

CLASSIFICATION: 03 05 10 Concrete: Moisture Vapor Reduction Admixture

PRODUCT DESCRIPTION: MVRA 900 is a non-toxic, volatile organic compound (VOC) free, liquid admixture formulated to react with the hydroxide ions produced by the cement hydration process. In doing so, MVRA 900 creates additional hydration products within the capillary pores and blocks them, effectively shutting down moisture vapor movement through the concrete. Manufactured with deionized water to remove trace mineral ions and containing no chloride based materials, MVRA 900 will not promote nor contribute to corrosion of embedded or reinforcing steel.

Section 1: Summary

Basic Method / Product Threshold

CONTENT INVENTORY

Inventory Reporting Format

- Nested Materials Method
- Basic Method

Threshold level

- 100 ppm
- 1,000 ppm
- Per GHS SDS
- Per OSHA MSDS
- Other

Residuals/Impurities

- Considered
- Partially Considered
- Not Considered

All Substances Above the Threshold Indicated Are:

Characterized Yes Ex/SC Yes No

% weight and role provided for all substances.

Screened Yes Ex/SC Yes No

All substances screened using Priority Hazard Lists with results disclosed.

Identified Yes Ex/SC Yes No

All substances disclosed by Name (Specific or Generic) and Identifier.

Threshold Disclosed Per

- Material
- Product

Explanation(s) provided for Residuals/Impurities?
 Yes No

CONTENT IN DESCENDING ORDER OF QUANTITY

Summary of product contents and results from screening individual chemical substances against HPD Priority Hazard Lists and the GreenScreen for Safer Chemicals®. The HPD does not assess whether using or handling this product will expose individuals to its chemical substances or any health risk. Refer to Section 2 for further details.

MATERIAL | SUBSTANCE | RESIDUAL OR IMPURITY

GREENSCREEN SCORE | HAZARD TYPE

MVRA 900 [WATER BM-4 SODIUM SILICATE LT-P1 | END CALCIUM HYDROXIDE LT-P1]

Number of Greenscreen BM-4/BM3 contents ... 1

Contents highest concern GreenScreen

Benchmark or List translator Score ... LT-P1

Nanomaterial ... No

INVENTORY AND SCREENING NOTES:

This Health Product Declaration (HPD) was completed in accordance with the HPD Standard version 2.0, and discloses hazards associated with all substances present at or above 100 parts per million (ppm) in the finished product, with a highest concern GreenScreen score of LT-UNK. Therefore, this HPD qualifies for the LEED v4 MR credits Building Product Disclosure and Optimization: Material Ingredient Reporting (Option 1) and Material Ingredient Optimization (Option 2).

VOLATILE ORGANIC COMPOUND (VOC) CONTENT

VOC Content data is not applicable for this product category.

CERTIFICATIONS AND COMPLIANCE See Section 3 for additional listings.

VOC emissions: Inherently non-emitting source per LEED®

Other: ASTM C494

Other: ASTM C1260

Other: ASTM D5084

CONSISTENCY WITH OTHER PROGRAMS

Pre-checked for LEED v4 Material Ingredients, Option 1 and Option 2

Third Party Verified?

- Yes
- No

PREPARER: Self-Prepared

VERIFIER:

VERIFICATION #:

SCREENING DATE: 2019-06-05

PUBLISHED DATE: 2019-07-24

EXPIRY DATE: 2022-06-05



Section 2: Content in Descending Order of Quantity

This section lists contents in a product based on specific threshold(s) and reports detailed health information including hazards. This HPD uses the inventory method indicated above, which is one of three possible methods:

- Basic Inventory method with Product-level threshold.
- Nested Material Inventory method with Product-level threshold
- Nested Material Inventory method with individual Material-level thresholds

Definitions and requirements for the three inventory methods and requirements for each data field can be found in the HPD Open Standard version 2.1.1, available on the HPDC website at: www.hpd-collaborative.org/hpd-2-1-1-standard

MVRA 900

PRODUCT THRESHOLD: 100 ppm

RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Each manufactured lot of MVRA 900 is produced under some of the most exacting chemical manufacturing processes available. This includes the use of deionized water, which prevents the introduction of chloride and sulfate into the concrete batching sequence. The remaining ingredients used are >97-99% pure according to Supplier statements. EDS, XRD, and FT-IR analyses of undissolved solids (>1 µm) filtered out of solution during the manufacturing process revealed the following: "compound consisted mostly of sodium, silicon, calcium, and oxygen; may be amorphous silica; crystalline phases identified were fedorite, scolecite, foshagite, coesite (SiO₂), and possibly hectorite. These are essentially calcium, sodium, or magnesium containing alumino-silicates or silicates." However, as these substances have been removed from solution during manufacturing, no residuals are expected to exist in the final product above the Inventory Threshold indicated.

OTHER PRODUCT NOTES:

WATER

ID: 7732-18-5

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**HAZARD SCREENING DATE: **2019-06-05**%: **60.00 - 80.00**GS: **BM-4**RC: **None**NANO: **No**ROLE: **Solvent**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found

No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: Using only deionized water as the base ingredient prevents the unwanted introduction of chloride and sulfate into the concrete batching sequence. The percent of this substance used is given as a range in order to protect the proprietary nature of this formulation.

SODIUM SILICATE

ID: 1344-09-8

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**HAZARD SCREENING DATE: **2019-06-05**%: **20.00 - 25.00**GS: **LT-P1**RC: **None**NANO: **No**ROLE: **Binding Agent; Corrosion Inhibitor**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

ENDOCRINE

TEDX - Potential Endocrine Disruptors

Potential Endocrine Disruptor

SUBSTANCE NOTES: Sodium silicate reacts with calcium ions from the cement mixture to form a calcium silicate hydrate gel, which is the final reaction product of the MVRA 900. The percent of this substance used is given as a range in order to protect the proprietary nature of this formulation.

CALCIUM HYDROXIDE

ID: 1305-62-0

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**HAZARD SCREENING DATE: **2019-06-05**%: **0.01 - 5.00**GS: **LT-P1**RC: **None**NANO: **No**ROLE: **Catalyst**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found

No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: The percent of this substance used is given as a range in order to protect the proprietary nature of this formulation.

Section 3: Certifications and Compliance

This section lists applicable certification and standards compliance information for VOC emissions and VOC content. Other types of health or environmental performance testing or certifications completed for the product may be provided.

VOC EMISSIONS

Inherently non-emitting source per LEED®

CERTIFYING PARTY: **Self-declared**

ISSUE DATE: **2019-**

EXPIRY DATE:

CERTIFIER OR LAB: **NA**

APPLICABLE FACILITIES: **All**

06-05

CERTIFICATE URL:

CERTIFICATION AND COMPLIANCE NOTES:

OTHER

ASTM C494

CERTIFYING PARTY: **Self-declared**

ISSUE DATE: **2016-**

EXPIRY DATE:

CERTIFIER OR LAB: **Burns Cooley**

APPLICABLE FACILITIES: **Gulfport, MS**

02-19

Dennis, Inc.

CERTIFICATE URL:

CERTIFICATION AND COMPLIANCE NOTES: **BCD Project Number: 140788. Results of testing show that the Type S admixture complies with the physical requirements presented in Table 1 of ASTM C494 "Standard Specification for Chemical Admixtures for Concrete" for non-air-entrained concrete. Results indicate 10% less shrinkage as compared to control 30 days from date of casting.**

OTHER

ASTM C1260

CERTIFYING PARTY: **Self-declared**

ISSUE DATE: **2015-**

EXPIRY DATE:

CERTIFIER OR LAB: **Burns Cooley**

APPLICABLE FACILITIES: **Gulfport, MS**

10-06

Dennis, Inc.

CERTIFICATE URL:

CERTIFICATION AND COMPLIANCE NOTES: **BCD Project Number: 140788-1. Results indicate significantly reduced probability of potentially deleterious expansion.**

OTHER

ASTM D5084

CERTIFYING PARTY: **Self-declared**

ISSUE DATE: **2015-**

EXPIRY DATE:

CERTIFIER OR LAB: **Geotechnical**

APPLICABLE FACILITIES: **Gulfport, MS**

06-09

Testing Services, Inc.

CERTIFICATE URL:

CERTIFICATION AND COMPLIANCE NOTES: **Project Number: 35684. Results indicate an average reduction in flow in excess of 58% as compared to control, and more than 80% reduction in flow at standard w/cm of 0.48 over control.**

OTHER

Materials Test Report

CERTIFYING PARTY: **Self-declared**

ISSUE DATE: **2015-**

EXPIRY DATE:

CERTIFIER OR LAB: **Applied**

APPLICABLE FACILITIES: **Gulfport, MS**

04-21

Technical Services, Inc.

CERTIFICATE URL:

CERTIFICATION AND COMPLIANCE NOTES: **Ref. D232821. Material tested: Residual, unincorporated raw materials. Test Results: Energy dispersive spectroscopy (EDS) chemical analysis was performed on a dried sludge powder per ASTM E1508-12. The compound consisted mostly of sodium, silicon, calcium, and oxygen (Figure 1). The sample was analyzed by x-ray diffraction (XRD) per ATS Procedure 962, Rev. 4, ASTM D934-13 as a guide, and standard powder diffraction techniques using Cu K-alpha radiation. The XRD pattern is shown in Figure 2, which exhibited a strong amorphous response centered around 29 degrees. This may be amorphous silica. Crystalline phases**

identified were fedorite, scolecite, foshagite, coesite (SiO₂), and possibly hectorite. These are essentially calcium, sodium, or magnesium containing alumino-silicates or silicates. Other elements present were either in too small of concentration as compounds to be detected by XRD, substitutional in the identified phases, or present as amorphous phases. Fourier-transform infrared (FT-IR) analysis revealed the sample to be similar to Hectorite clay (Figure 3).

Section 4: Accessories

This section lists related products or materials that the manufacturer requires or recommends for installation (such as adhesives or fasteners), maintenance, cleaning, or operations. For information relating to the contents of these related products, refer to their applicable Health Product Declarations, if available.

CONCRETE MIXES

HPD URL: **No HPD available**

CONDITION WHEN RECOMMENDED OR REQUIRED AND/OR OTHER NOTES:

ISE Logik Industries MVRA 900 has been specifically formulated for use in normal and light weight concrete mixes to produce low permeability concrete across a wide spectrum of mix designs. Typical uses of ISE Logik Industries MVRA 900 include but are not limited to: Slabs to receive moisture sensitive flooring and structural concrete roof decks; Elevator pits and retaining walls; Water retaining structures such as swimming pools and cisterns; Tunnels and other underground structures; Civil engineering projects of any magnitude (i.e., secant piles, roadways, dams, bridges).

Section 5: General Notes



MANUFACTURER INFORMATION

MANUFACTURER: **ISE Logik Industries**
 ADDRESS: **14231 Seaway Road**
Suite 1003
Gulfport MS 39503, USA
 WEBSITE: <http://iselogik.com/>

CONTACT NAME: **Dean E. Craft**
 TITLE: **President & COO**
 PHONE: **877.549.5159**
 EMAIL: decraft@iselogik.com

KEY

OSHA MSDS Occupational Safety and Health Administration Material Safety Data Sheet
GHS SDS Globally Harmonized System of Classification and Labeling of Chemicals Safety Data Sheet

Hazard Types

AQU Aquatic toxicity	GLO Global warming	PHY Physical Hazard (reactive)
CAN Cancer	MAM Mammalian/systemic/organ toxicity	REP Reproductive toxicity
DEV Developmental toxicity	MUL Multiple hazards	RES Respiratory sensitization
END Endocrine activity	NEU Neurotoxicity	SKI Skin sensitization/irritation/corrosivity
EYE Eye irritation/corrosivity	OZO Ozone depletion	LAN Land Toxicity
GEN Gene mutation	PBT Persistent Bioaccumulative Toxic	NF Not found on Priority Hazard Lists

GreenScreen (GS)

BM-4 Benchmark 4 (prefer-safer chemical)	LT-P1 List Translator Possible Benchmark 1
BM-3 Benchmark 3 (use but still opportunity for improvement)	LT-1 List Translator Likely Benchmark 1
BM-2 Benchmark 2 (use but search for safer substitutes)	LT-UNK List Translator Unknown (insufficient information from List Translator lists to benchmark)
BM-1 Benchmark 1 (avoid - chemical of high concern)	NoGS Unknown (no data on List Translator Lists)
BM-U Benchmark Unspecified (insufficient data to benchmark)	

Recycled Types

PreC Preconsumer (Post-Industrial)
PostC Postconsumer
Both Both Preconsumer and Postconsumer
Unk Inclusion of recycled content is unknown
None Does not include recycled content

Other Terms

Inventory Methods:

Nested Method / Material Threshold Substances listed within each material per threshold indicated per material
Nested Method / Product Threshold Substances listed within each material per threshold indicated per product
Basic Method / Product Threshold Substances listed individually per threshold indicated per product

Nano Composed of nano scale particles or nanotechnology
Third Party Verified Verification by independent certifier approved by HPDC
Preparer Third party preparer, if not self-prepared by manufacturer
Applicable facilities Manufacturing sites to which testing applies

The Health Product Declaration (HPD) Open Standard provides for the disclosure of product contents and potential associated human and environmental health hazards. Hazard associations are based on the HPD Priority Hazard Lists, the GreenScreen List Translator™, and when available, full GreenScreen® assessments. The HPD Open Standard v2.1 is not:

- a method for the assessment of exposure or risk associated with product handling or use,
- a method for assessing potential health impacts of: (i) substances used or created during the manufacturing process or (ii) substances created after the product is delivered for end use.

Information about life cycle, exposure and/or risk assessments performed on the product may be reported by the manufacturer in appropriate Notes sections, and/or, where applicable, in the Certifications section.

The HPD Open Standard was created and is supported by the Health Product Declaration Collaborative (the HPD Collaborative), a customer-led organization composed of stakeholders throughout the building industry that is committed to the continuous improvement of building products through transparency, openness, and innovation throughout the product supply chain.

The product manufacturer and any applicable independent verifier are solely responsible for the accuracy of statements and claims made in this HPD and for compliance with the HPD standard noted.