

Isolatek International is committed to sound environmental practice and operating in a sustainable manner. We are also committed to reducing our environmental impact while continually improving our environmental performance as an integral part of our business and operations. We encourage customers, suppliers, and other stakeholders to join us with this continuing and evolving environmental and business responsibility. [View Isolatek International's Corporate Environmental Policy.](#)

What is LEED?

Leadership in Energy and Environmental Design (LEED) is a rating system that was developed by the United States Green Building Council (USGBC) to evaluate the environmental performance of a building and encourage a market change towards sustainable design.

There are four levels of Certification levels that can be reached for LEED v4 which are awarded based on achieving a minimum number of points.

What points do Isolatek materials qualify for?

At this current time, Isolatek International can assist in achieving points in the following LEED v4 categories:

- Energy & Atmosphere
 - o Prerequisite 2 – Minimum Energy Performance
 - o Credit 2 – Optimize Energy Performance
- Materials and Resources
 - o Prerequisite 2 – Construction and Demolition Waste Management Planning
 - o Credit 1 – Building Life Cycle Impact Reduction
 - o Credit 3 – Building Product Disclosure and Optimization – Sourcing of Raw Materials
 - o Credit 4 – Building Product Disclosure and Optimization – Material Ingredients
- Indoor Environmental Quality
 - o Credit 2 – Low Emitting Materials

What is Isolatek doing to further enhance point qualifications?

As we feel that it is of utmost importance to continually improve our products' impact and footprint, we are working diligently to provide materials and testing to qualify for points in additional categories.



Isolatek International's Contributions to LEED v4 New Construction and Major Renovation

ENERGY AND ATMOSPHERE

EA Prerequisite 2 – [Minimum Energy Performance](#)

REQUIRED

Intent:

To reduce the environmental and economic harms of excessive energy use by achieving a minimum level of energy efficiency for the building and its systems.

Requirements:

Use the options and strategies as specified in the LEED BD+C: New Construction, Minimum Energy and Performance Guide.

How Isolatek Contributes:

Isolatek International's wet-spray, dry-spray, and rigid board fireproofing materials provide, in addition to their fire resistance, both NRC (Noise Reduction Coefficient) values and Thermal Resistance (R) values. These values allow for the reduction of the amount of energy needed for climate control, and reduce the need for additional materials required for soundproofing within the building envelope.

Products that Contribute:

- CAFCO® 300 Series Products
- CAFCO® 400 Series Products
- CAFCO® BLAZE-SHIELD® Series Products
- CAFCO® FENDOLITE® Products
- CAFCO® HEAT-SHIELD®
- CAFCO-BOARD®
- CAFCO® SOUND-SHIELD® 40

Isolatek International's Contributions to LEED v4 New Construction and Major Renovation

ENERGY AND ATMOSPHERE

EA Credit 1 – [Optimize Energy Performance](#)

UP TO 18 POINTS

Intent:

To achieve increasing levels of energy performance beyond the prerequisite standard to reduce environmental and economic harms associated with excessive energy use.

Requirements:

Establish an energy performance target no later than the schematic design phase using the options and strategies as specified in the LEED BD+C: New Construction, Optimize Energy Performance Guide.

How Isolatek Contributes:

Isolatek International's wet-spray, dry-spray, and rigid board fireproofing materials provide, in addition to their fire resistance, both NRC (Noise Reduction Coefficient) values and Thermal Resistance (R) values. These values allow for the reduction of the amount of energy needed for climate control, and reduce the need for additional materials required for soundproofing within the building envelope.

Products that Contribute:

- CAFCO® 300 Series Products
- CAFCO® 400 Series Products
- CAFCO® BLAZE-SHIELD® Series Products
- CAFCO® FENDOLITE® Products
- CAFCO® HEAT-SHIELD®
- CAFCO-BOARD®
- CAFCO® SOUND-SHIELD® 40

Isolatek International's Contributions to LEED v4 New Construction and Major Renovation

MATERIALS AND RESOURCES

MR Prerequisite 2 – [Construction and Demolition Waste Management](#)

REQUIRED

Intent:

To reduce construction and demolition waste disposed in landfills and incineration facilities by recovering, reusing, and recycling materials.

Requirements:

Divert at least 50% of the total construction and demolition material for Path 1 (1 point) or 75% of materials for Path 2 (1 point); diverted materials must include at least three material streams. Or, as an option (2 points), do not generate more than 2.5 pounds of construction waste per square foot (12.2 kilograms of waste per square meter) of the building's floor area.

How Isolatek Contributes:

This credit is provided for diversion of waste materials. Consider recycling construction materials. Isolatek's products are supplied in either plastic or kraft paper bags that are able to be recycled. The pallets that our products are shipped on can also be recycled. Our pailed products are supplied in 5 gallon plastic containers, which can also be recycled. Our products are not considered hazardous (refer to SDS).

Products that Contribute:

- CAFCO® 300 Series Products
- CAFCO® 400 Series Products
- CAFCO® BLAZE-SHIELD® Series Products
- CAFCO® FENDOLITE® Products
- CAFCO® HEAT-SHIELD®
- CAFCO-BOARD®
- CAFCO® SOUND-SHIELD® 40
- CAFCO® SprayFilm® Intumescent Coatings

Isolatek International's Contributions to LEED v4 New Construction and Major Renovation

MATERIALS AND RESOURCES

MR Credit 1 – Building Life-Cycle Impact Reduction

UP TO 5 POINTS

Intent:

To encourage adaptive reuse and optimize the environmental performance of products and materials.

Requirements:

Demonstrate reduced environmental effects during initial project decision-making by reusing existing building resources or demonstrating a reduction in materials use through life-cycle assessment using Option 3 as specified in the LEED BD+C: New Construction, Building life-cycle impact reduction Guide.

Reuse or salvage building materials from off site or on site as a percentage of the surface area, as listed in the table below. Include structural elements (e.g., floors, roof decking), enclosure materials (e.g., skin, framing), and permanently installed interior elements (e.g., walls, doors, floor coverings, ceiling systems). Exclude from the calculation window assemblies and any hazardous materials that are remediated as a part of the project.

Materials contributing toward this credit may not contribute toward MR Credit Building Product Disclosure and Optimization - Sourcing of Raw Materials.

% of completed project surface area reused	Points BD&C	Points BD&C (Core and Shell)
25%	2	2
50%	3	3
75%	4	5

How Isolatek Contributes:

Isolatek International's wet-spray, dry-spray, and rigid board fireproofing materials are also utilized for retrofit and rehab construction projects. These materials will provide the required fire resistance ratings to previously unprotected or abated structural element steel members (e.g. floor and roof ceiling assemblies, beams and columns) to bring the building up to current model building code. This will eliminate the need to replace the existing structural elements, which were previously not code compliant. Keep in mind that this credit only applies when at least 55% of the surface area of the building is re-used.

Products that Contribute:

- CAFCO® 300 Series Products
- CAFCO® 400 Series Products
- CAFCO® BLAZE-SHIELD® Series Products
- CAFCO® FENDOLITE® Products
- CAFCO® HEAT-SHIELD®
- CAFCO-BOARD®
- CAFCO® SOUND-SHIELD® 40
- CAFCO® SprayFilm® Intumescent Coatings

Isolatek International's Contributions to LEED v4 New Construction and Major Renovation

MATERIALS AND RESOURCES

MR Credit 3 – Building Product Disclosure and Optimization – Sourcing Raw Materials 1 POINT

Intent:

To encourage the use of products and materials for which life cycle information is available and that have environmentally, economically, and socially preferable life cycle impacts. To reward project teams for selecting products verified to have been extracted or sourced in a responsible manner.

Requirements:

Option 2 (1 point) credit, indicates that products must demonstrate leadership in the sourcing of raw materials. Several paths are provided to meet this credit, which includes material reuse and recycling. Reuse includes salvaged, refurbished, or reused products. Products meeting materials reuse criteria are valued at 100% of their cost for the purposes of credit achievement calculation. Recycled content is the sum of postconsumer recycled content plus one-half the pre-consumer recycled content. Both based on cost. Products meeting recycled content criteria are valued at 100% of their cost for the purposes of credit achievement calculation. Products sourced (extracted, manufactured, and purchased) within 100 miles (160 km) of the project site are valued at 200% of their base contributing cost. The base contributing cost of individual products compliant with multiple responsible extraction criteria is not permitted to exceed 100% its total actual cost (before regional multipliers) and double counting of single product components compliant with multiple responsible extraction criteria is not permitted and in no case is a product permitted to contribute more than 200% of its total actual cost.

How Isolatek Contributes:

Our various products are manufactured with recycled materials. The breakdown list below identifies the recycled content percentage by weight.

Post-consumer material is defined as waste material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the products, which can no longer be used for intended purpose.

Pre-consumer material is defined as material diverted from a waste stream during the manufacturing process. Excluded is the reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

Products that Contribute:

CAFCO® BLAZE-SHIELD® II - 67% Pre-consumer:

- Total Recycled content for this credit is 33.5%

CAFCO® BLAZE-SHIELD® II HS/HP - 56% Pre-consumer:

- Total Recycled content for this credit is 28%

CAFCO® 300/300AC/300HS/300SB/300ES/304 - 10% Post-consumer:

- Total Recycled content for this credit is 10%

CAFCO® 3000/3000ES - 10% Post-consumer:

- Total Recycled content for this credit is 10%

CAFCO® 400/400AC/400ES - 10% Post-consumer:

- Total Recycled content for this credit is 10%

CAFCO-BOARD® - >70% Pre-consumer:

- Total Recycled content for this credit is >35%

CAFCO® HEAT-SHIELD® - 90% Pre-consumer:

- Total Recycled content for this credit is 45%

Isolatek International's Contributions to LEED v4 New Construction and Major Renovation

MATERIALS AND RESOURCES

MR Credit 4 – Building Product Disclosure and Optimization – Material Ingredients

1 POINT

Intent:

To encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically, and socially preferable life-cycle impacts. To reward project teams for selecting products for which the chemical ingredients in the product are inventoried using an accepted methodology and for selecting products verified to minimize the use and generation of harmful substances. To reward raw material manufacturers who produce products verified to have improved life-cycle impacts.

Requirements:

Option 1 (1 point) credit is provided if 20 products in the building disclose chemical ingredients in their products using acceptable methodology, including a Health Product Declaration (HPD), or other approved programs, such as a Declare product label. The products must demonstrate the chemical inventory of the product to at least 0.1% (1000 ppm).

How Isolatek Contributes:

Isolatek currently provides a self-declared Health Product Declaration (HPD) for all of its Applied Fireproofing and Intumescent Fireproofing materials, along with [Declare labels](#).

Products that Contribute:

- CAFCO® 300 Series Products [HPD, Declare Label]
- CAFCO® 400 Series Products [HPD, Declare Label]
- CAFCO® BLAZE-SHIELD® Series Products [HPD, Declare Label]
- CAFCO® FENDOLITE® Products [HPD, Declare Label]
- CAFCO® SprayFilm® Intumescent Coatings [HPD, Declare Label]

Isolatek International's Contributions to LEED v4 New Construction and Major Renovation

INDOOR ENVIRONMENTAL QUALITY

EQ Credit 2 – Indoor Environmental Quality - Low Emitting Materials

UP TO 5 POINTS

Intent:

To reduce concentrations of chemical contaminants that can damage air quality, human health, productivity, and the environment.

Requirements:

This credit includes requirements for volatile organic compound (VOC) emissions in the indoor air and the VOC content of materials, as well as the testing methods by which indoor VOC emissions are determined.

To meet the general emissions requirements, the products must comply with California Department of Public Health (CDPH) Standard Method v1.1.

To meet the VOC content requirements, the wet applied paints and coatings must meet the applicable VOC content limits of the California Air Resources Board (CARB) 2007 Suggested Control Measure (SCM) for Architectural Coatings, or the South Coast Air Quality Management District (SCAQMD) Rule 1113.

How Isolatek Contributes:

Isolatek has evaluated its products to EPA, Method 24, which is the acceptable method for determining VOC Content (*VOC Content listed on Page 9*). Isolatek has also evaluated its products for VOC Emissions in accordance with CDPH Standard Method v1.1.

Products that Contribute:

- CAFCO® 300 Series Products [VOC Content, VOC Emissions]
- CAFCO® 400 Series Products [VOC Content, VOC Emissions]
- CAFCO® BLAZE-SHIELD® Series Products [VOC Content, VOC Emissions]
- CAFCO® FENDOLITE® Products [VOC Content, VOC Emissions]
- CAFCO® SprayFilm® Intumescent Coatings [VOC Content, VOC Emissions]

Isolatek International's Contributions to LEED v4 New Construction and Major Renovation

MANUFACTURING LOCATIONS

CAFCO® 300, 304, SB, AC, HS, ES; CAFCO® 3000, ES; CAFCO® 400, AC, ES; CAFCO® FENDOLITE M-II, TG, M-II/P; CAFCO® SOUND-SHIELD® 40:

- Stanhope, New Jersey
- Houston, Texas
- San Bernardino, California

CAFCO® BLAZE-SHIELD® II, II HS, HP; CAFCO® HEAT-SHIELD®:

- Huntington, Indiana

CAFCO-BOARD®:

- Wabash, Indiana

CAFCO SprayFilm WB 3, WB 4, WB 5, Topseal; CAFCO BOND-SEAL:

- Lawrence, Massachusetts

VOC CONTENT (EPA, METHOD 24)

CAFCO® SprayFilm® WB 3:

- <13.0 g/L (<0.11 lb/gal)

CAFCO® SprayFilm® WB 4:

- <13.0 g/L (<0.11 lb/gal)

CAFCO® SprayFilm® WB 5:

- 0.0 g/L (0.0 lb/gal)

CAFCO® SprayFilm® Topseal®:

- <24.0 g/L (0.20 lb/gal)

CAFCO® BOND-SEAL®:

- 0.0 g/L (0.0 lb/gal)

CAFCO® BLAZE-SHIELD® II, II HS, HP:

- 0.0 g/L (0.0 lb/gal)

CAFCO® 300, 304, SB, AC, HS:

- 0.0 g/L (0.0 lb/gal)

CAFCO® 400:

- 0.0 g/L (0.0 lb/gal)

CAFCO® 3000:

- 8.1 g/L (<0.07 lb/gal)

CAFCO® 400, AC:

- 8.1 g/L (<0.07 lb/gal)

CAFCO® FENDOLITE® M-II, TG, M-II/P:

- 0.0 g/L (0.0 lb/gal)

Isolatek International's Contributions to LEED v4 New Construction and Major Renovation

RAW MATERIAL SOURCING

Please contact Isolatek Technical Services Department at 800-631-9600 or technical@isolatek.com in order to obtain extraction locations for the following ingredients that are pertinent to the following CAFCO® products.

CAFCO® 300, 304, SB, AC, HS, ES; CAFCO® 3000, ES; CAFCO® 400AC, ES:

- Stucco/Gypsum Plaster
- Cellulose⁺

CAFCO® 400:

- Portland Cement
- Cellulose⁺

CAFCO® FENDOLITE M-II, TG, M-II/P; CAFCO® SOUND-SHIELD® 40:

- Portland Cement

CAFCO® BLAZE-SHIELD® II, II HS, HP; CAFCO® HEAT-SHIELD®:

- Portland Cement
- Mineral Wool⁺⁺

CAFCO-BOARD®:

- Mineral Wool⁺⁺

CAFCO® SprayFilm WB 3, WB 4, WB 5, Topseal; CAFCO® BOND-SEAL:

- N/A

⁺ Contributes to Post-Consumer Recycled Content

⁺⁺ Contributes to Pre-Consumer (formerly Post-Industrial) Recycled Content

USEFUL LINKS & RESOURCES

LEED | U.S. Green Building Council (USGBC):

- <http://www.usgbc.org/leed>

LEEDuser:

- <http://www.leeduser.com/browsev4>

HPD Collaborative:

- <http://www.hpd-collaborative.org/leed-v4-credit-achievement>

Distance Calculators:

- <https://www.freemaptools.com/how-far-is-it-between.htm>
- <http://tipeiffer.com/crowflies.html>



Isolatek International provides passive fireproofing materials under the CAFCO® trademark throughout the Americas and other markets and under the ISOLATEK® trademark throughout the world.

800.631.9600 or 973.347.1200
www.isolatek.com | technical@isolatek.com



5/19



CAFCO® 300

CAFCO 300 AC

CAFCO 300 HS

CAFCO 3000

The CAFCO® 300 series products are the most innovative, widely specified and used commercial density, Wet Mix Spray-Applied Fire Resistive Materials in the world. CAFCO 300 series products are Gypsum- based formulations that offer the most cost effective fire resistance performance per unit thickness of any commercial SFRM in the world.

The thermal performance advantages of CAFCO 300 results in reduced installed costs over any commercial density Wet Spray fire protection material, while providing industry leading physical performance and application efficiencies that are unsurpassed.



Performance dashboard

Features & functionality

CAFCO 300: Most widely used and thermally efficient wet-mix SFRM in the industry.

CAFCO 300 AC: Specially formulated to increase application productivity.

CAFCO 300 HS: Designed to satisfy 430 psf high rise bond strength requirement for buildings up to 420 ft in height.

CAFCO 3000: Formulated to maintain 1000 psf bond strength required for buildings over 420 ft in height.

Visit Isolatek for more product specifications:

[CAFCO 300](#), [CAFCO 300 AC](#), [CAFCO 300 HS](#), [CAFCO 3000](#)

Environment & materials

Improved by:

Tested to meet (CDPH) Standard Method v1.1 & EPA Method 24 for VOC's

Post-consumer recycled content used

Certifications, rating systems & disclosures:

Declare, Red List Free

Health Product Declaration

Cellulosic – ANSI/UL263 (ASTM E119) – Fire Tests of Building Construction and Materials

UL Classification Mark



CSI MasterFormat® 07 81 00

[CAFCO SFRM Guide Spec](#)

For spec help, [contact us](#) or call 800-631-9600



[Download all documents](#)

[See LCA, interpretation & rating systems](#)

[See materials, interpretation & rating systems](#)



SM Transparency Report™ + Material Health Overview™

VERIFICATION

LCA

3rd party reviewed



Transparency Report

3rd party verified



Material evaluation

Self-declared



Validity: 05/29/19 – 05/29/24
ISL – 05292019 – 001

This declaration was independently verified by NSF to ISO 21930:2007 and the ASTM PCR, and ISO 14025:2006.

NSF Certification, LLC

P.O Box 130140
789 N.Dixboro Road
Ann Arbor, MI 48105, USA
[www.nsf.org](#)
734 769 8010



SUMMARY

Reference PCR

ASTM Spray-applied Fire-Resistive Materials, 03/17 – 02/22

Regions; system boundaries

North America; Cradle to gate

Declared unit: 1,000kg

LCIA methodology: TRACI 2.1

LCA software; LCI database

SimaPro Analyst 8.5.2.0
EcolInvent 3.1, 2.2

LCA conducted by

Sustainable Minds

LCA public version

Isolatek Passive Fire Protection Products

Isolatek International

41 Furnace Street
Stanhope, NJ 07874
[www.isolatek.com](#)
800 631 9600

Contact us

LCA & material health results & interpretation

CAFCO® 300, 300 AC, 300 HS & 3000

- Life cycle assessment
- Material health

Scope and summary

Cradle to gate

Cradle to gate with options

Cradle to grave

Application

The CAFCO® 300 Series is a durable, gypsum based, wet mix, commercial density Spray-Applied Fire Resistive Material (SFRM) designed to provide fire protection to concealed floor and roof assemblies, steel beams, columns, and joists in building construction projects.

Declared unit

1,000 kg of spray-applied fire resistive material, packaging included.

Manufacturing data

Reporting period: January 2017 – December 2017

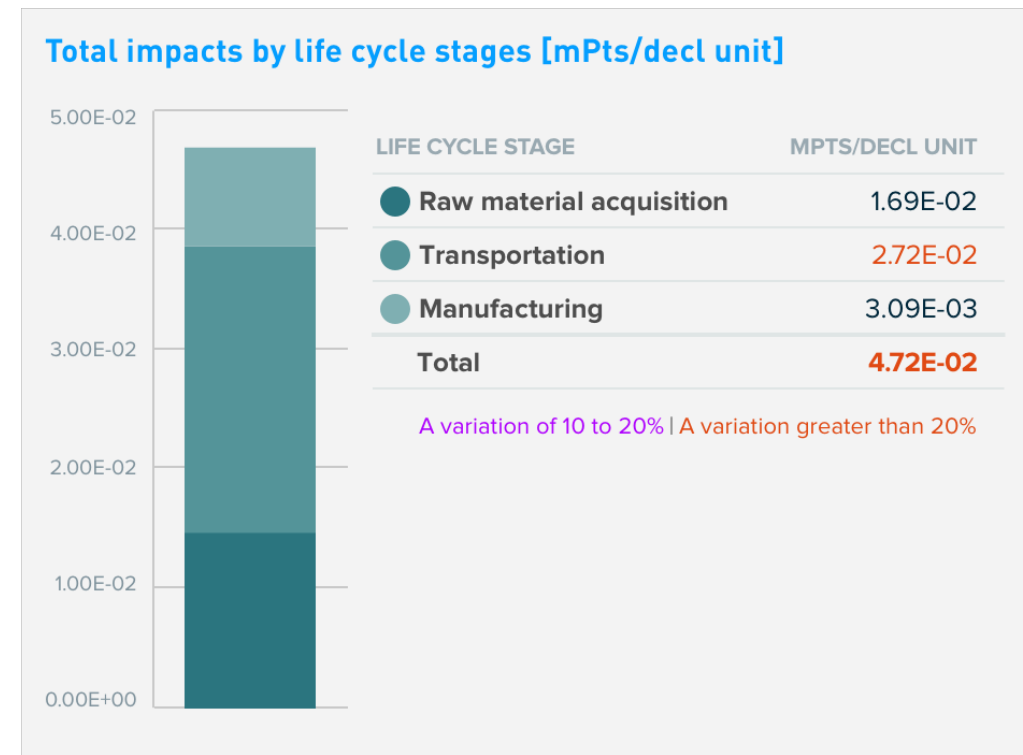
Location: Stanhope, NJ; Houston, TX; San Bernardino, CA

The amount of water required to be added during the mixing and application of 1,000 kg of dry product is 429 gallons. This water consumption will cause additional environmental impacts in the use phase, which is out of the scope of this assessment.

Default manufacturing scenarios

Production for the product series includes a Kraft paper bag for packaging. At the end of production, approximately 10% of vermiculite is sent to land fill when it does not “pop” in the manufacturing process. Vermiculite is used as a bulking agent in the production process.

Material composition greater than 1% by weight		
PART	MATERIAL	AVG % WT.
Product Ingredient	Calcium sulfate	55.8%
Product Ingredient	Vermiculite	27.6%
Product Ingredient	Calcium carbonate	5.9%
Product Ingredient	Cellulose	5.2%
Product Ingredient	Bentonite clay	4.2%
Packaging	Kraft paper bag	1.4%



LCA results

LIFE CYCLE STAGE	RAW MATERIAL ACQUISITION	TRANSPORTATION	MANUFACTURING	TOTAL
Information modules: Included Excluded	A1 Raw Materials	A2 Transportation	A3 Manufacturing	A1-A3 Total
				

Impacts per declared unit	1.69E-02 mPts	2.72E-02 mPts	3.09E-03 mPts	4.72E-02 mPts
Materials or processes contributing >20% to total impacts in each life cycle stage	CAFCO® 300 Series raw material production.	Truck and rail transportation used to transport raw materials to manufacturing site.	Energy and ancillary materials required to make the passive fire protection product.	Sum of the single point scores.

TRACI v2.1 results per declared unit

A variation of 10 to 20% | A variation greater than 20%

LIFE CYCLE STAGE	RAW MATERIAL ACQUISITION	TRANSPORTATION	MANUFACTURING	TOTAL
------------------	--------------------------	----------------	---------------	-------

Ecological damage

Impact category	Unit				
Acidification	kg SO ₂ eq ?	1.80E+00	1.12E+00	3.19E-01	3.24E+00
Eutrophication	kg N eq ?	1.56E-01	1.56E-01	2.24E-02	3.34E-01
Global warming (Embodied carbon)	kg CO ₂ eq ?	1.99E+02	2.88E+02	8.02E+01	5.67E+02
Ozone depletion	kg CFC-11 eq ?	2.54E-05	6.92E-05	1.00E-05	1.05E-04

Human health damage

Impact category	Unit				
Carcinogenics	CTU _h ?	1.98E-06	2.22E-06	2.26E-07	4.43E-06
Non-carcinogenics	CTU _h ?	3.38E-05	6.09E-05	1.68E-06	9.64E-05
Respiratory effects	kg PM _{2.5} eq ?	2.67E-01	1.96E-01	3.22E-02	4.95E-01
Smog	kg O ₃ eq ?	2.53E+01	2.34E+01	3.27E+00	5.19E+01

Additional environmental information

Impact category	Unit				
Ecotoxicity	CTU _e ?	1.50E+02	1.13E+03	1.23E+01	1.30E+03
Fossil fuel depletion	MJ, LHV ?	5.55E+02	5.83E+02	1.23E+02	1.26E+03

See the additional EPD content required by the ASTM Environment PCR on page 4 of the Transparency Report PDF.

References

LCA Background Report

Isolatek Products LCA (public version), Isolatek 2019. SimaPro Analyst 8.5.2.0, EcolInvent 3.1, 2.2 database.

PCR

ASTM PCR for Spray-Applied Fire Resistive Materials; Version 1.0, February 2022. PCR review conducted by Thomas Gloria, PhD (chair, t.gloria@industrial-ecology.com); Jeffrey Gould; and Karl Houser.

ISO 14025, “Sustainability in buildings and civil engineering works -- Core rules for environmental product declarations of construction products and services".

Independent external verification of the declaration and data, according to ISO 14025.

 **Download PDF** SM Transparency Report/Material Health Overview, which includes the additional EPD content required by the ASTM Environment PCR.

"Transparency Reports™ / environmental product declarations enable purchasers and users to compare the potential environmental performance of products on a life cycle basis. They are designed to present information transparently to make the limitations of comparability more understandable. TRs/EPDs of products that conform to the same PCR and include the same life cycle stages, but are made by different manufacturers, may not sufficiently align to support direct comparisons. They therefore, cannot be used as comparative assertions unless the conditions defined in ISO 14025 Section 6.7.2. 'Requirements for Comparability' are satisfied." EPDs from different programs (using different PCR) may not be comparable. TRs/EPDs cannot be compared if they do not have the same functional unit, reference service life, and building service life.

Rating systems

The intent is to reward project teams for selecting products from manufacturers who have verified improved life-cycle environmental performance.

LEED BD+C: New Construction | v4 - LEED v4

Building product disclosure and optimization

Environmental product declarations

☐ Industry-wide (generic) EPD	½ product
☒ Product-specific Type III EPD	1 product

LEED BD+C: New Construction | v4.1 - LEED v4.1

Building product disclosure and optimization

Environmental product declarations

☐ Industry-wide (generic) EPD	1 product
☒ Product-specific Type III EPD	1½ product

Green Globes for New Construction and Sustainable Interiors

Materials and resources

☒ NC 3.5.1.2 Path B: Prescriptive Path for Building Core and Shell
☒ C 3.5.2.2 and SI 4.1.2 Path B: Prescriptive Path for Interior Fit-outs

Collaborative for High Performance Schools National Criteria

MW 7.1 – Environmental Product Declarations

☒ Third-party certified type III EPD	2 points
---	----------

BREEAM New Construction 2018

Mat 02 - Environmental impacts from construction products

Environmental Product Declarations (EPD)

☐ Industry average EPD	.5 points
☒ Multi-product specific EPD	.75 points
☐ Product specific EPD	1 point



SM Transparency Report™ + Material Health Overview™

VERIFICATION

LCA

3rd party reviewed



Transparency Report

3rd party verified



Material evaluation

Self-declared



Validity: 05/29/19 – 05/29/24
ISL – 05292019 – 001

This declaration was independently verified by NSF to ISO 21930:2007 and the ASTM PCR, and ISO 14025:2006.

NSF Certification, LLC

P.O Box 130140
789 N.Dixboro Road
Ann Arbor, MI 48105, USA
www.nsf.org
734 769 8010



SUMMARY

Reference PCR

ASTM Spray-applied Fire-Resistive Materials, 03/17 – 02/22

Regions; system boundaries

North America; Cradle to gate

Declared unit: 1,000kg

LCIA methodology: TRACI 2.1

LCIA software; LCI database

SimaPro Analyst 8.5.2.0
EcolInvent 3.1, 2.2

LCA conducted by

Sustainable Minds

LCA public version

Isolatek Passive Fire Protection Products

Isolatek International

41 Furnace Street
Stanhope, NJ 07874
www.isolatek.com
800 631 9600

Contact us

LCA & material health results & interpretation

CAFCO® 300, 300 AC, 300 HS & 3000

Life cycle assessment

Material health

Assessment scope and results

Declare™

Inventory threshold: 100 ppm

Declare level:

The Declare product database and label are used to select products that meet the LBC's stringent materials requirements, streamlining the materials specification and certification process.

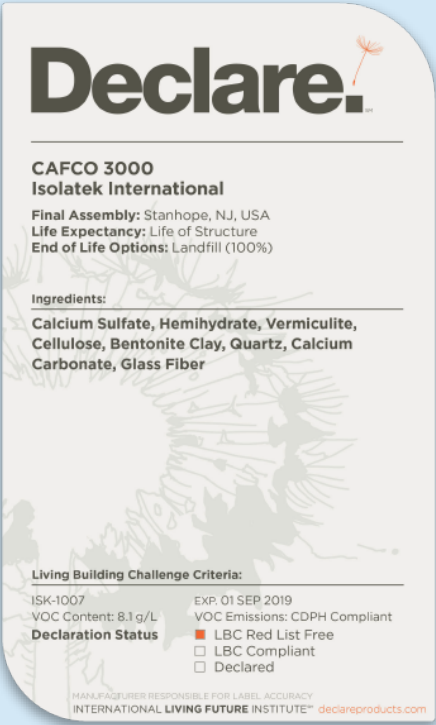
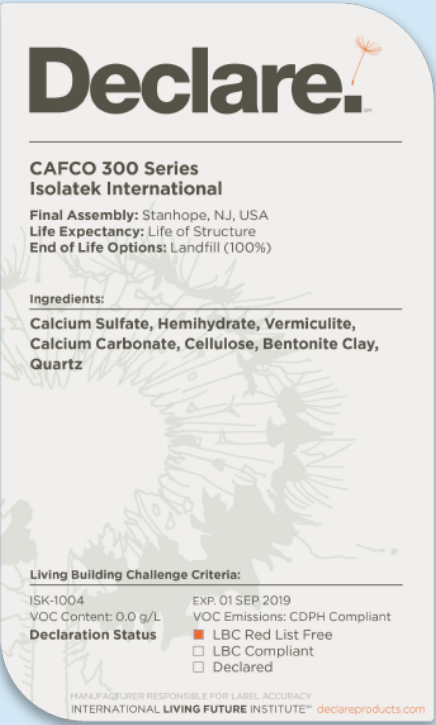
- LBC Red List Free ?
- LBC Compliant ?
- Declared ?



Click the label to see the full declaration.

CAFCO 300 SERIES

CAFCO 3000



Health Product Declaration®

CAFCO 300 SERIES

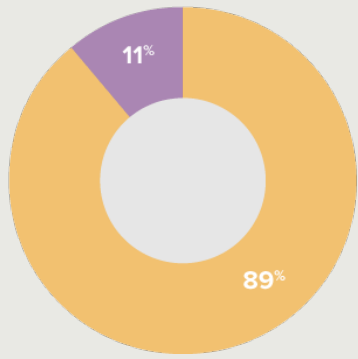
Inventory threshold: 100 ppm

Full disclosure known hazards: Yes

Based on the selected content inventory threshold:

Characterized Screened Identified

TOTAL INTENTIONAL INGREDIENTS



GreenScreen® List Translator Scores

- List Translator Likely Benchmark 1 / Benchmark 1 ?
- List Translator Possible Benchmark 1 ?
- List Translator Benchmark Unknown ?
- Benchmark 3 ?
- Benchmark 3 ?
- Benchmark 4 ?
- No GS data available ?

[Learn about the GreenScreen® List Translator](#)

Total VOC Content ?

Material (g/l): 0.0 Regulatory (g/l): 50.0

Does the product contain exempt VOCs: No

Are ultra-low VOC tints available: N/A

CAFCO 3000

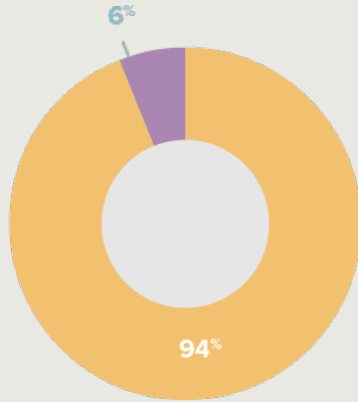
Inventory threshold: 100 ppm

Full disclosure known hazards: Yes

Based on the selected content inventory threshold:

Characterized Screened Identified

TOTAL INTENTIONAL INGREDIENTS



Total VOC Content ?

Material (g/l): 0.0 Regulatory (g/l): 50.0

Does the product contain exempt VOCs: No

Are ultra-low VOC tints available: N/A

What's in this product and why

Declare level

Isolatek International takes pride in the fact that all of its Applied Fireproofing products are labeled as Declare™ Red List Free. The Declare program holds manufacturers accountable for their ingredients used in their products and allows the specifiers, architects and others the ability to better understand the products' environmental and sustainable qualities through transparency.

What's in the product and why

The ingredients used to manufacture Isolatek International's CAFCO 300 Series products provide effective, thermally efficient, robust and resilient Applied Fireproofing products.

The in-place products have superior thermal efficiencies, resulting in lower thicknesses to meet specified design criteria providing efficiencies in material and labor.

Our products' primary components are gypsum, which is a naturally occurring element or Portland cement binder, which is obtained and processed from common natural materials, such as limestone and clay. The trade off with the cement -based products compared to the naturally occurring gypsum counterparts is their functional ability to better withstand the exterior elements or other abuses during the construction and life cycle of the structures in which they are installed. Both primary component binder types have widespread availability which are sourced locally near our various production facilities.

What's been done in the design and manufacture in consideration of the potential human health impacts in the use stage

Isolatek International's CAFCO 300 Series products contain recycled cellulose which constitutes up to 10% recycled content of the material by weight. CAFCO 300 Series products are packaged in recyclable kraft paper bags and shipped on wood pallets that can be reused or recycled.

CAFCO 300 Series products are designed to provide required fire resistance ratings on structural steel members and designed to last the lifetime of a building when applied in accordance with the specified design criteria, Isolatek's written Application Instructions, properly maintained after application and not damaged or altered in any way after installation.

Where it goes at the end of its life

Isolatek International's Applied Fireproofing products are designed to provide the required fire resistance ratings on the structural steel members to last the lifetime of the building when applied in accordance with the specified design criteria, our written Application Instructions and are not damaged or altered in any way after their installation.

Although Isolatek's Applied Fireproofing products are designed to last the lifetime of the building, the end life of the product is generally the result of a rehabilitation, which may require removal and replacement of the Applied Fireproofing materials. The removal depends upon the degree of the rehabilitation. Otherwise, the end life of the material is based on the end life of the structure in its entirety. The material is then processed along with the remainder of the structure, primarily as landfill material.

How we're making it healthier

- Isolatek International is committed to legal compliance and ethical business practices in all of our operations.
- Isolatek's vendors must act in accordance with the applicable statutory and international standards regarding environmental protection.
- Isolatek's vendors must minimize environmental pollution and make continuous improvements in environmental protection.
- Isolatek's vendors must set up or use a reasonable environmental management system.
- In Isolatek's purchase arrangements, vendors must observe all applicable laws of their country and international standards, including but not limited to laws and standards relating to the environment, as well as health and safety.

[See how we make it greener](#)

Evaluation programs

Declare

Declare labels are issued to products disclosing ingredient inventory, sourcing and end of life options. Declare labels are based on the Manufacturers Guide to Declare, administered by the International Living Future Institute.

How it works

Material ingredients are inventoried and screened against the [Living Building Challenge](#) (LBC) Red List which represents the ‘worst in class’ materials, chemicals, and elements known to pose serious risks to human health and the greater ecosystem.

The Health Product Declaration®

The HPD Open Standard provides a consistent, and transparent format to accurately disclose the material contents and associated hazard classifications for a building product.

How it works

Material ingredients are screened and categorized according to the hazards that international governmental bodies and toxicology experts have associated with them, based on two listings:

- Authoritative lists maintained or recognized by government bodies
- Screening lists, which include chemicals that government bodies determined need further scrutiny, as well as chemical lists not recognized by any government body.

References

Declare

CAFCO® 300
CAFCO® 300 AC
CAFCO® 300 HS
CAFCO® 3000

Manufacturer's Guide to Declare

A comprehensive guide providing information about the program, the assessment methodology, how to submit material data to obtain a Declare label and how they are used to meet the Health & Happiness and Materials Petals of the Living Building Challenge.

Health Product Declaration®

CAFCO® 300
CAFCO® 300 AC
CAFCO® 300 HS
CAFCO® 3000

Health Product Declaration Open Standard v2.1

The standard provides guidance to accurately disclose the material contents of a building product using a standard, consistent, and transparent format.

Rating systems

LEED BD+C: New Construction | v4 - LEED v4
Building product disclosure and optimization
Material Ingredients

Credit value options	1 product each	
☒ 1. Reporting	☐ 2. Optimization	☐ 3. Supply Chain Optimization

Living Building Challenge 3.0
Materials petals imperatives

☒ 10. Red List Free	☐ 12. Responsible Industry	☐ 13. Living Economy Sourcing
--	--	---

Well Building Standard®
Air and Mind Features

☐ Air , 26. Enhanced Material Safety		
☒ Mind , 97. Material Transparency	☐ Mind , 98. Organizational Transparency	

Collaborative for High Performance Schools National Criteria
MW 10.1 — Building Product Health Related Information Reporting

☒ Product Health Related Information Report	1 point
--	---------



SM Transparency Report™ + Material Health Overview™

VERIFICATION

Self-declared



Material
evaluation

ISL – 12032018 – 001

The material health evaluation is self-declared and done in accordance with the HPD Open Standard 2.1

HPD Collaborative
401 Edgewater Place, Suite 600
Wakefield, MA 01880
www.hpd-collaborative.org
781.876.8871



The material health evaluation is self-declared and done in accordance with the Manufacturers Guide to Declare.

International Living Future Institute
501 East Madison St.
Seattle, WA 98122
www.living-future.org
206 223 2028



Isolatek International
41 Furnace Street
Stanhope, NJ 07874
www.isolatek.com
800 631 9600

Contact us

How we make it greener

CAFCO® 300, 300 AC, 300 HS & 3000

Collapse all

[See LCA results by life cycle stage](#)

RAW MATERIAL ACQUISITION



Reuse of recycled spent materials

Isolatek uses recycled cellulose in the production of the CAFCO® 300 Series products. CAFCO 300 contains up to 10% recycled cellulose.

Isolatek collaborates with vendors to provide neutral products that minimize environmental impact, conserves energy, reduces and diverts waste, and are sustainable.

These vendors, where possible, are strategically located in close proximity to our manufacturing facilities which minimized transportation costs.



MANUFACTURING



Regional Manufacturing

Isolatek makes a point to minimize energy in our plants, buildings and processes in order to conserve supplies, and minimize consumption of natural resources, especially non-renewable resources.



TRANSPORTATION



Optimized and recycled packaging

CAFCO 300 Series products are packaged in recyclable kraft paper bags and shipped on wood pallets that can be reused or recycled.



USE



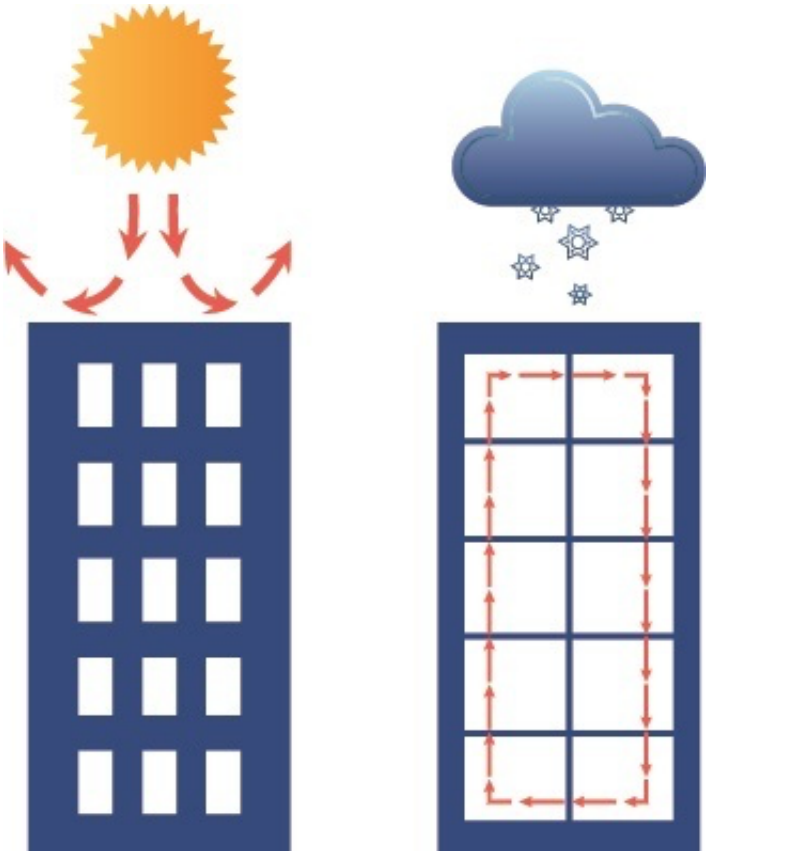
Energy use optimization

Isolatek's materials also provide both NRC (Noise Reduction Coefficient) values and Thermal Resistance (R) values which allow for the reduction of the amount of energy needed for climate control, and reduce the need for additional materials required for soundproofing within the building envelope.

Extended set products are available that eliminates daily wash out, reducing clean water consumption and construction waste.

Reduced water use

Isolatek's materials are designed to use the least amount of water during the installation process, which results in less consumption of natural resources.



END OF LIFE



Durability

Although Isolatek's Applied Fireproofing products are designed to last the lifetime of the building, the end life of the product is generally the result of a rehabilitation, which may require removal and replacement of the Applied Fireproofing materials. The removal depends upon the degree of the rehabilitation. Otherwise, the end life of the material is based on the end life of the structure in its entirety. The material is then processed along with the remainder of the structure, primarily as landfill material.

SM Transparency Report™ + Material Health Overview™

VERIFICATION	LCA
3rd party reviewed	
Transparency Report	
3rd party verified	
Material evaluation	
Self-declared	
Validity: 05/29/19 – 05/29/24 ISL – 05292019 – 001	

This declaration was independently verified by NSF to ISO 21930:2007 and the ASTM PCR, and ISO 14025:2006.

NSF Certification, LLC
P.O Box 130140
789 N.Dixboro Road
Ann Arbor, MI 48105, USA
www.nsf.org
734 769 8010



SUMMARY
Reference PCR
ASTM Spray-applied Fire-Resistive Materials, 03/17 – 02/22
Regions; system boundaries
North America; Cradle to gate
Declared unit: 1,000kg
LCIA methodology: TRACI 2.1
LCA software; LCI database
SimaPro Analyst 8.5.2.0
EcolInvent 3.1, 2.2
LCA conducted by
Sustainable Minds
LCA public version
Isolatek Passive Fire Protection Products

Isolatek International
41 Furnace Street
Stanhope, NJ 07874
www.isolatek.com
800 631 9600

Contact us

Additional EPD content required by: ASTM PCR Parts A and B for Spray-applied Fire-resistive Materials (SFRM)

CAFCO® 300 Series

Primary energy consumption, material resources consumption, and waste flows per declared unit

Parameter	Unit	A1	A2	A3	Total
-----------	------	----	----	----	-------

Primary energy consumption indicators

Nonrenewable fossil	MJ, HHV	4.56E+03	4.53E+03	1.18E+03	1.03E+04
Nonrenewable nuclear	MJ, HHV	2.27E+02	7.18E+01	1.29E+02	4.28E+02
Renewable (solar, wind, hydroelectric, and geothermal)	MJ, HHV	8.85E+00	4.39E+00	1.79E+01	3.11E+01
Renewable (biomass)	MJ, HHV	6.41E+02	2.67E+01	9.79E+00	6.77E+02

Material resources consumption indicators

Renewable material resources	kg	3.65E+01	9.02E-01	4.84E-01	3.79E+01
Nonrenewable material resources	kg	1.16E+03	3.58E+01	2.28E+01	1.54E+03
Net fresh water	L	1.32E+04	3.24E+03	2.53E+03	1.90E+04

Waste flows

Non-hazardous waste generated	kg	0	0	2.96E+01	2.96E+01
Hazardous waste generated	kg	0	0	0	0

Numbers shown in **purple** have a variation of 10 to 20%
Numbers shown in **red** have a variation greater than 20%

HPD UNIQUE IDENTIFIER: 27075

CLASSIFICATION: 07 81 00 Applied Fire Protection

PRODUCT DESCRIPTION: The CAFCO® 300 series is the most innovative, widely specified and used commercial density, Wet Mix Spray-Applied Fire Resistive Material (SFRM) materials in the world. CAFCO 300 is a Gypsum- based formulation that offers the most cost effective fire resistance performance per unit thickness of any commercial SFRM in the world. The thermal performance advantages of the CAFCO 300 series of products results in reduced installed costs over any commercial density Wet Spray fire protection material in the industry. It also provides industry leading physical performance and application efficiencies that are unsurpassed.

Section 1: Summary

Nested Method / Product Threshold

CONTENT INVENTORY

Inventory Reporting Format ☒ Nested Materials Method ☐ Basic Method	Threshold Level ☐ 100 ppm ☒ 1,000 ppm ☐ Per GHS SDS ☐ Other	Residuals/Impurities Considered in 1 of 1 Materials Explanation(s) provided for Residuals/Impurities? ☒ Yes ☐ No	<i>All Substances Above the Threshold Indicated Are:</i> Characterized ☐ Yes Ex/SC ☒ Yes ☐ No <i>% weight and role provided for all substances.</i> Screened ☐ Yes Ex/SC ☒ Yes ☐ No <i>All substances screened using Priority Hazard Lists with results disclosed.</i> Identified ☐ Yes Ex/SC ☒ Yes ☐ No <i>All substances disclosed by Name (Specific or Generic) and Identifier.</i>
Threshold Disclosed Per ☐ Material ☒ Product			

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
CAFCO 300 & CAFCO 300 HS [PLASTER OF PARIS NoGS
VERMICULITE NoGS BENTONITE LT-UNK LIMESTONE; CALCIUM
CARBONATE BM-3dg CELLULOSE, MICROCRYSTALLINE LT-UNK |
RES QUARTZ BM-1 | CAN]

Number of Greenscreen BM-4/BM3 contents ... 0

Contents highest concern GreenScreen Benchmark or List translator Score ... BM-1

Nanomaterial ... No

INVENTORY AND SCREENING NOTES:

Spray Applied Fire Resistive Material

VOLATILE ORGANIC COMPOUND (VOC) CONTENT

Material (g/l): 0.0 Regulatory (g/l): 50
Does the product contain exempt VOCs: No
Are ultra-low VOC tints available: N/A

CERTIFICATIONS AND COMPLIANCE See Section 3 for additional listings.

VOC emissions: CDPH Standard Method V1.1 (Section 01350/CHPS) - Classroom & Office scenario
VOC content: EPA Method 24 - Volatile Matter Content (EPA 24)
Other: ILFI Declare - Red List Free

CONSISTENCY WITH OTHER PROGRAMS

Pre-checked for LEED v4 Material Ingredients Option 1

Third Party Verified? ☐ Yes ☒ No	PREPARER: Self-Prepared VERIFIER: VERIFICATION #:	SCREENING DATE: 2022-01-14 PUBLISHED DATE: 2022-01-14 EXPIRY DATE: 2025-01-14
---	---	---

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 2.2, available on the HPDC website at: www.hpd-collaborative.org/hpd-2-2-standard

CAFCO 300 & CAFCO 300 HS %: 0.0000 - 100.0000

PRODUCT THRESHOLD: 1000 ppm RESIDUALS AND IMPURITIES CONSIDERED: Yes MATERIAL TYPE: Other: Spray Applied Fire Resistive Material

RESIDUALS AND IMPURITIES NOTES: Impurities are displayed ingredients within the HPD

OTHER MATERIAL NOTES: Gypsum Based, Wet Spray, Cementitious, Applied Fireproofing Material

PLASTER OF PARIS

ID: 26499-65-0

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library HAZARD SCREENING DATE: 2022-01-14 16:50:25

%: 50.0000 - 70.0000 GS: NoGS RC: None NANO: No SUBSTANCE ROLE: Biological material

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found

No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES:

VERMICULITE

ID: 1318-00-9

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library HAZARD SCREENING DATE: 2022-01-14 16:50:25

%: 15.0000 - 30.0000 GS: NoGS RC: None NANO: No SUBSTANCE ROLE: Filler

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found

No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES:

BENTONITE

ID: 1302-78-9

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library HAZARD SCREENING DATE: 2022-01-14 16:50:26

%: 1.0000 - 10.0000 GS: LT-UNK RC: None NANO: No SUBSTANCE ROLE: Viscosity modifier

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found

No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES:

LIMESTONE; CALCIUM CARBONATE

ID: 1317-65-3

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library HAZARD SCREENING DATE: 2022-01-14 16:50:26

%: 1.0000 - 10.0000		GS: BM-3dg	RC: None	NANO: No	SUBSTANCE ROLE: Biological material
HAZARD TYPE		AGENCY AND LIST TITLES		WARNINGS	
None found		No warnings found on HPD Priority Hazard Lists			
SUBSTANCE NOTES:					

CELLULOSE, MICROCRYSTALLINE

ID: 9004-34-6

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2022-01-14 16:50:27		
%: 1.0000 - 10.0000	GS: LT-UNK	RC: PostC	NANO: No	SUBSTANCE ROLE: Filler
HAZARD TYPE	AGENCY AND LIST TITLES		WARNINGS	
RES	AOEC - Asthmagens		Asthmagen (Rs) - sensitizer-induced	
SUBSTANCE NOTES:				

QUARTZ

ID: 14808-60-7

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2022-01-14 16:50:27				
%: Impurity/Residual		GS: BM-1		RC: None	NANO: No	SUBSTANCE ROLE: Impurity/Residual
HAZARD TYPE		AGENCY AND LIST TITLES		WARNINGS		
CAN		US CDC - Occupational Carcinogens		Occupational Carcinogen		
CAN		CA EPA - Prop 65		Carcinogen - specific to chemical form or exposure route		
CAN		US NIH - Report on Carcinogens		Known to be Human Carcinogen (respirable size - occupational setting)		
CAN		MAK		Carcinogen Group 1 - Substances that cause cancer in man		
CAN		IARC		Group 1 - Agent is carcinogenic to humans - inhaled from occupational sources		
CAN		IARC		Group 1 - Agent is Carcinogenic to humans		
CAN		GHS - New Zealand		6.7A - Known or presumed human carcinogens		
CAN		GHS - Japan		H350 - May cause cancer [Carcinogenicity - Category 1A]		
CAN		GHS - Australia		H350i - May cause cancer by inhalation [Carcinogenicity - Category 1A or 1B]		
SUBSTANCE NOTES:						

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		CDPH Standard Method V1.1 (Section 01350/CHPS) - Classroom & Office scenario	
CERTIFYING PARTY: Third Party	ISSUE DATE: 2017-08-	EXPIRY DATE:	CERTIFIER OR LAB: UL
APPLICABLE FACILITIES: Stanhope, NJ Houston, TX San Bernardino, CA	01		Environmental
CERTIFICATE URL:			
CERTIFICATION AND COMPLIANCE NOTES: Report# 18652-02			
VOC CONTENT		EPA Method 24 - Volatile Matter Content (EPA 24)	
CERTIFYING PARTY: Third Party	ISSUE DATE: 2005-07-	EXPIRY DATE:	CERTIFIER OR LAB: ITI Anti-
APPLICABLE FACILITIES: Stanhope, New Jersey Houston, Texas San Bernardino, California	05		Corrosion, Inc.
CERTIFICATE URL:			
CERTIFICATION AND COMPLIANCE NOTES:			
OTHER		ILFI Declare - Red List Free	
CERTIFYING PARTY: Third Party	ISSUE DATE: 2018-09-	EXPIRY DATE: 2019-	CERTIFIER OR LAB: International
APPLICABLE FACILITIES: Stanhope, NJ San Bernardino, CA Houston, TX	01	09-01	Living Future Institute
CERTIFICATE URL: https://living-future.org/declare-products/cafco-300-series/			
CERTIFICATION AND COMPLIANCE NOTES: ISK-0010, ISK-0011, ISK-0012			

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.

No accessories are required for this product.

Section 5: General Notes

Impurities are displayed ingredients within the HPD.

Isolatek International provides passive fireproofing materials under the CAFCO® and FENDOLITE® trademarks throughout the Americas and under the ISOLATEK® trademark throughout the remainder of the world.

MANUFACTURER INFORMATION

MANUFACTURER: Isolatek International
ADDRESS: 41 Furnace Street
 Stanhope NJ 07874, USA
WEBSITE: www.isolatek.com

CONTACT NAME: Nicholas Federici
TITLE: Applications & Development Engineer
PHONE: 973-347-1200
EMAIL: technical@isolatek.com

The listed contact is responsible for the validity of this HPD and attests that it is accurate and complete to the best of his or her knowledge.

KEY

Hazard Types

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

GreenScreen (GS)

BM-4 Benchmark 4 (prefer-safer chemical)	LT-1 List Translator 1 (Likely Benchmark-1)
BM-3 Benchmark 3 (use but still opportunity for improvement)	LT-UNK List Translator Benchmark Unknown (the chemical is present on at least one GreenScreen Specified List, but the information contained within the list did not result in a clear mapping to a LT-1 or LTP1 score.)
BM-2 Benchmark 2 (use but search for safer substitutes)	
BM-1 Benchmark 1 (avoid - chemical of high concern)	
BM-U Benchmark Unspecified (due to insufficient data)	
LT-P1 List Translator Possible 1 (Possible Benchmark-1)	NoGS No GreenScreen.

Recycled Types

PreC Pre-consumer recycled content
PostC Post-consumer recycled content
UNK Inclusion of recycled content is unknown
None Does not include recycled content

Other Terms:

GHS SDS Globally Harmonized System of Classification and Labeling of Chemicals Safety Data Sheet

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.



CAFCO 300 Series Isolatek International

Final Assembly: Stanhope, New Jersey, USA; Houston, Texas, USA; San Bernardino, California, USA

Life Expectancy: Life of Structure Year(s)

End of Life Options: Landfill (100%)

Ingredients:

CAFCO 300 / 300AC / 300HS: Calcium Sulfate, Hemihydrate; Vermiculite; Bentonite Clay; Calcium Carbonate; Cellulose; Quartz

Living Building Challenge Criteria: Compliant

I-13 Red List:

- | | |
|---|-----------------------------|
| ☒ LBC Red List Free | % Disclosed: 100% at 100ppm |
| ☐ LBC Red List Approved | VOC Content: 0 g/L |
| ☐ Declared | |

I-10 Interior Performance: CDPH Standard Method v1.2-2017

I-14 Responsible Sourcing: Not Applicable

ISK-0004

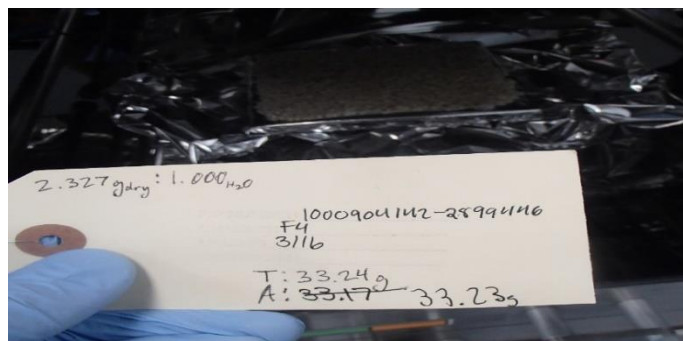
EXP. 01 DEC 2023

Original Issue Date: 2017



INDOOR AIR QUALITY EVALUATION FOLLOWING THE REQUIREMENTS OF CDPH/EHLB/STANDARD METHOD		
Product Description**	CAFCO 300/ISOLATEK TYPE 300	
Customer Information	ISOLATEK INTERNATIONAL PHILIP MANCUSO 41 FURNACE ST STANHOPE NJ 07874-2624	
Testing Laboratory	UL Environment - Marietta, 2211 Newmarket Parkway, Marietta, GA 30067-9399 USA	
Product Category	Building Products	
Date Received	February 19, 2020	
Test Description	The product was received by UL Environment as packaged and shipped by the customer. The package was visually inspected and stored in a controlled environment immediately following sample check-in. The product was weighed out and water was applied according to the product:water ratio, then the product was applied to a pre-weighed foil wrapped flooring size tray. The total product weight was within 5% of the target weight. The assembly was immediately inserted into the environmental chamber and tested according to the specified protocol.	
Test Date	March 2, 2020 - March 16, 2020	
Product Area Exposed	one-sided area = 0.0361 m²	
Chamber Volume	0.0851 m³	
Product Loading Ratio	0.42 m²/m³	
Test Chamber Conditions	Air change rate: 1.00 ± 0.05 1/h Inlet air flow rate: 0.0851 ± 0.004 m³/h	Temperature: 23.0°C - 23.6°C Relative Humidity: 50% RH ± 5%
Test Method	CDPH - CA Section 01350 <i>Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers</i> Version 1.2.	
Authorized by	 Allyson M. McFry Chemistry Laboratory Director	
*The temperature range specification is 23°C ± 1°. The actual temperature range listed above may vary slightly. If the range is outside this specification, data was reviewed to ensure a negative impact did not occur. **The product tested was CAFCO 300, but the composition of CAFCO 300 and ISOLATEK Type 300 was confirmed by client to be identical. The composition of CAFCO 300 was confirmed by the client to be identical or almost identical to the other products in the series: CAFCO 300 AC, 300 HS, 300 ES, and 300 SB and ISOLATEK Type 300, 300 AC, 300 HS, 300 ES, and 300 SB. This test is accredited and meets the requirements of ISO/IEC 17025 as verified by ANSI National Accreditation Board. Refer to certificate and scope of accreditation AT-1297.		

PHOTOGRAPH OF SAMPLE



RESULTS SUMMARY

Product Description		CAFCO 300/ISOLATEK TYPE 300			
Environment	Product Usage	Product Surface Area	Room Volume	Ventilation Rate (ACH)	Product Compliance?
Classroom	wall	94.6 m ²	231 m ³	0.82	Yes
Office	wall	33.4 m ²	30.6 m ³	0.68	Yes
Residential	N/A	N/A	N/A	N/A	N/A

N/A – not applicable

PROJECT DESCRIPTION

The product was monitored for emissions of TVOC, individual VOCs, formaldehyde and other aldehydes over the 96-hour test period. Measurements were made and predicted exposures were calculated according to the CA Section 01350 protocol. As specified in this protocol, the results at 96 hours, after 10 days of conditioning, were compared to ½ (one-half) the current Chronic Reference Exposure Levels (CRELs), as adopted from the California OEHHA list. All identified VOCs were also compared to the California-EPA OEHHA Proposition 65 list and the California-EPA Air Resource Board list of Toxic Air Contaminants (TACs).

Report Outline:

Table 1	Comparison of Data To Method Requirements
Table 2	Chamber Concentrations and Emission Factors
Table 3	Most Abundant Compounds
Table 4	VOC Predicted Air Concentrations And Regulatory Information
Chain of Custody	Chain of Custody

Download more information regarding UL's technical references and resources, product evaluation methodologies information, quality control program, and environmental chamber evaluations from our website [click here](#) or <https://www.ul.com/offerings/greenguard-certification>

For RSD, Quality Assurance Report or other quality documents, [Request](#) here or contact ULE.

TABLE 1

Product Description			CAFCO 300/ISOLATEK TYPE 300					
COMPARISON OF DATA TO METHOD REQUIREMENTS AT 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING								
Compound	CAS Number	½ CREL (µg/m³)	Chamber Concentration (µg/m³)	Emission Factor†† (µg/m²·hr)	Classroom Predicted Concentration (µg/m³)**	Office Predicted Concentration (µg/m³)**	Residential Predicted Concentration (µg/m³)**	Meets ½ CREL? (Classroom/ Office/ Residential)
Acetaldehyde	75-07-0	70	BQL	BQL	BQL	BQL	N/A	Yes
Benzene	71-43-2	1.5	BQL	BQL	BQL	BQL	N/A	Yes
Carbon disulfide*	75-15-0	400	BQL	BQL	BQL	BQL	N/A	Yes
Carbon tetrachloride*	56-23-5	20	BQL	BQL	BQL	BQL	N/A	Yes
Chlorobenzene	108-90-7	500	BQL	BQL	BQL	BQL	N/A	Yes
Chloroform*	67-66-3	150	BQL	BQL	BQL	BQL	N/A	Yes
Dichlorobenzene (1,4-)	106-46-7	400	BQL	BQL	BQL	BQL	N/A	Yes
Dichloroethylene (1,1)*	75-35-4	35	BQL	BQL	BQL	BQL	N/A	Yes
Dimethylformamide (N,N-)*	68-12-2	40	BQL	BQL	BQL	BQL	N/A	Yes
Dioxane (1,4-)	123-91-1	1,500	BQL	BQL	BQL	BQL	N/A	Yes
Epichlorohydrin	106-89-8	1.5	BQL	BQL	BQL	BQL	N/A	Yes
Ethylbenzene	100-41-4	1,000	BQL	BQL	BQL	BQL	N/A	Yes
Ethylene glycol	107-21-1	200	BQL	BQL	BQL	BQL	N/A	Yes
Ethylene glycol monoethyl ether acetate*	111-15-9	150	BQL	BQL	BQL	BQL	N/A	Yes

Product Description			CAFCO 300/ISOLATEK TYPE 300					
COMPARISON OF DATA TO METHOD REQUIREMENTS AT 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING								
Compound	CAS Number	½ CREL (µg/m³)	Chamber Concentration (µg/m³)	Emission Factor†† (µg/m²•hr)	Classroom Predicted Concentration (µg/m³)**	Office Predicted Concentration (µg/m³)**	Residential Predicted Concentration (µg/m³)**	Meets ½ CREL? (Classroom/Office/Residential)
Ethylene glycol monoethyl ether*	110-80-5	35	BQL	BQL	BQL	BQL	N/A	Yes
Ethylene glycol monomethyl ether acetate*	110-49-6	45	BQL	BQL	BQL	BQL	N/A	Yes
Ethylene glycol monomethyl ether*	109-86-4	30	BQL	BQL	BQL	BQL	N/A	Yes
Formaldehyde	50-00-0	9.0***	BQL	BQL	BQL	BQL	N/A	Yes
Hexane (n-)	110-54-3	3,500	BQL	BQL	BQL	BQL	N/A	Yes
Isophorone*	78-59-1	1,000	BQL	BQL	BQL	BQL	N/A	Yes
Isopropanol	67-63-0	3,500	BQL	BQL	BQL	BQL	N/A	Yes
Methyl chloroform*	71-55-6	500	BQL	BQL	BQL	BQL	N/A	Yes
Methyl t-butyl ether	1634-04-4	4,000	BQL	BQL	BQL	BQL	N/A	Yes
Methylene chloride*	75-09-2	200	BQL	BQL	BQL	BQL	N/A	Yes
Naphthalene	91-20-3	4.5	BQL	BQL	BQL	BQL	N/A	Yes
Phenol	108-95-2	100	BQL	BQL	BQL	BQL	N/A	Yes
Propylene glycol monomethyl ether*	107-98-2	3,500	BQL	BQL	BQL	BQL	N/A	Yes
Styrene	100-42-5	450	BQL	BQL	BQL	BQL	N/A	Yes
Tetrachloroethylene (perchloroethylene)	127-18-4	17.5	BQL	BQL	BQL	BQL	N/A	Yes
Toluene	108-88-3	150	BQL	BQL	BQL	BQL	N/A	Yes
Trichloroethylene	79-01-6	300	BQL	BQL	BQL	BQL	N/A	Yes

Date Issued: March 25, 2020
 Product ID #: 1000904142-2899446
 Refer to ULE Report: 1000904142-2899446R1
 ©2020 UL
 CDPHR2
Supersedes ULE Report: 1000904142-2899446

Product Description			CAFCO 300/ISOLATEK TYPE 300					
COMPARISON OF DATA TO METHOD REQUIREMENTS AT 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING								
Compound	CAS Number	$\frac{1}{2}$ CREL (µg/m³)	Chamber Concentration (µg/m³)	Emission Factor ^{††} (µg/m²·hr)	Classroom Predicted Concentration (µg/m³)**	Office Predicted Concentration (µg/m³)**	Residential Predicted Concentration (µg/m³)**	Meets $\frac{1}{2}$ CREL? (Classroom/Office/Residential)
Vinyl acetate	108-05-4	100	BQL	BQL	BQL	BQL	N/A	Yes
Xylenes (m-, o-, p-)	1330-20-7	350	BQL	BQL	BQL	BQL	N/A	Yes

BQL denotes below quantifiable level of 0.04 μg for individual VOCs, with the exceptions benzene and epichlorohydrin which have a QL of 0.02 μg , based on a standard 18 L air collection volume.

^{††}The emission factor (EF) is calculated from the chamber concentration (CC), the chamber air change rate (N_c), the chamber volume (V_c), and the product area exposed in the chamber (A_c) as: $EF = (CC \cdot V_c \cdot N_c) / A_c$.

^{**}The predicted building exposure concentration (BC) is calculated from the emission factor (EF), the building air change rate (N_b), the building room volume (V_b), and the product area exposed in the building room (A_b) as: $BC = (EF \cdot A_b) / (V_b \cdot N_b)$. For more information on Predicted Concentration modeling parameters, [click here](#).

^{***}Guidance value per CA Standard Method
 N/A – not applicable

Date Issued: March 25, 2020
 Product ID #: 1000904142-2899446
 Refer to ULE Report: 1000904142-2899446R1
 ©2020 UL
 CDPHR2
Supersedes ULE Report: 1000904142-2899446

TABLE 2

Product Description		CAFCO 300/ISOLATEK TYPE 300
CHAMBER CONCENTRATIONS AND EMISSION FACTORS FOR TVOC AND FORMALDEHYDE AT 24, 48, AND 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING		
Elapsed Exposure Hour After 10 Days Conditioning	Chamber Concentration (µg/m³)	Emission Factor^{††} (µg/m²•hr)
TVOC[†]		
24	BQL	BQL
48	BQL	BQL
96	BQL	BQL
Formaldehyde[‡]		
24	BQL	BQL
48	BQL	BQL
96	BQL	BQL

BQL denotes below quantifiable level of 2 µg/m³.

Exposure hours are nominal (± 1 hour).

[†]Defined as the sum of those VOCs that elute between the retention times of n-hexane (C₆) and n-hexadecane (C₁₆) on a non-polar capillary GC column quantified based on a toluene response factor.

[‡]Compound identified and quantified by DNPH derivitization and HPLC/UV analysis.

^{††}The emission factor (EF) is calculated from the chamber concentration (CC), the chamber air change rate (N_C), the chamber volume (V_C), and the product area exposed in the chamber (A_C) as: $EF = (CC \cdot V_C \cdot N_C) / A_C$.

TABLE 3

Product Description		CAFCO 300/ISOLATEK TYPE 300				
TEN MOST ABUNDANT IDENTIFIED INDIVIDUAL VOLATILE ORGANIC COMPOUNDS (VOCs) AND/OR ALDEHYDES AT 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING						
CAS Number	Compound	Chamber Concentration (µg/m³)	Emission Factor†† (µg/m²•hr)	Calculated Predicted Exposure Concentration** (µg/m³)		
				Classroom	Office	Residential
---	TVOC‡‡	---	---	---	---	N/A

Exposure hours are nominal (± 1 hour).

VOC data obtained by scanning GC/MS; identification of compound made by retention time and mass spectral characteristics.

†Quantified using multipoint authentic standard curve. Other VOCs quantified relative to toluene.

*Identification based on NIST mass spectral database only.

‡Compound identified and quantified by DNPH derivitization and HPLC/UV analysis.

††The emission factor (EF) is calculated from the chamber concentration (CC), the chamber air change rate (N_c), the chamber volume (V_c), and the product area exposed in the chamber (A_c) as: $EF = (CC \cdot V_c \cdot N_c) / A_c$.

‡‡Defined as the sum of those VOCs that elute between the retention times of n-hexane (C_6) and n-hexadecane (C_{16}) on a non-polar capillary GC column quantified based on a toluene response factor.

**The predicted building exposure concentration (BC) is calculated from the emission factor (EF), the building air change rate (N_b), the building room volume (V_b), and the product area exposed in the building room (A_b) as: $BC = (EF \cdot A_b) / (V_b \cdot N_b)$. For more information on Predicted Concentration modeling parameters, [click here](#).

N/A – not applicable

TABLE 4

Product Description		CAFCO 300/ISOLATEK TYPE 300							
VOC PREDICTED AIR CONCENTRATIONS AND REGULATORY INFORMATION AT 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING									
CAS Number	Compound	Chamber Concentration (µg/m³)	Emission Factor†† (µg/m²•hr)	Predicted Exposure Concentration** (µg/m³)			✓ Indicates Presence On List		
							CA PROP 65	CA AIR TOXIC	CREL
				Classroom	Office	Residential			
---	none	---	---	---	---	N/A	---	---	---

[†]Quantified using multipoint authentic standard curve. Other VOCs quantified relative to toluene.

[‡]Compound identified and quantified by DNPH derivitization and HPLC/UV analysis.

^{††}The emission factor (EF) is calculated from the chamber concentration (CC), the chamber air change rate (N_c), the chamber volume (V_c), and the product area exposed in the chamber (A_c) as:
 $EF = (CC \cdot V_c \cdot N_c) / A_c$

^{**}The predicted building exposure concentration (BC) is calculated from the emission factor (EF), the building air change rate (N_b), the building room volume (V_b), and the product area exposed in the building room (A_b) as: $BC = (EF \cdot A_b) / (V_b \cdot N_b)$. For more information on Predicted Concentration modeling parameters, [click here](#).

CAL Prop. 65: California Health and Welfare Agency, Proposition 65 Chemicals

1 = known to cause cancer

2 = known to cause reproductive toxicity

CAL Toxic Air Contaminant:

I) Substances identified as Toxic Air Contaminants, known to be emitted in California, with a full set of health values reviewed by the Scientific Review Panel.

IIA) Substances identified as Toxic Air Contaminants, known to be emitted in California, with one or more health values under development by the Office of Environmental Health Hazard Assessment for review by the Scientific Review Panel.

IIB) Substances NOT identified as Toxic Air Contaminants, known to be emitted in California, with one or more health values under development by the Office of Environmental Health Hazard Assessment for review by the Scientific Review Panel.

III) Substances known to be emitted in California, and are NOMINATED for development of health values or additional health values.

IVA) Substance identified as Toxic Air Contaminants, known to be emitted in California, and are TO BE EVALUATED for entry into Category III.

IVB) Substance NOT identified as Toxic Air Contaminants, known to be emitted in California, and are TO BE EVALUATED for entry into Category III.

V) Substance identified as Toxic Air Contaminants, and NOT KNOWN TO BE EMITTED from stationary source facilities in California based on information from the AB 2588 Air Toxic "Hot Spots" Program and the California Toxic Release Inventory.

VI) Substances identified as Toxic Air Contaminants, NOT KNOWN TO BE EMITTED from stationary source facilities in California, and are active ingredients in pesticides in California.

Chronic REL: California Office of Environmental Health Hazard Assessment (OEHHA), Chronic Reference Exposure Levels

✓ = Found in Listing

N/A – not applicable

Product Description	CAFCO 300/ISOLATEK TYPE 300
CHAIN OF CUSTODY	

INTERNAL Use Only

Project #	1000904142		
Product #	2899446		
Order #	13117409		
Task Line	1.1	UL BU	
1 of 1			

2899446



2899446

Description
CAFCO 300/ISOLATEK TYPE 300

Customer: ISOLATEK INTERNATIONAL
Aurora Project No.: 1000904142
Order No.: 13117409
Received Date: 2020-FEB-20 04:47:06 PM Oracle Project No.: 4789245226

2 of 3

CUTMCA044

100029736

☐ **Rush Request – Subject to upcharge.** Customer must confirm with UL prior to submitting product.

GREENGUARD Test Information			
Test Type	☐ Certification Test • Annual/Initial Year _____ ☐ Quarterly Test • Year _____ Quarter _____		
Service Line	☐ Out-of-Scope Test ☐ Profile Study Test		
Test Group	☐ GREENGUARD ☐ GREENGUARD GOLD ☒ Other <u>UL 2755 V1.2 TESTING</u>		
Product Category	Building Products	Subcategory	
Application	☒ Floor/Ceiling ☐ Panel ☐ Wall ☐ Work Surface ☐ Other: _____		
Wet Products Only	Coverage Rate	Density	Specific Gravity

Product and Company Information			
Product Description	CAFCO 300 ISOLATEK TYPE 300		
Manufacture ID#	19313-51		
Company Name	ISOLATEK INTERNATIONAL	Date Manufactured	mm/dd/yyyy 11/09/2019
Address	41 FURNACE STREET	Contact Name	DAN EHEHALT
	STANDHOPE, NJ 07874	Job Title	TECHNICAL SERVICE / PRODUCT MANAGER
		Contact Phone	973-347-1200 EXT 275
		Contact Email	DEHEHALT@ISOLATEK.COM

Collection Information			
Collector Name	ANGELICA SICKEL	Date Collected	mm/dd/yyyy 11/09/2019 01/17/2020
Collector Phone	973-347-1200 EXT 259	Time Collected	10:00 AM
Collector Signature	Angelica Sickel	Collection Location	STANDHOPE, NJ

Shipping Information			
Carrier	UPS	Date Shipped	mm/dd/yyyy 02/17/2020
Shipper Name	Angelica Sickel	Time Shipped	11:15am
Shipper Phone	973-347-1200 EXT 259	Air Bill #	12576E0003 90992932
Shipper Signature	Angelica Sickel		

Sample Submitted to			
☒ UL Environment (Marietta) 2211 Newmarket Pkwy Suite 106 Marietta, GA 30067, USA	☐ UL Verification Services (Guangzhou) Building A1, 3F, Nansha Science and Technology Innovation Ctr. No. 25, South Huanshi Avenue, Nansha District, Guangzhou 511458, China	☐ UL International Italia S.r.l. ATTN: IAQ Laboratory Via Europa, 9 I - 22060 - Cabiato (Como), Italia	☐ Other

Post Testing Sample Disposition	
(Sample will be disposed of 30 days after report is issued if information below is not provided)	
Return Shipping Co.	Customer Shipping Acct #

Internal Use Only – Receiving Information			
Receiver Name	Condition Upon Arrival	Receiver Signature	Receive Date
	☒ Acceptable ☐ Not Acceptable		2/19/20
Condition Notes		Receive Time	11:05 AM
Completed By	Based On	Date	



VOC EMISSION RESULTS COMPARISON TO STANDARD

Standard referenced: CDPH/EHLB/Standard Method V1.2 (January 2017) "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" (aka CA Section 01350).

PRODUCT SAMPLE INFORMATION

Manufacturer	ISOLATEK INTERNATIONAL
Product Description	CAFCO 300/ISOLATEK TYPE 300
Product Type	Building Products
UL Sample Identification	1000904142-2899446
Manufactured Date	November 9, 2019
Test Completed Date	March 16, 2020
UL Report #	1000904142-2899446
Report Date	March 23, 2020

TEST RESULTS COMPARISON TO STANDARD CRITERIA

Environment	Classroom		Office		Residential	
Surface Area	94.6 m ²		33.4 m ²		N/A	
	Criterion	Meets?	Criterion	Meets?	Criterion	Meets?
Individual VOC	≤ ½ CREL	Yes	≤ ½ CREL	Yes	≤ ½ CREL	N/A
Formaldehyde	≤ 9.0 µg/m ³	Yes	≤ 9.0 µg/m ³	Yes	≤ 9.0 µg/m ³	N/A

Environment	Classroom	Office	Residential
Surface Area	94.6 m ²	33.4 m ²	N/A
TVOC	0.5 mg/m ³ or less	0.5 mg/m ³ or less	N/A

N/A – not applicable

TVOC comparison is based on LEED BD+C: New Construction v4 (LEED v4), Indoor environmental quality (EQ) category/Low-emitting materials credit/Emissions and content requirements/General emissions evaluation.

<http://www.usgbc.org/node/2614095?return=/credits/new-construction/v4/indoor-environmental-quality>

Authorized by	 Allyson McFry Chemistry Laboratory Manager
----------------------	--

Complete testing and data results are presented in UL Environment Report

Disclaimer: This Comparison affirms that: 1) the product sample was tested according to the referenced standard; 2) the measured VOC emissions were evaluated for the defined exposure scenario(s); and 3) if so indicated above that the results meet the criteria of the referenced standard(s). UL Environment did not select the samples, determine if the samples were representative of production samples, witness the production of test samples, or were we provided with information relative to the formulation or identification of component materials used in the test samples. The test results apply only to the actual samples tested. The issuance of this Comparison in no way implies Listing, Classification or Recognition by UL and does not authorize the use of UL Listing, Classification or Recognition Marks or any other reference to UL on the product or system. UL Environment authorizes the above named company to reproduce this Comparison provided it is reproduced in its entirety. The name, brand or marks of UL cannot be used in any packaging, advertising, promotion or marketing relating to the data in this Comparison, without UL's prior written permission. UL, its subsidiaries, employees and agents shall not be responsible to anyone for the use or nonuse of the information contained in this Comparison, and shall not incur any obligation or liability for damages, including consequential damages, arising out of or in connection with the use of, or inability to use, the information contained in this Comparison.



ITI Anti-Corrosion, Inc.

The Coatings Laboratory

10175 Harwin, Suite 110
Houston, Texas 77036

Telephone: (713) 981-9368
Fax: (713) 776-9634
paintlab@iti-anti-corrosion.com
www.itlworld.com

Testing, Analysis, Failure Investigation, Formulation & Consultancy

Isolatek International
41 Furnace Street
Stanhope, NJ 07874

CERTIFICATE OF TEST

DETERMINATION OF VOC CONTENT OF COATINGS MATERIAL
IN ACCORDANCE WITH EPA FEDERAL REFERENCE METHOD 24

MATERIAL TESTED: CAFCO® 300

The appropriate test procedures and calculations were determined by referencing
ASTM D 3960.

MATERIAL TYPE:

Water based coating material.

TEST RESULTS:

Volatile Organic Compound Content

0.0 lbs/gallon CAFCO® 300

Sincerely,

Thomas R. Schwerdt
Managing Chemist

July 5, 2005