



# Environmental Perspective

## Eco-Pave 69PB

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Midwest was founded in 1975 to deliver solutions to help customers solve environmental issues. Today, that mission continues, but the emphasis has shifted. The environmental solution starts long before the application of the product, it starts in the lab. Product development starts with the environment in mind, continues with rigorous ecotoxicological impact testing and finishes with flawless delivery and application.

Selection of the right product for your installation is more than looking at the lowest cost or best control performance. The selection process is different for every customer and every installation. Midwest takes a holistic approach to product selection. Performance, value, regulatory constraints, operational concerns, climate, customer preferences and environmental and health and safety impact are all components of that decision.

There is no regulation that dictates what a dust suppressant or stabilization agent should or should not contain. We do not feel that customers should rely on the “word” of the vendor that their product is “safe”. Midwest has sought out numerous regulatory bodies and experts on environmental impact to develop a best practice for determining potential environmental impact for chemical dust suppressants and stabilization agents.

Best practice includes: understanding of site requirements, unblemished installation and transparent knowledge of product being applied. Part of the transparent knowledge is comprehensive ecotoxicity data. This information includes:

- SDS review
- Bulk analysis
  - o Volatiles EPA 8260
  - o Semi Volatiles EPA 8270
  - o TCLP (toxicity characteristic leaching procedure EPA 1311)
  - o Inorganics various EPA and ASTM methods
- Aquatic toxicity various EPA methods
  - o Ceriodaphnia dubia, acute and chronic (water flea)
  - o Pimephales promelas, acute and chronic (fathead minnow)
  - o Oncorhynchus mykiss, acute and chronic (rainbow trout)

Midwest Industrial Supply, Inc.  
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Midwest works with third party testing labs to perform testing on our products. All testing is completed on the “as received” chemical. Test data is attached for your review. Interpretation of the data is the real challenge...What does this mean?...How will this chemical impact my operations?

The EPA has provided two methods to put the data into perspective. Regional Screening Level (RSL) tables for assessing bulk analysis and EPA guidelines for screening aquatic toxicity.

Constituents detected in bulk analysis are compared to levels in the tables of “United States Environmental Protection Agency, Regional Screening Levels for Chemical Contaminants at Superfund Sites <https://www.epa.gov/risk/regional-screening-levels-rsls> .

The RSL tables compare values of exposure of numerous hazardous chemicals in various media: residential soil, industrial soil, air, drinking water. Midwest uses this data and compares it to bulk analysis results as well as calculated levels in residential soil (calculations are based on typical application rate of chemical to the soil). This data is attached in the following pages.

The second method of evaluation uses the EPA guidelines for LC<sub>50</sub> (lethal concentration in 50% of population), suggested toxicity criteria for materials.

LC <sub>50</sub> (mg/L)	Category Description
<0.1	Very highly toxic
0.1 – 1	Highly toxic
1 – 10	Moderately toxic
10 –100	Slightly toxic
>100	Practically non-toxic

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## Eco-Pave 69PB

### Bulk Analysis

Eco-pave 69PB is polymer-enhanced, resin based organic emulsion that is one of the options for stabilization in our GreenPave solution portfolio. Eco-Pave 69PB is blended into existing native soils, gravel or recycled materials to create a stable sub-base.

Bulk analysis was performed on Eco-Pave 69PB in the “as received” form (Cardinal Environmental Labs, LLC 2016, available upon request). Most analytes were not detected in Eco-Pave 69PB. The results of those detected were compared to the US EPA Regional Screening Levels (RSL) for residential soil and no constituents were above screening levels.

Eco-Pave 69PB is mixed and blended into soil at levels determined through soil lab testing. However, for the purposes of this evaluation, calculation of the “as applied” soil levels are based on a typical application rate of 1 gal of Eco-Pave69PB / 20 ft<sup>2</sup> blended into 4 inches of soil. These calculations show that in-situ the levels of detected constituents is several magnitudes lower than EPA screening levels.

Constituent detected	result (mg/kg)	as applied soil level (mg/kg)	RSL residential soil (mg/Kg)
Antimony	11.200	0.090	31.000
Iron	73.100	0.580	55000.000
Zinc	3.530	0.028	23000.000
Copper	1.280	0.010	3100.000
Manganese	0.650	0.005	1800.000
Sulfate	259.000	2.070	N/A
Methylene chloride	5.930	0.047	57.000
Di-n-butylphthalate	1.550	0.012	6300.000

\* Sulfate has no regulatory level for soil or drinking water, however is a listed chemical on the National Secondary Drinking Water Regulation. At 250mg/L. Secondary standards address chemicals that have no health impact, but may cause aesthetic effects.

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# Environmental Perspective Eco-Pave 69PB

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## Aquatic Analysis

Aquatic testing was performed on “as received” Eco-pave 69PB (EnviroScience Labs, 2016, available upon request). Testing shows that in the concentrated form Eco-pave 69PB has an EPA toxicity rating for most tests as practically non-toxic. This testing demonstrates “worst case catastrophic scenario” and does not portray the typical application.

Aquatic species	acute LC <sub>50</sub> (mg/L)	chronic LC <sub>50</sub> (mg/L)
C. dubia (water flea)	>500	315.2
P. promelas (fathead minnow)	>500	>2000
O. mykiss (rainbow trout)	1275	354.2

Please feel free to contact me should you want to discuss the testing or your site needs.

Sincerely,

**Cheryl Detloff**

Chemist / Environmental Specialist

**MIDWEST INDUSTRIAL SUPPLY, INC.**

[Cheryl.detloff@midwestind.com](mailto:Cheryl.detloff@midwestind.com)

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# Environmental Perspective

## Eco-Pave 89PB

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Constituent detected	result (mg/kg)	as applied soil level (mg/kg)	RSL residential soil (mg/Kg)
Antimony	8.830	0.072	31.000
Iron	78.100	0.648	55000.000
Zinc	1.390	0.120	23000.000
Ethyl benzene	0.464	0.004	5.800
Isopropyl benzene	0.522	0.005	1900.000
Styrene	1.960	0.016	6000.000
Methylene chloride	49.100	0.408	57.000

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## Aquatic Analysis



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Aquatic species	acute LC <sub>50</sub> (mg/L)	chronic LC <sub>50</sub> (mg/L)
C. dubia (water flea)	>500	189.5
P. promelas (fathead minnow)	>500	>2000
O. mykiss (rainbow trout)	707.1	431.6

Please feel free to contact me should you want to discuss the testing or your site needs.

Sincerely,

**Cheryl Detloff**

Chemist / Environmental Specialist

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