MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

October 31, 2016

PERMIT TO INSTALL
92-16

ISSUED TO
Sakthi Automotive Group USA, Inc.

LOCATED AT
201 Waterman Street
Detroit, Michigan

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
P0380

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

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: **September 6, 2016**	
DATE PERMIT TO INSTALL APPROVED: **October 31, 2016**	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

Common Acronyms		Pollutant / Measurement Abbreviations	
AQD	Air Quality Division	acfm	Actual cubic feet per minute
BACT	Best Available Control Technology	BTU	British Thermal Unit
CAA	Clean Air Act	°C	Degrees Celsius
CAM	Compliance Assurance Monitoring	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	CO_2e	Carbon Dioxide Equivalent
CFR	Code of Federal Regulations	dscf	Dry standard cubic foot
COM	Continuous Opacity Monitoring	dscm	Dry standard cubic meter
Department/ department	Michigan Department of Environmental Quality	°F	Degrees Fahrenheit
		gr	Grains
EU	Emission Unit	HAP	Hazardous Air Pollutant
FG	Flexible Group	Hg	Mercury
GACS	Gallons of Applied Coating Solids	hr	Hour
GC	General Condition	HP	Horsepower
GHGs	Greenhouse Gases	H_2S	Hydrogen Sulfide
HVLP	High Volume Low Pressure*	kW	Kilowatt
ID	Identification	lb	Pound
IRSL	Initial Risk Screening Level	m	Meter
ITSL	Initial Threshold Screening Level	mg	Milligram
LAER	Lowest Achievable Emission Rate	mm	Millimeter
MACT	Maximum Achievable Control Technology	MM	Million
MAERS	Michigan Air Emissions Reporting System	MW	Megawatts
MAP	Malfunction Abatement Plan	NMOC	Non-methane Organic Compounds
MDEQ	Michigan Department of Environmental Quality	NO_x	Oxides of Nitrogen
		ng	Nanogram
MSDS	Material Safety Data Sheet	PM	Particulate Matter
NA	Not Applicable	PM10	Particulate Matter equal to or less than 10 microns in diameter
NAAQS	National Ambient Air Quality Standards		
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
NSPS	New Source Performance Standards	pph	Pounds per hour
NSR	New Source Review	ppm	Parts per million
PS	Performance Specification	ppmv	Parts per million by volume
PSD	Prevention of Significant Deterioration	ppmw	Parts per million by weight
PTE	Permanent Total Enclosure	psia	Pounds per square inch absolute
PTI	Permit to Install	psig	Pounds per square inch gauge
RACT	Reasonable Available Control Technology	scf	Standard cubic feet
ROP	Renewable Operating Permit	sec	Seconds
SC	Special Condition	SO_2	Sulfur Dioxide
SCR	Selective Catalytic Reduction	TAC	Toxic Air Contaminant
SNCR	Selective Non-Catalytic Reduction	Temp	Temperature
SRN	State Registration Number	THC	Total Hydrocarbons
TEQ	Toxicity Equivalence Quotient	tpy	Tons per year
USEPA/EPA	United States Environmental Protection Agency	µg	Microgram
		µm	Micrometer or Micron
VE	Visible Emissions	VOC	Volatile Organic Compounds
		yr	Year

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**

2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**

3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**

4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**

5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**

6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**

7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**

8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.

9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
    a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
    b) A visible emission limit specified by an applicable federal new source performance standard.
    c) A visible emission limit specified as a condition of this Permit to Install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

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

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EUMELTING	3 natural gas fired stack melter melting furnaces. Combined design heat input rating: Maximum 20.2 MMBtu/hr total heat input (6.7 MMBtu/hr each). Clean charge. Furnace charging and melting. Includes fluxing.	To be determined	FGFLUXING
EUHOLDING	30 electrically heated crucible holding furnaces; degassing, fluxing, casting and quench. Sprue and riser removal.	To be determined	FGFLUXING
EUHEATTREAT	2 natural gas fired heat treating furnaces. Design heat input rating: 6.2 MMBtu/hr each.	To be determined	NA
EUMISC	Includes Fluorescent Liquid Penetrant Inspection system with a 2.2 MMBtu/hr natural gas fired water heater; finishing processes; die cleaning; natural gas fired HVAC equipment (40.4 MMBtu/hr heat input)	To be determined	NA
Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.			

The following conditions apply to: EUMELTING

DESCRIPTION: 3 natural gas fired stack melter melting furnaces. Combined design heat input rating: Maximum 20.2 MMBtu/hr total heat input (6.7 MMBtu/hr each). Clean charge. Furnace charging and melting. Includes fluxing.

Flexible Group ID: FGFLUXING

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. VE	10% opacity	6-minute average	EUMELTING	SC V.1	R 336.1301
2. PM	0.010 gr/dscf	Test Protocol*	EUMELTING	SC V.1	R 336.1331(c), R 336.1225
3. PM10	0.38 pph	Test Protocol*	EUMELTING	SC V.1	R 336.1225, 40 CFR 52.21(c)&(d)
4. PM2.5	0.38 pph	Test Protocol*	EUMELTING	SC V.1	R 336.1225, 40 CFR 52.21(c)&(d)
*Test Protocol shall specify averaging time.					

II. MATERIAL LIMITS

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. metal charged	27,158 tpy	12-month rolling time period as determined at the end of each calendar month	EUMELTING	SC VI.2	R 336.1224, R 336.1225 40 CFR 52.21(c)&(d)

2. The permittee shall melt in EUMELTING only clean charge as defined by 40 CFR Part 63 Subpart RRR. This condition is necessary to avoid requirements of 40 CFR Part 63 Subpart RRR, National Emission Standards for Secondary Aluminum Production. *Clean charge* means furnace charge materials, including molten aluminum; T-bar; sow; ingot; billet; pig; alloying elements; aluminum scrap known by the owner or operator to be entirely free of paints, coatings, and lubricants; uncoated/unpainted aluminum chips that have been thermally dried or treated by a centrifugal cleaner; aluminum scrap dried at 343 °C (650 °F) or higher; aluminum scrap delacquered/decoated at 482 °C (900 °F) or higher; and runaround scrap. Anodized aluminum that contains dyes or sealants containing organic compounds is not clean charge. **(R 336.1224, R 336.1225, 40 CFR Part 63 Subpart RRR, §63.1500(f))**

3. The permittee shall burn only natural gas in EUMELTING. **(R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d))**

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate EUMELTING unless low NO_x burners are installed and maintained in each melting furnace. **(40 CFR 52.21(c) & (d))**

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

1. Upon request from the AQD District Supervisor, the permittee may be required to verify VE and PM, PM10, PM2.5, HCl, and HF emission rates from EUMELTING by testing at owner's expense, in accordance with Department requirements. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1225, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the 30th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1201(3), R 336.1225)**

2. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period records of the amount of metal charged to EUMELTING. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1201(3), R 336.1225, 40 CFR 52.21(c)&(d))**

3. The permittee shall keep on a calendar day basis, in a satisfactory manner, a log of the cleaning and cover flux material usage rates in EUMELTING. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1225, 40 CFR 52.21(c)&(d))**

4. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each flux material used in EUMELTING, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall calculate the chlorine and fluorine flux injection rates using the modified version of the calculation method specified in 40 CFR 63.1512(o) included as Appendix A of this Permit to Install. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1224, R 336.1225)**

5. The permittee shall keep in a satisfactory manner, monthly and 12-month rolling time period emission calculation records of PM, PM10, PM2.5, HCl, and HF for EUMELTING. If stack test results for EUMELTING exist for any of the aforementioned pollutants, those stack test results may be used to estimate pollutant emissions subject to the approval of the AQD. In the event that stack test results do not exist for a specific pollutant, the best available emission factor shall be used to estimate the emissions of a pollutant from EUMELTING. All records shall be kept on file and made available to the Department upon request. **(R 336.1205(1)(a), R 336.1224, R 336.1225)**

6. The permittee shall maintain a record of each delivery of clean charge material used in EUMELTING, including supplier verification that the material meets the definition in SC II.2. The record may consist of shipping manifests, written descriptions, photographs or other information deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1224, R 336.1225)**

7. The permittee shall keep on a calendar day basis, in a satisfactory manner, a log of the hours of operation for each furnace in EUMELTING. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1225, 40 CFR 52.21(c)&(d))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

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

Stack & Vent ID	Maximum Exhaust Diameter (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV-MF1	35	42	40 CFR 52.21(c) & (d) R 336.1225
2. SV-MF2	35	42	40 CFR 52.21(c) & (d) R 336.1225
3. SV-MF3	35	42	40 CFR 52.21(c) & (d) R 336.1225

IX. OTHER REQUIREMENTS

NA

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

The following conditions apply to: EUHOLDING

DESCRIPTION: 30 electrically heated crucible holding furnaces; degassing, flux fugitive emissions, casting and quench. Sprue and riser removal.

Flexible Group ID: FGFLUXING

POLLUTION CONTROL EQUIPMENT: NA--fugitive in-plant emissions through roof vents

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

NA

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

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

Stack & Vent ID	Maximum Exhaust Diameter (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. 28 roof vents	66 (each vent)	38.4 (each vent)	40 CFR 52.21(c) & (d) R 336.1225

IX. OTHER REQUIREMENTS

NA

Footnotes:

[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

The following conditions apply to: EUHEATTREAT

DESCRIPTION: 2 natural gas fired heat treating furnaces. Design heat input rating: 6.2 MMBtu/hr each.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

1. The permittee shall only burn natural gas in EUHEATTREAT. **(R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d))**

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate EUHEATTREAT unless low NO_x burners are installed and maintained in each heat treating furnace. **(40 CFR 52.21(c) & (d))**

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall keep on a calendar day basis, in a satisfactory manner, a log of the hours of operation for each furnace in EUHEATTREAT. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(40 CFR 52.21(c)&(d))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

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

Stack & Vent ID	Maximum Exhaust Diameter (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV-HTREAT1	24	42	40 CFR 52.21(c) & (d) R 336.1225
2. SV-HTREAT2	24	42	40 CFR 52.21(c) & (d) R 336.1225

IX. OTHER REQUIREMENTS

NA

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FLEXIBLE GROUP SUMMARY TABLE

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

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGFLUXING	All process equipment source-wide where flux material is added to the melted metal or is used in a furnace.	EUMELTING, EUHOLDING

The following conditions apply Source-Wide to: FGFLUXING

DESCRIPTION: All process equipment source-wide where flux material is added to the melted metal or is used in a furnace.

Emission Units: EUMELTING, EUHOLDING

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. cleaning and cover flux material[1]	250 lbs/day	Monthly average	FGFLUXING	SC VI.1	R 336.1205(3) R 336.1224, R 336.1225 40 CFR 52.21(c)&(d)
2. Flux injection rate	0.99 lb chlorine per ton of charge	Monthly average	FGFLUXING	SC VI.2	R 336.1205(3) R 336.1224, R 336.1225
3. Flux injection rate	0.31 lb fluorine per ton of charge	Monthly average	FGFLUXING	SC VI.2	R 336.1205(3) R 336.1224, R 336.1225

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall keep on a calendar day basis, in a satisfactory manner, a log of the cleaning and cover flux material usage rates in FGFLUXING. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1225, 40 CFR 52.21(c)&(d))**

2. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each flux material used in FGFLUXING, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall calculate the chlorine and fluorine flux injection rates using the modified version of the calculation method specified in 40 CFR 63.1512(o) included as Appendix A of this Permit to Install. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1224, R 336.1225)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

Footnotes:

[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

APPENDIX A: Flux injection Rate

Flux injection rate. The permittee shall use these procedures to establish an operating parameter value or range for the total chlorine flux injection rate and the total fluorine flux injection rate.

(1) Measure and record the weight of flux injected for each month of operation of each emission unit where flux is used.

(2) Record the identity, composition, and total weight of each addition of flux for each month of operation of each emission unit where flux is used.

(3) Determine the total chlorine flux injection rate and the total fluorine flux injection rate by adding the recorded measurement of the total weight of chlorine and fluorine in the flux using Equation 5:

$$W_t = F_1 W_1 + F_2 W_2 \qquad \text{(Eq. 5)}$$

Where:

W_t = Total chlorine or fluorine usage, by weight;

F_1 = Fraction of flux No. 1 that is chlorine (*e.g.*, F = 0.75 for magnesium chloride) or fraction of flux No. 2 that is fluorine (*e.g.*, F = 0.33 for potassium fluoride);

W_1 = Weight of flux No. 1 injected;

F_2 = Fraction of flux No. 2 that is chlorine (*e.g.*, F = 0.75 for magnesium chloride) or fraction of flux No. 2 that is fluorine (*e.g.*, F = 0.33 for potassium fluoride); and

W_2 = Weight of flux No. 2 injected

(4) Divide the weight of total chlorine or fluorine usage (W_t) for the month by the recorded measurement of the total weight of feed for the month.

(5) If a flux other than magnesium chloride or potassium fluoride is used, the owner or operator must derive the appropriate proportion factor subject to approval by the AQD District Supervisor.