Construction Permits Required*,  
 Permit Number: 092007-011, Special Condition 3.

**Operational Limitation/Equipment Specifications:**

The permittee shall combust only unleaded gasoline, aviation gasoline (100LL), Tier II gasoline or the following ethanol fuel blends E85, E20 and E10. Before fuels other than those listed above are used for engine testing the permittee shall seek approval from the Air Pollution Control Program.

<b>Group 03 – Unleaded Fuel</b>		
Emission Unit	Description	Construction Date
ASTC	Anechoic Sound Test Chamber	4/3/2007
DET1	Dyno/Endurance Engine Test Cell 1	
DET3	Dyno/Endurance Engine Test Cell 3	
DET5	Dyno/Endurance Engine Test Cell 5	
ETC	Endurance Test Chamber	
ETF1	Endurance Testing Facility Cell - Engine Exhaust	
ETF2	Endurance Testing Facility Cell #2- Engine Exhaust	
ETF3	Endurance Testing Facility Cell #3- Engine Exhaust	
ETF4	Endurance Testing Facility Cell #4- Engine Exhaust	
ETF5	Endurance Testing Facility Cell #5- Engine Exhaust	
ETF6	Endurance Testing Facility Cell #6- Engine Exhaust	
ETF7	Endurance Testing Facility Cell #7- Engine Exhaust	
ETF8	Endurance Testing Facility Cell #8- Engine Exhaust	
ETF9	Endurance Testing Facility Cell #9- Engine Exhaust	
ETF10	Endurance Testing Facility Cell #10- Engine Exhaust	
ETF11	Endurance Testing Facility Cell #11- Engine Exhaust	
ETF12	Endurance Testing Facility Cell #12- Engine Exhaust	
ETF13	Endurance Testing Facility Cell #13-Engine Exhaust	

**Permit Condition Group 03-001**

10 CSR 10-6.060 *Construction Permits Required*,  
 Permit Number: 092007-011, Special Condition 4.

**Operational Limitation/Equipment Specifications:**

The permittee shall not use leaded fuel in the dynamometer engine testing stations unless authorized and approved by the U.S. EPA. Based on a review of applicable federal regulations entitled Test Procedures for Testing Highway and Nonroad engines and a July 13, 2005 Final Rule (federal), unleaded gasoline {maximum organic lead 0.013 grams per liter} is required for dynamometer engine testing. See Table 1 of 40 CFR 1065.710 on page 40596 {also pages 28 to 44 of the July 13, 2005 Federal Register}.

Approval of any variance of these requirements must be obtained directly from the United States Environmental Protection Agency (U.S. EPA).

<b>Group 04 – Melting Furnaces</b>		
Description	Manufacturer	Construction Date
DCF13 - Aluminum Alloy #7 Melting Furnace	Lindberg/MPH	01/10/2005
DCF15 - Aluminum Alloy #8 Melting Furnace	Lindberg/MPH	05/01/2006

<b>Permit Condition Group 04-001</b> 10 CSR 10-6.400 Restriction of Particulate Matter from Industrial Processes
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**Emission Limitation:**

The permittee shall not emit particulate matter from these emission units in excess of the pounds per hour listed in the following table or at a concentration in the exhaust gases in excess of 0.30 grains per standard cubic foot.

Description	6.400 limit (lbs/hr)
DCF13 - Aluminum Alloy #7 Melting Furnace	667.5
DCF15 - Aluminum Alloy #8 Melting Furnace	667.5

<b>Emission Unit – DCF18</b>		
Description	Manufacturer	Construction Date
DCF18 - Aluminum Alloy #9 Melting Furnace	Lindberg/MPH	

<b>Permit Condition DCF18-001</b> 10 CSR 10-6.400 Restriction of Particulate Matter from Industrial Processes
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**Emission Limitation:**

The permittee shall not emit particulate matter from this emission unit in excess of 352.2 pounds per hour or at a concentration in the exhaust gases in excess of 0.30 grains per standard cubic foot.

<b>Group 05 – Engine Testing Benzene Limit</b>		
Emission Unit	Description	Construction Date
ETF2	Endurance Testing Facility Cell #2- Engine Exhaust	
ETF3	Endurance Testing Facility Cell #3- Engine Exhaust	
ETF4	Endurance Testing Facility Cell #4- Engine Exhaust	
ETF5	Endurance Testing Facility Cell #5- Engine Exhaust	
ETF6	Endurance Testing Facility Cell #6- Engine Exhaust	
ETF7	Endurance Testing Facility Cell #7- Engine Exhaust	
ETF8	Endurance Testing Facility Cell #8- Engine Exhaust	

<b>Group 05 – Engine Testing Benzene Limit</b>		
Emission Unit	Description	Construction Date
ETF9	Endurance Testing Facility Cell #9- Engine Exhaust	
ETF10	Endurance Testing Facility Cell #10- Engine Exhaust	
ETF11	Endurance Testing Facility Cell #11- Engine Exhaust	
ETF12	Endurance Testing Facility Cell #12- Engine Exhaust	
ETF13	Endurance Testing Facility Cell #13-Engine Exhaust	
AET12	Assembly Engine Testing Line 12	11/24/2007

**Permit Condition Group 05-001**  
 10 CSR 10-6.060 Construction Permits Required,  
 Permit Number: 092007-011, Special Condition 1.D.

**Emission Limitation:**

The permittee shall emit less than two (2) tons of Benzene (CAS # 71-42-2) a Hazardous Air Pollutants (HAPs) from the following emission points (ETF2 through ETF13) the 12 dynamometers located in the Endurance Testing Facility and AET12 in any consecutive 12-month period.

**Recordkeeping:**

The permittee shall use Attachment I or equivalent form approved by the Department, to demonstrate compliance with this condition. The permittee shall maintain records of the Material Safety Data Sheets (MSDS) for all materials used at the installation.

<b>Group 06 – Engine Testing NO<sub>x</sub> Limit</b>		
Emission Unit	Description	Construction Date
ETF2	Endurance Testing Facility Cell #2- Engine Exhaust	
ETF3	Endurance Testing Facility Cell #3- Engine Exhaust	
ETF4	Endurance Testing Facility Cell #4- Engine Exhaust	
ETF5	Endurance Testing Facility Cell #5- Engine Exhaust	
ETF6	Endurance Testing Facility Cell #6- Engine Exhaust	
ETF7	Endurance Testing Facility Cell #7- Engine Exhaust	
ETF8	Endurance Testing Facility Cell #8- Engine Exhaust	
ETF9	Endurance Testing Facility Cell #9- Engine Exhaust	
ETF10	Endurance Testing Facility Cell #10- Engine Exhaust	
ETF11	Endurance Testing Facility Cell #11- Engine Exhaust	
ETF12	Endurance Testing Facility Cell #12- Engine Exhaust	
ETF13	Endurance Testing Facility Cell #13-Engine Exhaust	
SH1	Space Heaters	

<b>Group 06 – Engine Testing NO<sub>x</sub> Limit</b>		
Emission Unit	Description	Construction Date
AET12	Assembly Engine Testing Line 12	11/24/2007

**Permit Condition Group 06-001**  
 10 CSR 10-6.060 Construction Permits Required,  
 Permit Number: 092007-011, Special Condition 1.E.

**Emission Limitation:**

The permittee shall emit less than 40 tons of Nitrogen Oxide (NO<sub>x</sub>) from ETF2 through ETF13, AET12 and SH1 in any consecutive 12-month period.

**Recordkeeping:**

The permittee shall use Attachment J or equivalent form approved by the Department, to demonstrate compliance with this condition.

<b>Group 07 – Painting Solvent Usage</b>		
Emission Unit	Description	Construction Date
PE1	Alkaline Cleaning Bath For Parts To Be Painted	
PE2	Zinc Phosphate Bath – Paint Pretreatment	
PE3	Painting Washer Nickel and Manganese Compounds	
PE9	Painting Wet Paint Booth	

**Permit Condition Group 07-001**  
 10 CSR 10-6.060 Construction Permits Required,  
 Permit Number: 0193-001A, Special Condition 2.

**Recordkeeping:**

The permittee shall keep monthly inventory records of solvent types and amounts purchased and solvent consumption for a period of twenty four months. These records shall include solvent information from the wet paint booth and the phosphate washer system. The records shall include all types and amounts of solvent containing waste material transferred to either a contract reclamation services or to a disposal facility and all amounts distilled on the premises. The records also shall include maintenance and repair logs for both the degreaser and any associated control equipment.

<b>Group 08 – Exhaust Vents</b>		
Description		
Die Casting Area 1 – North		
Die Casting Area 1- Southwest		
Die Casting Area 1 – South Middle		
Die Casting Area 1 – Southeast		
Die Casting Area 2 – North		
Die Casting Area 2 – South		

**Permit Condition Group 08-001**

10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants

**Emission Limitation:**

No owner or other person shall cause or permit to be discharged into the atmosphere from any source any visible emissions in excess of the limits specified by this rule.

<b>WVISF1 - Wet Vacuum Impregnation System</b>		
Description	Manufacturer	Construction Date
Wet Vacuum Impregnation System		

**Permit Condition WVISF1-001**

10 CSR 10-6.060 Construction Permits Required,  
 Permit Number: 062001-001A, Special Condition 2., 3. and 4.

**Emission Limitation:**

The permittee shall not use any sealant in the wet vacuum impregnation system (Emission Point Source No. WVISF1) which contains 2.91 pounds or more of any single HAP or 7.26 pounds or more of aggregate HAPs per gallon of sealant.

**Recordkeeping:**

the permittee shall demonstrate, using Attachment A or equivalent form that the sealant used in the wet vacuum impregnation system (Emission Point Source No. WVISF1) does not exceed the above VOC and HAP restrictions.

<b>PE10B – Painting Hanger Burn Off Furnace #2</b>		
Description	Manufacturer	Construction Date
Painting Hanger Burn Off Furnace #2		

**Permit Condition PE10B-001**

10 CSR 10-6.060 Construction Permits Required,  
 Permit Number: 032004-006, Special Condition 1.

**Emission Limitation:**

Control Device – Direct Flame Afterburner (Control Device ID, 8-2)

The permittee shall control emissions of carbon monoxide (CO) and volatile organic compounds (VOC) from the Painting Hanger Cleaning Furnace (PE10B) using a direct flame afterburner. The afterburner shall be operated and maintained in accordance with the manufacturer’s specifications.

**Recordkeeping:**

The permittee shall maintain an operating and maintenance log for the direct flame afterburner which shall include the following: 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

**PE10C – Painting Hanger Burn Off Furnace #3**

Description	Manufacturer	Construction Date
Pyrolysis Cleaning Furnace		

**Permit Condition PE10C-001**

10 CSR 10-6.060 Construction Permits Required,  
 Permit Number: 012010-003, Special Condition 3)A)

**Operational Limitation/Equipment Specifications:**

The permittee shall use the pyrolysis cleaning furnace (EP10C) exclusively to remove paint from metal hangars.

**Permit Condition PE10C-002**

10 CSR 10-6.060 Construction Permits Required,  
 Permit Number: 012010-003, Special Condition 3)B)

**Operational Limitation/Equipment Specifications:**

Natural gas shall be the only fuel burned in this pyrolysis cleaning furnace.

**Permit Condition PE10C-003**

10 CSR 10-6.060 Construction Permits Required,  
 Permit Number: 012010-003, Special Condition 3)C)

**Operational Limitation/Equipment Specifications:**

The permittee shall control carbon monoxide (CO) and volatile organic compound (VOC) emissions from the pyrolysis cleaning furnace (EP10C) using a direct flame afterburner. The afterburner shall be operated and maintained in accordance with the manufacturer’s specifications.

**Recordkeeping:**

The permittee shall maintain an operating and maintenance log for the direct flame afterburner which shall include the following: i) incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and ii) maintenance activities, with inspection schedule, repair actions, and replacements, etc.

**EG01 – Emergency Generator**

Description	Manufacturer	Construction Date
Emergency Generator		

**Permit Condition EG01-001**

10 CSR 10-6.060 Construction Permits Required,  
 Permit Number: 012010-003, Special Condition 4)

**Operational Limitation/Equipment Specifications:**

The operating hours of the emergency generator (EG01) shall not exceed 500 hours in any consecutive twelve (12) month period. To facilitate the recordkeeping for this condition, the emergency equipment shall be equipped with a non-resettable running time meter.

## IV. Core Permit Requirements

The installation shall comply with each of the following regulations or codes. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued. The following is only an excerpt from the regulation or code, and is provided for summary purposes only.

### **10 CSR 10-6.045 Open Burning Requirements**

- 1) General Provisions. The open burning of tires, petroleum-based products, asbestos containing materials, and trade waste is prohibited, except as allowed below. Nothing in this rule may be construed as to allow open burning which causes or constitutes a public health hazard, nuisance, a hazard to vehicular or air traffic, nor which violates any other rule or statute.
- 2) Refer to the regulation for a complete list of allowances. The following is a listing of exceptions to the allowances:
  - a) Burning of household or domestic refuse. Burning of household or domestic refuse is limited to open burning on a residential premises having not more than four dwelling units, provided that the refuse originates on the same premises, with the following exceptions:
    - i) Kansas City metropolitan area. The open burning of household refuse must take place in an area zoned for agricultural purposes and outside that portion of the metropolitan area surrounded by the corporate limits of Kansas City and every contiguous municipality;
    - ii) Springfield-Greene County area. The open burning of household refuse must take place outside the corporate limits of Springfield and only within areas zoned A-1, Agricultural District;
    - iii) St. Joseph area. The open burning of household refuse must take place within an area zoned for agricultural purposes and outside that portion of the metropolitan area surrounded by the corporate limits of St. Joseph; and
    - iv) St. Louis metropolitan area. The open burning of household refuse is prohibited;
  - b) Yard waste, with the following exceptions:
    - i) Kansas City metropolitan area. The open burning of trees, tree leaves, brush or any other type of vegetation shall require an open burning permit;
    - ii) Springfield-Greene County area. The City of Springfield requires an open burning permit for the open burning of trees, brush or any other type of vegetation. The City of Springfield prohibits the open burning of tree leaves;
    - iii) St. Joseph area. Within the corporate limits of St. Joseph, the open burning of trees, tree leaves, brush or any other type of vegetation grown on a residential property is allowed during the following calendar periods and time-of-day restrictions:
      - (1) A three (3)-week period within the period commencing the first day of March through April 30 and continuing for twenty-one (21) consecutive calendar days;
      - (2) A three (3)-week period within the period commencing the first day of October through November 30 and continuing for twenty-one (21) consecutive calendar days;
      - (3) The burning shall take place only between the daytime hours of 10:00 a.m. and 3:30 p.m.; and
      - (4) In each instance, the twenty-one (21)-day burning period shall be determined by the Director of Public Health and Welfare of the City of St. Joseph for the region in which the City of St. Joseph is located provided, however, the burning period first shall receive the approval of the Department Director; and

- iv) St. Louis metropolitan area. The open burning of trees, tree leaves, brush or any other type of vegetation is limited to the period beginning September 16 and ending April 14 of each calendar year and limited to a total base area not to exceed sixteen (16) square feet. Any open burning shall be conducted only between the hours of 10:00 a.m. and 4:00 p.m. and is limited to areas outside of incorporated municipalities;
- 3) Certain types of materials may be open burned provided an open burning permit is obtained from the Director. The permit will specify the conditions and provisions of all open burning. The permit may be revoked if the owner or operator fails to comply with the conditions or any provisions of the permit.
- 4) Kawasaki Motors Manufacturing Corporation may be issued an annually renewable open burning permit for open burning provided that an air curtain destructor or incinerator is utilized and only tree trunks, tree limbs, vegetation or untreated wood waste are burned. Open burning shall occur at least two hundred (200) yards from the nearest occupied structure unless the owner or operator of the occupied structure provides a written waiver of this requirement. Any waiver shall accompany the open burning permit application. The permit may be revoked if Kawasaki Motors Manufacturing Corporation fails to comply with the provisions or any condition of the open burning permit.
  - a) In a nonattainment area, as defined in 10 CSR 10-6.020, paragraph (2)(N)5., the Director shall not issue a permit under this section unless the owner or operator can demonstrate to the satisfaction of the Director that the emissions from the open burning of the specified material would be less than the emissions from any other waste management or disposal method.
- 5) Reporting and Recordkeeping. New Source Performance Standard (NSPS) 40 CFR Part 60 Subpart CCCC establishes certain requirements for air curtain destructors or incinerators that burn wood trade waste. These requirements are established in 40 CFR 60.2245-60.2260. The provisions of 40 CFR Part 60 Subpart CCCC promulgated as of September 22, 2005, shall apply and are hereby incorporated by reference in this rule, as published by the U.S. Government Printing Office, 732 N Capitol Street NW, Washington, DC 20401. To comply with NSPS 40 CFR 60.2245-60.2260, sources must conduct an annual Method 9 test. A copy of the annual Method 9 test results shall be submitted to the Director.
- 6) Test Methods. The visible emissions from air pollution sources shall be evaluated as specified by 40 CFR Part 60, Appendix A–Test Methods, Method 9–Visual Determination of the Opacity of Emissions from Stationary Sources. The provisions of 40 CFR Part 60, Appendix A, Method 9 promulgated as of December 23, 1971, is incorporated by reference in this rule, as published by the U.S. Government Printing Office, 732 N Capitol Street NW, Washington, DC 20401.

<b>10 CSR 10-6.050 Start-up, Shutdown and Malfunction Conditions</b>
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- 1) In the event of a malfunction, which results in excess emissions that exceed one hour, the permittee shall submit to the Director within two business days, in writing, the following information:
  - a) Name and location of installation;
  - b) Name and telephone number of person responsible for the installation;
  - c) Name of the person who first discovered the malfunction and precise time and date that the malfunction was discovered.
  - d) Identity of the equipment causing the excess emissions;
  - e) Time and duration of the period of excess emissions;
  - f) Cause of the excess emissions;
  - g) Air pollutants involved;
  - h) Best estimate of the magnitude of the excess emissions expressed in the units of the applicable requirement and the operating data and calculations used in estimating the magnitude;

- i) Measures taken to mitigate the extent and duration of the excess emissions; and
  - j) Measures taken to remedy the situation that caused the excess emissions and the measures taken or planned to prevent the recurrence of these situations.
- 2) The permittee shall submit the paragraph 1 information list to the Director in writing at least ten days prior to any maintenance, start-up or shutdown, which is expected to cause an excessive release of emissions that exceed one hour. If notice of the event cannot be given ten days prior to the planned occurrence, it shall be given as soon as practicable prior to the release. If an unplanned excess release of emissions exceeding one hour occurs during maintenance, start-up or shutdown, the Director shall be notified verbally as soon as practical during normal working hours and no later than the close of business of the following working day. A written notice shall follow within ten working days.
  - 3) Upon receipt of a notice of excess emissions issued by an agency holding a certificate of authority under Section 643.140, RSMo, the permittee may provide information showing that the excess emissions were the consequence of a malfunction, start-up or shutdown. The information, at a minimum, should be the paragraph 1 list and shall be submitted not later than 15 days after receipt of the notice of excess emissions. Based upon information submitted by the permittee or any other pertinent information available, the Director or the commission shall make a determination whether the excess emissions constitute a malfunction, start-up or shutdown and whether the nature, extent and duration of the excess emissions warrant enforcement action under Section 643.080 or 643.151, RSMo.
  - 4) Nothing in this rule shall be construed to limit the authority of the Director or commission to take appropriate action, under Sections 643.080, 643.090 and 643.151, RSMo to enforce the provisions of the Air Conservation Law and the corresponding rule.
  - 5) Compliance with this rule does not automatically absolve the permittee of liability for the excess emissions reported.

#### **10 CSR 10-6.060 Construction Permits Required**

The permittee shall not commence construction, modification, or major modification of any installation subject to this rule, begin operation after that construction, modification, or major modification, or begin operation of any installation which has been shut down longer than five years without first obtaining a permit from the permitting authority.

#### **10 CSR 10-6.065 Operating Permits**

The permittee shall file a complete application for renewal of this operating permit at least six months before the date of permit expiration. In no event shall this time be greater than eighteen months. [10 CSR 10-6.065(6)(B)1.A(V)] The permittee shall retain the most current operating permit issued to this installation on-site. [10 CSR 10-6.065(6)(C)1.C(II)] The permittee shall immediately make such permit available to any Missouri Department of Natural Resources personnel upon request. [10 CSR 10-6.065(6)(C)3.B]

#### **10 CSR 10-6.110 Submission of Emission Data, Emission Fees and Process Information**

- 1) The permittee shall complete and submit an Emission Inventory Questionnaire (EIQ) annually.
- 2) The permittee may be required by the Director to file additional reports.
- 3) Public Availability of Emission Data and Process Information. Any information obtained pursuant to the rule(s) of the Missouri Air Conservation Commission that would not be entitled to confidential treatment under 10 CSR 10-6.210 shall be made available to any member of the public upon request.

- 4) The permittee shall pay an annual emission fee per ton of regulated air pollutant emitted according to the schedule in the rule. This fee is an emission fee assessed under authority of RSMo. 643.079 to satisfy the requirements of the Federal Clean Air Act, Title V.
- 5) The permittee shall complete required reports on state supplied EIQ forms or in a form satisfactory to the Director and the reports shall be submitted to the Director by June 1 after the end of each reporting period.
- 6) The reporting period shall end on December 31 of each calendar year. Each report shall contain the required information for each emission unit for the twelve (12)-month period immediately preceding the end of the reporting period.
- 7) The permittee shall collect, record and maintain the information necessary to complete the required forms during each year of operation of the installation.

**10 CSR 10-6.130 Controlling Emissions During Episodes of High Air Pollution Potential**

This rule specifies the conditions that establish an air pollution alert (yellow/orange/red/purple), or emergency (maroon) and the associated procedures and emission reduction objectives for dealing with each. The permittee shall submit an appropriate emergency plan if required by the Director.

**10 CSR 10-6.150 Circumvention**

The permittee shall not cause or permit the installation or use of any device or any other means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission or air contaminant which violates a rule of the Missouri Air Conservation Commission.

**10 CSR 10-6.170**

**Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin**

**Emission Limitation:**

- 1) The permittee shall not cause or allow to occur any handling, transporting or storing of any material; construction, repair, cleaning or demolition of a building or its appurtenances; construction or use of a road, driveway or open area; or operation of a commercial or industrial installation without applying reasonable measures as may be required to prevent, or in a manner which allows or may allow, fugitive particulate matter emissions to go beyond the premises of origin in quantities that the particulate matter may be found on surfaces beyond the property line of origin. The nature or origin of the particulate matter shall be determined to a reasonable degree of certainty by a technique proven to be accurate and approved by the Director.
- 2) The permittee shall not cause nor allow to occur any fugitive particulate matter emissions to remain visible in the ambient air beyond the property line of origin.
- 3) Should it be determined that noncompliance has occurred, the Director may require reasonable control measures as may be necessary. These measures may include, but are not limited to, the following:
  - a) Revision of procedures involving construction, repair, cleaning and demolition of buildings and their appurtenances that produce particulate matter emissions;
  - b) Paving or frequent cleaning of roads, driveways and parking lots;
  - c) Application of dust-free surfaces;
  - d) Application of water; and
  - e) Planting and maintenance of vegetative ground cover.

**Monitoring:**

The permittee shall conduct inspections of its facilities sufficient to determine compliance with this regulation. If the permittee discovers a violation, the permittee shall undertake corrective action to eliminate the violation.

The permittee shall maintain the following monitoring schedule:

- 1) The permittee shall conduct weekly observations for a minimum of eight (8) consecutive weeks after permit issuance.
- 2) Should no violation of this regulation be observed during this period then-
  - a) The permittee may observe once every two (2) weeks for a period of eight (8) weeks.
  - b) If a violation is noted, monitoring reverts to weekly.
  - c) Should no violation of this regulation be observed during this period then-
    - i) The permittee may observe once per month.
    - ii) If a violation is noted, monitoring reverts to weekly.
- 3) If the permittee reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner to the initial monitoring frequency.

**Recordkeeping:**

The permittee shall document all readings on Attachment A, or its equivalent, noting the following:

- 1) Whether air emissions (except water vapor) remain visible in the ambient air beyond the property line of origin.
- 2) Whether the visible emissions were normal for the installation.
- 3) Whether equipment malfunctions contributed to an exceedance.
- 4) Any violations and any corrective actions undertaken to correct the violation.

<b>10 CSR 10-6.180 Measurement of Emissions of Air Contaminants</b>
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- 1) The Director may require any person responsible for the source of emission of air contaminants to make or have made tests to determine the quantity or nature, or both, of emission of air contaminants from the source. The Director may specify testing methods to be used in accordance with good professional practice. The Director may observe the testing. All tests shall be performed by qualified personnel.
- 2) The Director may conduct tests of emissions of air contaminants from any source. Upon request of the Director, the person responsible for the source to be tested shall provide necessary ports in stacks or ducts and other safe and proper sampling and testing facilities, exclusive of instruments and sensing devices as may be necessary for proper determination of the emission of air contaminants.
- 3) The Director shall be given a copy of the test results in writing and signed by the person responsible for the tests.

<b>10 CSR 10-6.165 Restriction of Emission of Odors</b>
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**This requirement is not federally enforceable.**

No person may cause, permit or allow the emission of odorous matter in concentrations and frequencies or for durations that odor can be perceived when one volume of odorous air is diluted with seven volumes of odor-free air for two separate trials not less than 15 minutes apart within the period of one hour. This odor evaluation shall be taken at a location outside of the installation's property boundary.

### **10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants**

#### **Emission Limitation:**

No owner or other person shall cause or permit to be discharged into the atmosphere from any source any visible emissions in excess of the limits specified by this rule. This permit will contain the opacity limits identified (10, 20 or 40 percent) for the specific emission units.

#### **Monitoring:**

- 1) The permittee shall conduct opacity readings on each emission unit using the procedures contained in U.S. EPA Test Method 22. The permittee is only required to take readings when the emission unit is operating and when the weather conditions allow. If the permittee observes no visible or other significant emissions using these procedures, then no further observations are required. For emission units with visible emissions perceived or believed to exceed the applicable opacity standard, the source representative would then conduct a Method 9 observation.
- 2) The permittee must maintain the following monitoring schedule:
  - a) The permittee shall conduct weekly observations for a minimum of eight (8) consecutive weeks after permit issuance.
  - b) Should the permittee observe no violations of this regulation during this period then-
    - i) The permittee may observe once every two (2) weeks for a period of eight (8) weeks.
    - ii) If a violation is noted, monitoring reverts to weekly.
    - iii) Should no violation of this regulation be observed during this period then-
      - (1) The permittee may observe once per month.
      - (2) If a violation is noted, monitoring reverts to weekly.
- 3) If the source reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner from the initial monitoring frequency.

#### **Recordkeeping:**

The permittee shall maintain records of all observation results using Attachment B (or its equivalent), noting:

- 1) Whether any air emissions (except for water vapor) were visible from the emission units;
- 2) All emission units from which visible emissions occurred;
- 3) Whether the visible emissions were normal for the process;
- 4) The permittee shall maintain records of any equipment malfunctions, which may contribute to visible emissions; and,
- 5) The permittee shall maintain records of all U.S. EPA Method 9 opacity tests performed.

### **Title VI – 40 CFR Part 82 Protection of Stratospheric Ozone**

- 1) The permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, Subpart E:
  - a) All containers in which a class I or class II substance is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to §82.106.
  - b) The placement of the required warning statement must comply with the requirements pursuant to §82.108.
  - c) The form of the label bearing the required warning statement must comply with the requirements pursuant to §82.110.

- d) No person may modify, remove, or interfere with the required warning statement except as described in §82.112.
- 2) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:
  - a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §82.156.
  - b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to §82.158.
  - c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161.
  - d) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with recordkeeping requirements pursuant to §82.166. ("MVAC-like" appliance as defined at §82.152).
  - e) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to §82.156.
  - f) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.
- 3) If the permittee manufactures, transforms, imports, or exports a class I or class II substance, the permittee is subject to all the requirements as specified in 40 CFR Part 82, Subpart A, Production and Consumption Controls.
- 4) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR Part 82, Subpart B, Servicing of Motor Vehicle Air conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or system used on passenger buses using HCFC-22 refrigerant.
- 5) The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR Part 82, Subpart G, Significant New Alternatives Policy Program. *Federal Only - 40 CFR Part 82*

#### **10 CSR 10-6.280 Compliance Monitoring Usage**

- 1) The permittee is not prohibited from using the following in addition to any specified compliance methods for the purpose of submission of compliance certificates:
  - a) Monitoring methods outlined in 40 CFR Part 64;
  - b) Monitoring method(s) approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; and
  - c) Any other monitoring methods approved by the Director.
- 2) Any credible evidence may be used for the purpose of establishing whether a permittee has violated or is in violation of any such plan or other applicable requirement. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred by a permittee:
  - a) Monitoring methods outlined in 40 CFR Part 64;
  - b) A monitoring method approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; and

- c) Compliance test methods specified in the rule cited as the authority for the emission limitations.
- 3) The following testing, monitoring or information gathering methods are presumptively credible testing, monitoring, or information gathering methods:
  - a) Applicable monitoring or testing methods, cited in:
    - i) 10 CSR 10-6.030, "Sampling Methods for Air Pollution Sources";
    - ii) 10 CSR 10-6.040, "Reference Methods";
    - iii) 10 CSR 10-6.070, "New Source Performance Standards";
    - iv) 10 CSR 10-6.080, "Emission Standards for Hazardous Air Pollutants"; or
  - b) Other testing, monitoring, or information gathering methods, if approved by the Director, that produce information comparable to that produced by any method listed above.

## V. General Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued,

### **10 CSR 10-6.065(6)(C)1.B Permit Duration**

This permit is issued for a term of five years, commencing on the date of issuance. This permit will expire at the end of this period unless renewed.

### **10 CSR 10-6.065(6)(C)1.C General Recordkeeping and Reporting Requirements**

- 1) Recordkeeping
  - a) All required monitoring data and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report or application.
  - b) Copies of all current operating and construction permits issued to this installation shall be kept on-site for as long as the permits are in effect. Copies of these permits shall be made immediately available to any Missouri Department of Natural Resources' personnel upon request.
- 2) Reporting
  - a) All reports shall be submitted to the Air Pollution Control Program's Enforcement Section, P. O. Box 176, Jefferson City, MO 65102.
  - b) The permittee shall submit a report of all required monitoring by:
    - i) October 1st for monitoring which covers the January through June time period, and
    - ii) April 1st for monitoring which covers the July through December time period.
    - iii) Exception. Monitoring requirements which require reporting more frequently than semiannually shall report no later than 30 days after the end of the calendar quarter in which the measurements were taken.
  - c) Each report shall identify any deviations from emission limitations, monitoring, recordkeeping, reporting, or any other requirements of the permit, this includes deviations or Part 64 exceedances.
  - d) Submit supplemental reports as required or as needed. Supplemental reports are required no later than ten days after any exceedance of any applicable rule, regulation or other restriction. All reports of deviations shall identify the cause or probable cause of the deviations and any corrective actions or preventative measures taken.
    - i) Notice of any deviation resulting from an emergency (or upset) condition as defined in paragraph (6)(C)7.A of 10 CSR 10-6.065 (Emergency Provisions) shall be submitted to the permitting authority either verbally or in writing within two working days after the date on which the emission limitation is exceeded due to the emergency, if the permittee wishes to assert an affirmative defense. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that indicate an emergency occurred and the permittee can identify the cause(s) of the emergency. The permitted installation must show that it was operated properly at the time and that during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or requirements in the permit. The notice must contain a description of the emergency, the steps taken to mitigate emissions, and the corrective actions taken.

- ii) Any deviation that poses an imminent and substantial danger to public health, safety or the environment shall be reported as soon as practicable.
- iii) Any other deviations identified in the permit as requiring more frequent reporting than the permittee's semiannual report shall be reported on the schedule specified in this permit, and no later than ten days after any exceedance of any applicable rule, regulation, or other restriction.
- e) Every report submitted shall be certified by the responsible official, except that, if a report of a deviation must be submitted within ten days after the deviation, the report may be submitted without a certification if the report is resubmitted with an appropriate certification within ten days after that, together with any corrected or supplemental information required concerning the deviation.
- f) The permittee may request confidential treatment of information submitted in any report of deviation.

#### **10 CSR 10-6.065(6)(C)1.D Risk Management Plan Under Section 112(r)**

The permittee shall comply with the requirements of 40 CFR Part 68, Accidental Release Prevention Requirements. If the permittee has more than a threshold quantity of a regulated substance in process, as determined by 40 CFR Section 68.115, the permittee shall submit a Risk Management Plan in accordance with 40 CFR Part 68 no later than the latest of the following dates:

- 1) June 21, 1999;
- 2) Three years after the date on which a regulated substance is first listed under 40 CFR Section 68.130; or
- 3) The date on which a regulated substance is first present above a threshold quantity in a process.

#### **10 CSR 10-6.065(6)(C)1.F Severability Clause**

In the event of a successful challenge to any part of this permit, all uncontested permit conditions shall continue to be in force. All terms and conditions of this permit remain in effect pending any administrative or judicial challenge to any portion of the permit. If any provision of this permit is invalidated, the permittee shall comply with all other provisions of the permit.

#### **10 CSR 10-6.065(6)(C)1.G General Requirements**

- 1) The permittee must comply with all of the terms and conditions of this permit. Any noncompliance with a permit condition constitutes a violation and is grounds for enforcement action, permit termination, permit revocation and re-issuance, permit modification or denial of a permit renewal application.
- 2) The permittee may not use as a defense in an enforcement action that it would have been necessary for the permittee to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit
- 3) The permit may be modified, revoked, reopened, reissued or terminated for cause. Except as provided for minor permit modifications, the filing of an application or request for a permit modification, revocation and reissuance, or termination, or the filing of a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- 4) This permit does not convey any property rights of any sort, nor grant any exclusive privilege.
- 5) The permittee shall furnish to the Air Pollution Control Program, upon receipt of a written request and within a reasonable time, any information that the Air Pollution Control Program reasonably may require to determine whether cause exists for modifying, reopening, reissuing or revoking the permit or to determine compliance with the permit. Upon request, the permittee also shall furnish to

the Air Pollution Control Program copies of records required to be kept by the permittee. The permittee may make a claim of confidentiality for any information or records submitted pursuant to 10 CSR 10-6.065(6)(C)1.

**10 CSR 10-6.065(6)(C)1.H Incentive Programs Not Requiring Permit Revisions**

No permit revision will be required for any installation changes made under any approved economic incentive, marketable permit, emissions trading, or other similar programs or processes provided for in this permit.

**10 CSR 10-6.065(6)(C)1.I Reasonably Anticipated Operating Scenarios**

None

**10 CSR 10-6.065(6)(C)3 Compliance Requirements**

- 1) Any document (including reports) required to be submitted under this permit shall contain a certification signed by the responsible official.
- 2) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized officials of the Missouri Department of Natural Resources, or their authorized agents, to perform the following (subject to the installation's right to seek confidential treatment of information submitted to, or obtained by, the Air Pollution Control Program):
  - a) Enter upon the premises where a permitted installation is located or an emissions-related activity is conducted, or where records must be kept under the conditions of this permit;
  - b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
  - c) Inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
  - d) As authorized by the Missouri Air Conservation Law, Chapter 643, RSMo or the Act, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the terms of this permit, and all applicable requirements as outlined in this permit.
- 3) All progress reports required under an applicable schedule of compliance shall be submitted semiannually (or more frequently if specified in the applicable requirement). These progress reports shall contain the following:
  - a) Dates for achieving the activities, milestones or compliance required in the schedule of compliance, and dates when these activities, milestones or compliance were achieved, and
  - b) An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measures adopted.
- 4) The permittee shall submit an annual certification that it is in compliance with all of the federally enforceable terms and conditions contained in this permit, including emissions limitations, standards, or work practices. These certifications shall be submitted annually by April 1st, unless the applicable requirement specifies more frequent submission. These certifications shall be submitted to EPA Region VII, 901 North 5th Street, Kansas City, KS 66101, as well as the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102. All deviations and Part 64 exceedances and excursions must be included in the compliance certifications. The compliance certification shall include the following:
  - a) The identification of each term or condition of the permit that is the basis of the certification;
  - b) The current compliance status, as shown by monitoring data and other information reasonably available to the installation;

- c) Whether compliance was continuous or intermittent;
- d) The method(s) used for determining the compliance status of the installation, both currently and over the reporting period; and
- e) Such other facts as the Air Pollution Control Program will require in order to determine the compliance status of this installation.

#### **10 CSR 10-6.065(6)(C)6 Permit Shield**

- 1) Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements as of the date that this permit is issued, provided that:
  - a) The application requirements are included and specifically identified in this permit, or
  - b) The permitting authority, in acting on the permit revision or permit application, determines in writing that other requirements, as specifically identified in the permit, are not applicable to the installation, and this permit expressly includes that determination or a concise summary of it.
- 2) Be aware that there are exceptions to this permit protection. The permit shield does not affect the following:
  - a) The provisions of Section 303 of the Act or Section 643.090, RSMo concerning emergency orders,
  - b) Liability for any violation of an applicable requirement which occurred prior to, or was existing at, the time of permit issuance,
  - c) The applicable requirements of the acid rain program,
  - d) The authority of the Environmental Protection Agency and the Air Pollution Control Program of the Missouri Department of Natural Resources to obtain information, or
  - e) Any other permit or extra-permit provisions, terms or conditions expressly excluded from the permit shield provisions.

#### **10 CSR 10-6.065(6)(C)7 Emergency Provisions**

- 1) An emergency or upset as defined in 10 CSR 10-6.065(6)(C)7.A shall constitute an affirmative defense to an enforcement action brought for noncompliance with technology-based emissions limitations. To establish an emergency- or upset-based defense, the permittee must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, the following:
  - a) That an emergency or upset occurred and that the permittee can identify the source of the emergency or upset,
  - b) That the installation was being operated properly,
  - c) That the permittee took all reasonable steps to minimize emissions that exceeded technology-based emissions limitations or requirements in this permit, and
  - d) That the permittee submitted notice of the emergency to the Air Pollution Control Program within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and any corrective actions taken.
- 2) Be aware that an emergency or upset shall not include noncompliance caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

#### **10 CSR 10-6.065(6)(C)8 Operational Flexibility**

An installation that has been issued a Part 70 operating permit is not required to apply for or obtain a permit revision in order to make any of the changes to the permitted installation described below if the changes are not Title I modifications, the changes do not cause emissions to exceed emissions allowable

under the permit, and the changes do not result in the emission of any air contaminant not previously emitted. The permittee shall notify the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 901 North 5th Street, Kansas City, KS 66101, at least seven days in advance of these changes, except as allowed for emergency or upset conditions. Emissions allowable under the permit means a federally enforceable permit term or condition determined at issuance to be required by an applicable requirement that establishes an emissions limit (including a work practice standard) or a federally enforceable emissions cap that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject.

- 1) Section 502(b)(10) changes. Changes that, under Section 502(b)(10) of the Act, contravene an express permit term may be made without a permit revision, except for changes that would violate applicable requirements of the Act or contravene federally enforceable monitoring (including test methods), recordkeeping, reporting or compliance requirements of the permit.
  - a) Before making a change under this provision, The permittee shall provide advance written notice to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 901 North 5th Street, Kansas City, KS 66101, describing the changes to be made, the date on which the change will occur, and any changes in emission and any permit terms and conditions that are affected. The permittee shall maintain a copy of the notice with the permit, and the Air Pollution Control Program shall place a copy with the permit in the public file. Written notice shall be provided to the EPA and the Air Pollution Control Program as above at least seven days before the change is to be made. If less than seven days notice is provided because of a need to respond more quickly to these unanticipated conditions, the permittee shall provide notice to the EPA and the Air Pollution Control Program as soon as possible after learning of the need to make the change.
  - b) The permit shield shall not apply to these changes.

#### **10 CSR 10-6.065(6)(C)9 Off-Permit Changes**

- 1) Except as noted below, the permittee may make any change in its permitted operations, activities or emissions that is not addressed in, constrained by or prohibited by this permit without obtaining a permit revision. Insignificant activities listed in the application, but not otherwise addressed in or prohibited by this permit, shall not be considered to be constrained by this permit for purposes of the off-permit provisions of this section. Off-permit changes shall be subject to the following requirements and restrictions:
  - a) The change must meet all applicable requirements of the Act and may not violate any existing permit term or condition; the permittee may not change a permitted installation without a permit revision if this change is subject to any requirements under Title IV of the Act or is a Title I modification;
  - b) The permittee must provide written notice of the change to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 901 North 5th Street, Kansas City, KS 66101, no later than the next annual emissions report. This notice shall not be required for changes that are insignificant activities under 10 CSR 10-6.065(6)(B)3. This written notice shall describe each change, including the date, any change in emissions, pollutants emitted and any applicable requirement that would apply as a result of the change.
  - c) The permittee shall keep a record describing all changes made at the installation that result in emissions of a regulated air pollutant subject to an applicable requirement and the emissions resulting from these changes; and

- d) The permit shield shall not apply to these changes.

**10 CSR 10-6.020(2)(R)12 Responsible Official**

The application utilized in the preparation of this permit was signed by Steve Bratt, Director/Plant Manager. If this person terminates employment, or is reassigned different duties such that a different person becomes the responsible person to represent and bind the installation in environmental permitting affairs, the owner or operator of this air contaminant source shall notify the Director of the Air Pollution Control Program of the change. Said notification shall be in writing and shall be submitted within 30 days of the change. The notification shall include the name and title of the new person assigned by the source owner or operator to represent and bind the installation in environmental permitting affairs. All representations, agreement to terms and conditions and covenants made by the former responsible person that were used in the establishment of limiting permit conditions on this permit will continue to be binding on the installation until such time that a revision to this permit is obtained that would change said representations, agreements and covenants.

**10 CSR 10-6.065(6)(E)6 Reopening-Permit for Cause**

This permit may be reopened for cause if:

- 1) The Missouri Department of Natural Resources (MDNR) receives notice from the Environmental Protection Agency (EPA) that a petition for disapproval of a permit pursuant to 40 CFR § 70.8(d) has been granted, provided that the reopening may be stayed pending judicial review of that determination,
- 2) The Missouri Department of Natural Resources or EPA determines that the permit contains a material mistake or that inaccurate statements were made which resulted in establishing the emissions limitation standards or other terms of the permit,
- 3) Additional applicable requirements under the Act become applicable to the installation; however, reopening on this ground is not required if—:
  - a) The permit has a remaining term of less than three years;
  - b) The effective date of the requirement is later than the date on which the permit is due to expire;  
or
  - c) The additional applicable requirements are implemented in a general permit that is applicable to the installation and the installation receives authorization for coverage under that general permit,
- 4) The installation is an affected source under the acid rain program and additional requirements (including excess emissions requirements), become applicable to that source, provided that, upon approval by EPA, excess emissions offset plans shall be deemed to be incorporated into the permit;  
or
- 5) The Missouri Department of Natural Resources or EPA determines that the permit must be reopened and revised to assure compliance with applicable requirements.

**10 CSR 10-6.065(6)(E)1.C Statement of Basis**

This permit is accompanied by a statement setting forth the legal and factual basis for the permit conditions (including references to applicable statutory or regulatory provisions). This Statement of Basis, while referenced by the permit, is not an actual part of the permit.

## VI. Attachments

Attachments follow.





**Attachment C**

Method 9 Opacity Emissions Observations								
Company				Observer				
Location				Observer Certification Date				
Date				Emission Unit				
Time				Control Device				
Hour	Minute	Seconds				Steam Plume (check if applicable)		Comments
		0	15	30	45	Attached	Detached	
	0							
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
SUMMARY OF AVERAGE OPACITY								
Set Number	Time				Opacity			
	Start	End	Sum	Average				

Readings ranged from \_\_\_\_\_ to \_\_\_\_\_ % opacity.

Was the emission unit in compliance at the time of evaluation? \_\_\_\_\_  
 YES NO Signature of Observer \_\_\_\_\_



**Attachment E**  
**012010-003 Attachment A**  
**VOC and CO Monthly Compliance Worksheet**

This form covers (Month, Year) \_\_\_\_\_

Emission Point	Usage Units	Usage Amt	VOC Emission Factor	CO Emission Factor	VOC	CO	Fuel Type
AET1 thru AET12 AETT & DET1 DET3, DET5,	gallons	0	0.148	3.94	0.0000	0	Unleaded Gasoline
DET1 (cert)	gallons	0	0.148	3.94	0	0	Unleaded Gasoline
DET3 (cert)	gallons	0	0.148	3.94	0	0	Unleaded Gasoline
ETF1 Thru ETF13 , ETC, ASTC	gallons	0	0.148	3.94	0	0	Unleaded Gasoline
Plant-wide natural gas usage	MMCF	0.0000	5.5000	84.0000	0.0000	0.0000	Natural Gas
Plant-wide aluminum melted	tons of Al	0	0.1400	NA	0.0000	0.0000	Smelting Furnace
DE1	gallons	0.0000	0.0493	0.1302	0.0000	0.0000	Diesel Fuel
DEFT1 (breathing loss)	gallons	0.0000	TANKS Program	NA	0.0000	0.0000	Diesel Storage Tank-Fire Suppression
DEFT1 (working loss)	gallons	0.0000	TANKS Program	NA	0.0000	0.0000	Diesel Storage Tank-Fire Suppression
GSPU1 (breathing loss)	gallons	0.0000	TANKS Program	NA	0.0000	0.0000	Unleaded Gas Storage Tank-Prod Use
GSPU1 (working loss)	gallons	0.0000	TANKS Program	NA	0.0000	0.0000	Unleaded Gas Storage Tank-Prod Use
MAF1A (breathing loss)	gallons	0.0000	TANKS Program	NA	0.0000	0.0000	Hydraulic Oil 32 Storage Tank
MAF1A (working loss)	gallons	0.0000	TANKS Program	NA	0.0000	0.0000	Hydraulic Oil 32 Storage Tank
MOSF1 (breathing loss)	gallons	0.0000	TANKS Program	NA	0.0000	0.0000	Motor Oil Storage Tank
MOSF1 (working loss)	gallons	0.0000	TANKS Program	NA	0.0000	0.0000	Motor Oil Storage Tank
MSF1A (breathing loss)	gallons	0.0000	TANKS Program	NA	0.0000	0.0000	Waylube 68 Storage Tank
MSF1A (working loss)	gallons	0.0000	TANKS Program	NA	0.0000	0.0000	Waylube 68 Storage Tank
T-ETF (breathing loss)	gallons	0.0000	TANKS Program	NA	0.0000	0.0000	Endurance Testing Facility Unleaded Gas Tank

Emission Point	Usage Units	Usage Amt	VOC Emission Factor	CO Emission Factor	VOC	CO	Fuel Type
T-ETF (working loss)	gallons	0.0000	TANKS Program	NA	0.0000	0.0000	Endurance Testing Facility Unleaded Gas Tank
T-ETF2 (breathing loss)	gallons	0.0000	TANKS Program	NA	0.0000	0.0000	Endurance Testing Facility Unleaded Gas Tank 2
T-ETF2 (working loss)	gallons	0.0000	TANKS Program	NA	0.0000	0.0000	Endurance Testing Facility Unleaded Gas Tank 2
WOSF1 (breathing loss)	gallons	0.0000	TANKS Program	NA	0.0000	0.0000	Waste Oil Storage Tanks (2)
WOSF1 (working loss)	gallons	0.0000	TANKS Program	NA	0.0000	0.0000	Waste Oil Storage Tanks (2)
<b>Total lbs</b>					0.0000	0.0000	
<b>12 Month Total Tons (VOCs = Attachment A + Attachment B Combined Total Tons):</b>							

\* Space Heater estimated to run 6 months out of year (October through March)

\*\*All emissions are recorded in lbs

\*\*\*Fuel for this is actually taken from hand pump inside R&D # 14. The hand pump is for outside mowing etc. (R&D).

\*\*\*\*VOC emission factor is lbs VOCs/tons of AI





## Attachment H

### Flux Manufacturer's Affirmations



Synthetic Exothermics  
One Madison Street  
Newnan, Georgia 30263

Phone 770-253-7652  
Fax 866-894-4254  
www-synex-flux.com  
Charles Nielsen

Possible emission problems using Synex sf350 aluminum injection flux.

Sf350 is designed to melt below the temperature of molten aluminum. After melting, the compounds are attracted to and chemically bond with impurities in the dross and aluminum. After bonding these compounds float to the surface for removal by the operator. Proper use by injection of sf350 should result in almost all of the flux combining with impurities in the melt.

Sf350 does not contain chlorine or chlorides in any form that would form gas.

Sf350 does contain fluoride compounds. These compounds decompose below the melting point of aluminum to form fluorine gas, which is highly attractive to hydrogen and other impurities in the molten aluminum bath. The level of fluorides in these compounds represent less than 22% of the total weight of the flux. This percentage is far lower than most other fluxes which contain combinations of fluorides and chlorides. Use of sf350 at the proper rate will remove hydrogen and associated impurities from molten aluminum. At the proper use rates very little smoke or fumes are generated. If the flux is used properly almost all of the fluoride will combine with the hydrogen and associated impurities in the aluminum bath. These should float to the top and become part of the dross.

SF350 should be used strictly as an injection flux so that the fluorine can react with impurities in the molten aluminum and float to the top as a non reactive dross. Use of sf350 by injection at the proper rate will remove hydrogen from the aluminum. By using the injection method possible emission problems are minimized. At the proper use rates very little smoke or fumes are generated. Overuse of the flux could possibly result in excessive smoke.

Proper use of the flux requires the burners to be on low fire during the fluxing operation. This will ensure that temperatures are well below the level that most decomposition would occur. Proper training of operators should result in minimal emission problems.

# Syn<sup>thetic</sup> EX<sup>othermics</sup>

Synthetic Exothermics  
One Madison Street  
Newnan, Georgia 30263

Phone 770-253-7652  
Fax 866-894-4254  
synex-flux.com

Possible emission problems using our sf206 aluminum flux.

Sf206 is designed to melt below the temperature of molten aluminum. After melting, the compounds adhere to and chemically bond with impurities in the dross and aluminum. After bonding these compounds float to the surface for removal by the operator. Proper use of sf206 should result in almost all of the flux combining with impurities in the melt.

Sf206 does not contain chlorine (such as hex) in any form that would form gas at normal operating temperatures of an aluminum furnace.

Sf206 does contain potassium chloride (potash). The chloride in these compounds represent approximately 30% of the weight of the flux. These materials could decompose into chlorine compounds at extremely elevated temperatures. These temperatures would be in excess of 2400 degrees F.

Sf206 also contains fluoride compounds. These compounds decompose at 1650 degrees F. The level of fluorides in these compounds represent less than 10% of the total weight of the flux. Use of sf206 at the proper rate will remove hydrogen and associated impurities from molten aluminum. At the proper use rates very little smoke or fumes are generated. If the flux is used properly almost all of the fluoride will combine with the hydrogen and associated impurities in the aluminum bath. These should float to the top and become part of the dross.

In order for any decomposition of either the fluorides or chlorides to occur, the flux would have to be subjected to direct flame impingement. If the burners are properly adjusted and not directed directly onto the metal, impingement should not occur.

SF206 can also be used as an injection flux so that the ingredients can react with impurities in the molten aluminum and float to the top as a non reactive dross. By using the injection method, possible emission problems are minimized. At the proper use rates, very little smoke or fumes are generated. Overuse of the flux could possibly result in excessive smoke.

Proper use of the flux requires the burners to be on low fire during the fluxing operation. This will ensure that temperatures are well below the level that decomposition would occur. Proper training of operators should result in minimal emission problems.



February 20, 2012

Mr. Robert Becker  
Kawasaki Motors Manufacturing Corp., U.S.A.  
28147 Business 71  
Maryville, MO 64468

Dear Mr. Becker:

Thank you for your recent inquiry into the emissions resulting from the application of COVERAL\* 777, and specifically, the possibility of HF emissions.

COVERAL 777 is a wall cleaning flux for the treatment of molten aluminum. As discussed, COVERAL 777 does not emit HF under normal conditions and recommended application procedures. Hence, unless there is something unusual about your process, you should not have any HF emissions result from the use of COVERAL 777 in your facility.

We thank you for being a valued Foseco customer and invite you to contact your local Foseco representative, Jon Erman, with any questions you may have.

Sincerely,



Brian Began  
Product Application Manager  
Non Ferrous Products

BB

\* COVERAL is a Trade Mark of the Foseco Group of Companies.

cc: J. Erman, R. Richardson, D. Harty, A. Karim, T. Hardy

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VESUVIUS

**Attachment I**

**092007-011 Attachment D  
 Special Condition 1D  
 BENZENE Monthly Compliance Work Sheet**

For Month \_\_\_\_\_ Year \_\_\_\_\_

<b>Emission Point</b>	<b>Gal of Gasoline Combusted</b>	<b>Heating Value of Gasoline (MMBTU/Gal)</b>	<b>Benzene (lbs/MMBTU)</b>	<b>Benzene Lbs</b>	<b>Conversion (lbs to tons)</b>	<b>Tons of Benzene</b>
ETF2 Thru ETF13	0.0000	0.1300	0.1419	0.000000	0.0005	0.000000
AET12	0.0000	0.1300	0.1419	0.000000	0.0005	0.000000
<b>Monthly Total Tons:</b>						0.000000
<b>12 Month Rolling Cumulative Tons:</b>						
<p>A rolling 12-month HAP emission total of less than two (2) tons of Benzene emissions from emission points ETF2 through ETF13 and AET12 at the installation indicates compliance.</p>						

**Attachment J**

**092007-011 Attachment E  
 Special Condition 1E  
 NO<sub>x</sub> Monthly Compliance Work Sheet**

For Month \_\_\_\_\_ Year \_\_\_\_\_

Emission Point	Gal of gasoline combusted in the emission point or standard cubic feet used of natural gas	Heating Value of Gasoline (MMBTU/gal)	Nox (lbs/MMBTU) or (100lb/10 <sup>6</sup> scf)	Nox Pounds	Conversion (lbs to tons)	Tons of Nox
ETF2 Thru ETF13	0.0000	0.1300	1.63	0.000000	0.0005	0.000000
AET12	0.0000	0.1300	1.63	0.000000	0.0005	0.000000
SH1	0.0000	NA	{100lb/(1x10 <sup>6</sup> scf)}	0.000000	0.0005	0.000000
Monthly Total Tons:						0.000000
<b>12 Month Rolling Cumulative Tons:</b>						
<p>A rolling 12-Month HAP emission total of less than forty (40) tons of Nox emissions from emission points ETF2 through ETF13, AET12 and SH1 at the installation indicates compliance.</p>						

**Attachment K**

**092007-011 Attachment G  
 HAP Screen Modeling Action Level (SMAL) Compliance Record\***

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
HAP Identification	Screen Modeling Action Level (ton/yr) (Note 1)	Density of Sealant (lb/gal)	Individual HAP Content (Weight %)	Maximum Hourly Design Rate (gal/hr) (Note 2)	Annual HAP Emissions (tons/yr) (Note 3)
				0.786	
				0.786	
				0.786	
				0.786	
				0.786	
				0.786	

This tracking sheet only refers to HAPs with a SMAL less than 10 tons per year.

Note 1: Screen Modeling Action Levels for individual HAPs can be found in the "Supplemental Information Package" of the construction permit application (page 21).

Note 2: The Maximum Hourly Design Rate is assumed to not change with the use of a different sealant.

Note 3: Column 6 =  $\text{Column 3} \times \text{Column 4} \times \text{Column 5} \times 8760$ .

HAP emissions of no more than the SMAL 2000 given in Column 2 indicate compliance.

**Attachment L**

**062001-001A: Attachment A: VOC and HAPs Compliance Record**

This sheet covers the Sealant: \_\_\_\_\_

(Copy this sheet as needed)

**Hazardous Air Pollutant Compliance Tracking\*:**

Column 1	Column 2	Column 3	Column 4
HAP Identification	Density of Sealant (lb/gal)	Individual HAP Content (Weight %)	HAP Emissions per Gallon of Sealant (lb/gal) (Note 1)
Sum of HAPs (lb/gal) (Note 2) =			

This tracking sheet only refers to HAPs with a Screen Modeling Action Level (SMAL) of 10 tons per year.

Note 1: Column 4 = Column 2 x Column 3. Individual HAP emissions of no more than 2.91 pounds per gallon indicate compliance.

Note 2: Sum of Column 4. Total HAPs emissions of no more than 7.26 pounds per gallon indicate compliance.

## STATEMENT OF BASIS

### Permit Reference Documents

These documents were relied upon in the preparation of the operating permit. Because they are not incorporated by reference, they are not an official part of the operating permit.

- 1) Part 70 Operating Permit Application, received July 30, 2009;
- 2) 2008 Emissions Inventory Questionnaire
- 3) U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*; Volume I, Stationary Point and Area Sources, Fifth Edition.

### Applicable Requirements Included in the Operating Permit but Not in the Application or Previous Operating Permits

None

### Other Air Regulations Determined Not to Apply to the Operating Permit

The Air Pollution Control Program (APCP) has determined the following requirements to not be applicable to this installation at this time for the reasons stated.

10 CSR 10-6.100, *Alternate Emission Limits*

This rule is not applicable because the installation is located in an attainment area for all pollutants.

### Construction Permit Revisions

The following revisions were made to construction permits for this installation:

None

082008-007 & 102009-004: These construction permit were amendment removing the emission limitations associated with fluorides and their associated attachments, based on new information made available after the construction permit was issued and amended. There is no emission increases associated with these amendments. Because the removal of an emission limitation requires a significant modification, this operating permit version is produced. Only the “greyed” portions of the operating permit are open for comment or change. Because this is a modification and not a renewed operating permit, the original operating permit expiration remains same (May 2, 2015). The additional material made available has been included in the enclosure to this statement.

### New Source Performance Standards (NSPS) Applicability

None

### Maximum Achievable Control Technology (MACT) Applicability

None

### National Emission Standards for Hazardous Air Pollutants (NESHAP) Applicability

In the permit application and according to Air Pollution Control Program records, there was no indication that any Missouri Air Conservation Law, Asbestos Abatement, 643.225 through 643.250; 10 CSR 10-6.080, Emission Standards for Hazardous Air Pollutants, Subpart M, National Standards for Asbestos; and 10 CSR 10-6.250, Asbestos Abatement Projects - Certification, Accreditation, and

Business Exemption Requirements apply to this installation. The installation is subject to these regulations if they undertake any projects that deal with or involve any asbestos containing materials. None of the installation's operating projects underway at the time of this review deal with or involve asbestos containing material. Therefore, the above regulations were not cited in the operating permit. If the installation should undertake any construction or demolition projects in the future that deal with or involve any asbestos containing materials, the installation must follow all of the applicable requirements of the above rules related to that specific project.

**Compliance Assurance Monitoring (CAM) Applicability**

40 CFR Part 64, *Compliance Assurance Monitoring (CAM)*

The CAM rule applies to each pollutant specific emission unit that:

- Is subject to an emission limitation or standard, and
- Uses a control device to achieve compliance, and
- Has pre-controlled emissions that exceed or are equivalent to the major source threshold.

The only pollutant of concern for CAM purposes is PM<sub>10</sub>, since there is no control on other pollutants. As the table below demonstrates none of the emission units of any significance emit near the major source threshold. All the furnaces are less than 20% of the major source threshold at their uncontrolled rate.

EU_ID	DESCRIPTION	STATUS	Potential to Emit (w/o control)	CAM Threshold	Percent of Threshold
DCF01	ALUMINUM ALLOY #1 MELTING FURNACE	Active	8.5	100.0	8.5%
DCF03	ALUMINUM ALLOY #2 MELTING FURNACE	Active	8.5	100.0	8.5%
DCF05	ALUMINUM ALLOY #3 MELTING FURNACE	Active	8.5	100.0	8.5%
DCF07	ALUMINUM ALLOY #4 MELTING FURNACE	Active	8.5	100.0	8.5%
DCF09	ALUMINUM ALLOY #5 MELTING FURNACE	Active	8.5	100.0	8.5%
DCF11	ALUMINUM ALLOY #6 MELTING FURNACE	Active	8.2	100.0	8.2%
DCF13	ALUMINUM ALLOY #7 MELTING FURNACE	Active	18.8	100.0	18.8%
DCF15	ALUMINUM ALLOY #8 MELTING FURNACE	Active	18.8	100.0	18.8%
DCF17	ALUMINUM ALLOY #9 MELTING FURNACE	Future	7.3	100.0	7.3%
IM1	PLASTIC INJECTION MOLDING PROCESS - PP	Active	0.7	100.0	0.7%
IM2	PLASTIC INJECTION MOLDING PROCESS - PP	Active	0.7	100.0	0.7%

**Other Regulatory Determinations**

Below is the analysis and demonstration of compliance with 10 CSR 10-6.400, Restriction of Particulate Matter from Industrial Processes. Aluminum alloy melting furnaces #6, #7, #8 and #9 all have electrostatic precipitators directly overhead in the furnace rooms.

EU_ID	DESCRIPTION	STATUS	Max Emission Rate	10 CSR 10-6.400 Limit	Percent of Limit
DCF01	ALUMINUM ALLOY #1 MELTING FURNACE	Active	1.9	2.4	80.6%
DCF03	ALUMINUM ALLOY #2 MELTING FURNACE	Active	1.9	2.4	80.6%
DCF05	ALUMINUM ALLOY #3 MELTING FURNACE	Active	1.9	2.4	80.6%
DCF07	ALUMINUM ALLOY #4 MELTING FURNACE	Active	1.9	2.4	80.6%
DCF09	ALUMINUM ALLOY #5 MELTING FURNACE	Active	1.9	2.4	80.6%
DCF11	ALUMINUM ALLOY #6 MELTING FURNACE	Active	0.6	2.3	24.1%
DCF13	ALUMINUM ALLOY #7 MELTING FURNACE	Active	1.3	4.1	31.7%
DCF15	ALUMINUM ALLOY #8 MELTING FURNACE	Active	1.3	4.1	31.7%
DCF17	ALUMINUM ALLOY #9 MELTING FURNACE	Future	0.5	2.2	23.1%
IM1	PLASTIC INJECTION MOLDING PROCESS – PP	Active	0.2	0.8	21.2%
IM2	PLASTIC INJECTION MOLDING PROCESS – PP	Active	0.2	0.8	21.2%

**Other Regulations Not Cited in the Operating Permit or the Above Statement of Basis**

Any regulation which is not specifically listed in either the Operating Permit or in the above Statement of Basis does not appear, based on this review, to be an applicable requirement for this installation for one or more of the following reasons:

- 1) The specific pollutant regulated by that rule is not emitted by the installation;
- 2) The installation is not in the source category regulated by that rule;
- 3) The installation is not in the county or specific area that is regulated under the authority of that rule;
- 4) The installation does not contain the type of emission unit which is regulated by that rule;
- 5) The rule is only for administrative purposes.

Should a later determination conclude that the installation is subject to one or more of the regulations cited in this Statement of Basis or other regulations which were not cited, the installation shall determine and demonstrate, to the Air Pollution Control Program's satisfaction, the installation's compliance with that regulation(s). If the installation is not in compliance with a regulation which was not previously cited, the installation shall submit to the Air Pollution Control Program a schedule for achieving compliance for that regulation(s).

Prepared by:

---

Randy E. Raymond  
 Environmental Engineer



**Wall fluxing.** This process consists of spraying a flux on certain parts of the furnace walls where the flux collects/gathers the impurities and aluminum oxide.

After the fluxing process (both wall and well) is completed the furnace is cleaned of the dross (collected/gathered by the flux). The walls are scraped where the dross falls into the well, at that point the well is raked clean of the wall and well dross. Kawasaki Motors then has the dross recycled when it is sold to a metals recycling company.

I have included a copy of a letter from one of our flux suppliers. After searching the hydrogen fluoride issue with our suppliers, engineering and other flux companies it is our opinion the most, if not all of our fluorides are collected in the dross, this includes any chance of hydrogen fluoride.

We would like to amend the permit by having the hydrogen fluoride statement removed. If it cannot be removed can we please get clarification as to the intent of the statement and how to actually account for this (hydrogen fluoride)?

#### Die Cast Machine

On October 12, 2011 a representative from the Missouri Dept. of Natural Resources conducted an audit. During the audit two items in particular were discovered. The second item is the issue of an ESP on DCF18. Construction permit 102009-004 (pg3, para 3) states;

#### **“Control Device Requirement-Electrostatic Precipitators (ESP)”**

- A. “Kawasaki Motors Manufacturing Corporation shall control emissions from the aluminum die cast machine (EU-DCF18) using an ESP as specified in the permit application.**
- B. The ESP shall be operated and maintained in accordance with the manufactures specifications.**
- C. Kawasaki Motors Manufacturing Corporation shall maintain an operating and maintenance log for the ESP which shall include the following:**
  - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective action; and**
  - 2) Maintenance activities, with inspection schedule, repair actions, and replacements ect.”**

The issue is that DCF18 does not have an ESP installed as per the permit. What is installed is a Com Tech filter unit, the Com Tech filter uses a combination of impengers and media filters to clean the air. The filter system will clean the air to 95% efficiency (the same as an ESP) by ASHRAE 52.1 test method. The filter system includes a blower at 6,000CFM to pull air thru the system. Access doors are provided on the filter system for maintenance access.

Kawasaki Motors Mfg. Corp. does operate and maintain the unit in accordance with the manufactures specifications. We also maintain an operating and maintenance log as referenced in 1) and 2).

Kawasaki Motors Manufacturing Corp would like to have the “ESP word changed to “combination impenger and media filter system”

We feel the above amendments will not affect the actual emissions, and will help us maintain compliance. If you would like any more information or have any questions or concerns please let me know.

# Syn<sup>thetic</sup>EX<sup>othermics</sup>

Synthetic Exothermics  
One Madison Street  
Newnan, Georgia 30263

Phone 770-253-7652  
Fax 866-894-4254  
[www-synex-flux.com](http://www-synex-flux.com)  
Charles Nielsen

Possible emission problems using Synex sf350 aluminum injection flux.

SF350 is designed to melt below the temperature of molten aluminum. After melting, the compounds are attracted to and chemically bond with impurities in the dross and aluminum. After bonding these compounds float to the surface for removal by the operator. Proper use by injection of sf350 should result in almost all of the flux combining with impurities in the melt.

SF350 does not contain chlorine or chlorides in any form that would form gas.

SF350 does contain fluoride compounds. These compounds decompose below the melting point of aluminum to form fluorine gas, which is highly attractive to hydrogen and other impurities in the molten aluminum bath. The level of fluorides in these compounds represent less than 22% of the total weight of the flux. This percentage is far lower than most other fluxes which contain combinations of fluorides and chlorides. Use of sf350 at the proper rate will remove hydrogen and associated impurities from molten aluminum. At the proper use rates very little smoke or fumes are generated. If the flux is used properly almost all of the fluoride will combine with the hydrogen and associated impurities in the aluminum bath. These should float to the top and become part of the dross.

SF350 should be used strictly as an injection flux so that the fluorine can react with impurities in the molten aluminum and float to the top as a non reactive dross. Use of sf350 by injection at the proper rate will remove hydrogen from the aluminum. By using the injection method possible emission problems are minimized. At the proper use rates very little smoke or fumes are generated. Overuse of the flux could possibly result in excessive smoke.

Proper use of the flux requires the burners to be on low fire during the fluxing operation. This will ensure that temperatures are well below the level that most decomposition would occur. Proper training of operators should result in minimal emission problems.

# Syn<sup>thetic</sup>EX<sup>othermics</sup>

Synthetic Exothermics  
One Madison Street  
Newnan, Georgia 30263

Phone 770-253-7652  
Fax 866-894-4254  
synex-flux.com

Possible emission problems using our sf206 aluminum flux.

Sf206 is designed to melt below the temperature of molten aluminum. After melting, the compounds adhere to and chemically bond with impurities in the dross and aluminum. After bonding these compounds float to the surface for removal by the operator. Proper use of sf206 should result in almost all of the flux combining with impurities in the melt.

Sf206 does not contain chlorine (such as hex) in any form that would form gas at normal operating temperatures of an aluminum furnace.

Sf206 does contain potassium chloride (potash). The chloride in these compounds represent approximately 30% of the weight of the flux. These materials could decompose into chlorine compounds at extremely elevated temperatures. These temperatures would be in excess of 2400 degrees F.

Sf206 also contains fluoride compounds. These compounds decompose at 1650 degrees F. The level of fluorides in these compounds represent less than 10% of the total weight of the flux. Use of sf206 at the proper rate will remove hydrogen and associated impurities from molten aluminum. At the proper use rates very little smoke or fumes are generated. If the flux is used properly almost all of the fluoride will combine with the hydrogen and associated impurities in the aluminum bath. These should float to the top and become part of the dross.

In order for any decomposition of either the fluorides or chlorides to occur, the flux would have to be subjected to direct flame impingement. If the burners are properly adjusted and not directed directly onto the metal, impingement should not occur.

SF206 can also be used as an injection flux so that the ingredients can react with impurities in the molten aluminum and float to the top as a non reactive dross. By using the injection method, possible emission problems are minimized. At the proper use rates, very little smoke or fumes are generated. Overuse of the flux could possibly result in excessive smoke.

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Product Application Manager  
Non Ferrous Products

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cc: J. Erman, R. Richardson, D. Harty, A. Karim, T. Hardy

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