



HAZARDOUS AIR POLLUTANT EMISSIONS CALCULATOR

In 2016, the emissions estimator was enhanced to improve the hazardous air pollutant (HAP) estimates generated by the Michigan Air Emissions Reporting System (MAERS). Since then, each HAP estimate is created following a tiered procedure. The procedure invokes each tier in series (Tier 1 – 5). Once an estimate is calculated, the remaining tiers are ignored.

Tier	Description
1	<p>Facility Specific Emission Factor</p> <p>The MAERS Coordinator can add facility specific HAP emission factors (EF) for reported activities (Source Classification Codes, SCC). A request to add a HAP EF is made by facility personnel (the emissions inventory contact or the primary preparer listed in MAERS) via e-mail to InfoMAERS@michigan.gov. Requests should include supporting documentation which justifies use of the facility's specific HAP EF rather than the MAERS default EF.</p> <p>Information required for facility specific factors:</p> <ul style="list-style-type: none">• SCC• Pollutant• Emission Factor• Exponent• Supporting Documentation <p>Where supplied, the HAP emissions calculator will then use the facility specific EF for that pollutant.</p>
2	<p>Controlled HAP Emission Factor, SCC, pollutant, and control device match</p> <p>If there is a MAERS EF that matches the SCC, pollutant and control device, the emissions calculator will use the controlled EF instead of the uncontrolled factor.</p> <p>Click on the System Utilities tab in MAERS to view a list of controlled Emission Factors. Or, go to MAERS Reference Tables and click on Emission Factors.</p>
3	<p>Uncontrolled HAP Emission Factor using particulate matter control efficiency provided by facility user</p> <p>Facilities may choose to enter a control efficiency (CE) on the Activity and Emissions Form (Emissions tab) for particulate emissions (see Group A, page 3). Where entered, the CE will be applied along with the uncontrolled EF for applicable pollutants (see Group B, page 3).</p>
4	<p>Uncontrolled MAERS HAP Emission Factor using default control efficiency</p> <p>If there is a MAERS EF, the emissions calculator will use the default CE for the pollutant and control device if applicable. A list of these default CEs is available on-line.</p>

Tier	Description
5	Uncontrolled MAERS HAP Emission Factor When no CE is available, an uncontrolled MAERS HAP estimate will be calculated for a specific SCC and pollutant.

Facilities can see which tier was used to perform the HAPs emission calculation for their MAERS report. Go to “Report Management” and click “Other Reports.” Then select the “Emission Comparison – SCC Detail Report.” The HAP calculation tiers are shown on the right side of the page under the “AQD Calculated Emissions” section in the “Tier” column.

Michigan Air Emissions Reporting System (MAERS)
Emissions Comparison - SCC Details

AQD Source ID (SRN): _____ Reporting Year: 2018
 Source Name: _____
 Source Locations: _____

AQD Emission Unit ID	EU0176	Emission Unit ID	EULK29	Dismantle Date	Remove Date									
SCC Code	SCC Reference Description	Remove Date	Material Code	Material Throughput	Unit Code	VOC Wt%	Sulfur Wt%	Ash Wt%	Density					
30700106	Lime Kiln		A/D UNBL PLP	79900	TON									
SOURCE REPORTED EMISSIONS								AQD CALCULATED EMISSIONS						
Pollutant	Amount	Unit	Emiss Basis	Factor	Exp	Factor Unit	Cntl%	Tier	Pollutant	Amount	Unit	Factor	Exp	Factor Unit
CO	4395.0000	LB	Other	5.5	-2	LB/TON			CO	7990.0000	LB	1	-1	TON
LEAD	0.7000	LB	Other	9	-6	LB/TON			LEAD	0.3700	LB	1.088	-4	TON
NOX	55930.0000	LB	Other	7	-1	LB/TON			NOX	223720.0000	LB	2.8	0	TON
PM10,FLTRBLE	32280.0000	LB	Other	4.04	-1	LB/TON	95.7		PM10,FLTRBLE	32295.5800	LB	9.4	0	TON
PM2.5,FLTRBL	32280.0000	LB	Other	4.037	-1	LB/TON			PM2.5,FLTRBL	20270.6300	LB	5.9	0	TON
SO2	2578.0000	LB	Other	3.23	-2	LB/TON			SO2	23970.0000	LB	3	-1	TON
VOC	2761.0000	LB	Other	3.46	-2	LB/TON			VOC	19975.0000	LB	2.5	-1	TON
ACETALDEHYDE		LB						1	ACETALDEHYDE	68.6341	LB	7.4	-5	
ARSENIC		LB						3	ARSENIC	0.001606	LB	4.68	-7	TON
BERYLLIUM		LB						3	BERYLLIUM	0.02680	LB	7.8	-6	TON
CADMIUM		LB						3	CADMIUM	0.006940	LB	2.02	-6	TON
CHROMIUM		LB						3	CHROMIUM	1.6010	LB	4.66	-4	TON
COPPER		LB						1	COPPER	0.08784	LB	2.8	-5	
FLUORANTHENE		LB						5	FLUORANTHENE	0.2781	LB	3.48	-6	TON
HCL		LB						4	HCL	0.008789	LB	2.2	-6	TON
MANGANESE		LB						3	MANGANESE	0.1202	LB	3.5	-5	TON
MERCURY		LB						4	MERCURY	0.02178	LB	2.9	-7	TON
METH ETH KET		LB						1	METH ETH KET	41.5480	LB			
METHANOL		LB						1	METHANOL	425.0680	LB			
NICKEL		LB						1	NICKEL	0.5840	LB	1.29	-4	
SELENIUM		LB						3	SELENIUM	0.001388	LB	4.04	-7	TON

If you have questions related to the MAERS HAP emissions calculator, please send an e-mail to InfoMAERS@michigan.gov.

SUBSTANCES SUBJECT TO PARTICULATE MATTER CONTROL EFFICIENCY

Group A	Group B
PM10,PRIMARY	ANTIMONY
PM10,FLTRBLE	ARSENIC
PM2.5,PRIMRY	ASBESTOS
PM2.5,FLTRBL	BENZ(GHI)PE
	BERYLLIUM
	CADMIUM
	CALCIUM
	CHROMIUM
	CHROMIUM VI
	COBALT
	COPPER
	LEAD
	MANGANESE
	NICKEL
	PM10,PRIMARY
	PM2.5,PRIMRY
	SELENIUM