

The background of the slide is a collage of three images. On the left is a close-up of a green leaf with prominent veins. In the center is a landscape featuring a blue body of water, a green shoreline, and a blue sky with white clouds. On the right is a solid green vertical bar.

ANSI/NSC 373 and NSC Chain of Custody Sustainable Production of Natural Dimension Stone Certification Process

Agenda



Presented by Jamie Bush, Business Development Manager, NSF International

1. Overview of NSF International
2. Overview of Natural Stone Council (NSC)
3. Overview of ANSI/NSC 373 & NSC Chain of Custody Standard
4. Review of Certification process

Presented by Mahya Wood, Toxicologist , NSF International

5. How to assess your chemicals?

Presented by Brenda Edwards, Owner of TexaStone Quarries

6. Certification Experience

Q&A - All participate

NSF International



NSF International is an independent, not-for-profit, non-governmental public health and safety organization.

Our mission and focus has always been protecting and improving human health and the environment!



An Unmatched Professional Staff and Facility



- 1,700+ experienced professionals: microbiologists, toxicologists, chemists, engineers and public health experts
- 254,000+ square feet of state-of-the-art laboratories in North America, Europe, Latin America and Asia, plus partner labs around the world
- NSF laboratories are ISO/IEC 17025 accredited (testing and calibration), and provide a wide range of testing, certification and technical services for a wide range of industries
- NSF's Applied Research Center provides custom research and development services including contract method development, testing and consulting services in chemistry, microbiology, genomics and toxicology, product claim verification, lab quality/management, methods training and human health risk assessment



NSF Around the Globe



Leader in Sustainability Certifications



- NSF/ANSI140 Carpet
- NSF/ANSI 332 Resilient floor coverings
- NSF/ANSI 336 Commercial furnishing fabric
- NSF/ANSI 342 Wallcovering products
- NSF/ANSI 347 Single ply roofing membranes
- NSF/GCI 355 Greener Chemical Products & Processes
- NSF 391 Service providers
- BIFMA e3/ANSI Furniture
- **ANSI/NSC 373 Natural Dimension Stone**
- *Launch of sustainability standards for all water-related distribution and treatment products*
 - *Expected completion in early 2015*



First Speaker

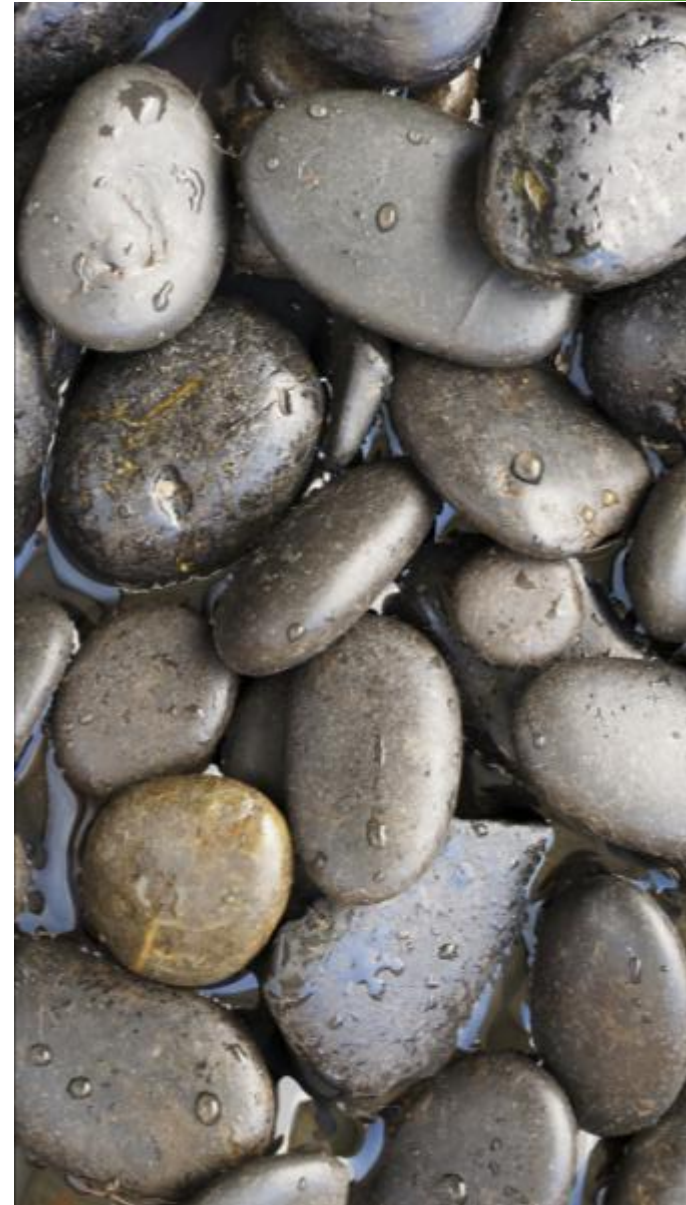


Jamie Bush, Business Development Manager, NSF

Who is the NSC?



- Collaboration of businesses and trade associations
- Joined forces to promote the use of natural stone
- Commercial, residential, government, institutional and educational applications
- Interior and exterior
- Increase the understanding, preference for and consumption of natural stone



Purpose of ANSI/NSC 373



The purpose of the Sustainability Assessment for Natural Dimension Stone is to recognize sustainability practices in the natural stone industry. The standard establishes a set of environmental, ecological, social responsibility and human health metrics through a multi-stakeholder, science based approach.



Scope of ANSI/NSC 373



ANSI/NSC 373 Standard applies to all processors of natural stone, from quarry operations through final stone fabrication, and is intended to allow for both domestic and international market participation from natural dimension stone producers.



ANSI/NSC 373 Overview



10 Subject Categories:

- Section 5: Water (max 6 points)
- Section 6: Custody & transportation (2 required credits only)
- Section 7: Site management (max 4 points)
- Section 8: Land reclamation & adaptive reuse (max 7 points)
- Section 9: Corporate governance (max 2 points)
- Section 10: Energy (max 7 points)
- Section 11: Management of excess process materials & solid waste (max 5 points)
- Section 12: Safer Chemical & material management (max 7 points)
- Section 13: Human health and safety (max 2 points)
- Section 14: Innovation (max 4 points)



Certification Achievement Levels



There are 4 levels of Sustainable Product Achievement Certification:



- ✓ Bronze: All required criteria for each facility operator
- ✓ Silver: All required criteria and a minimum of 8 points
- ✓ Gold: All required criteria and minimum 15 of points
- ✓ Platinum: All required criteria and minimum of 22 points

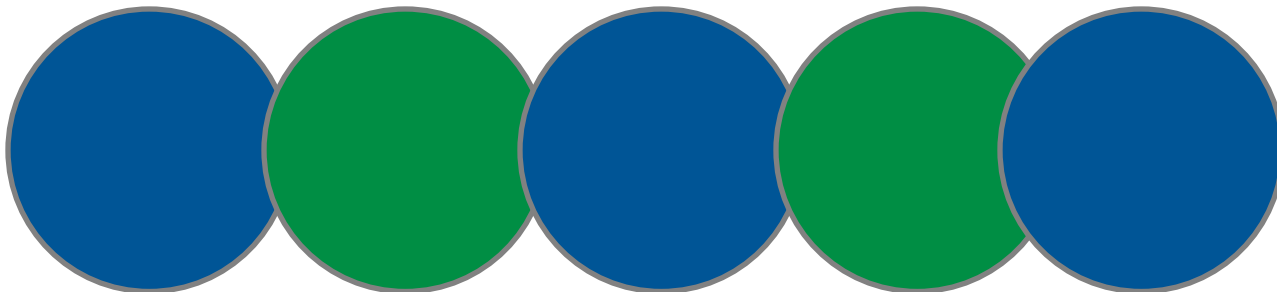
There are a total of 40 points that can be achieved.

Purpose of NSC Chain of Custody Standard



NSC Chain of Custody Standard is the standard that applies for the certification of all Chain of Custody operations and may be combined with certification to ANS/NSC 373 Sustainability Assessment for Natural Dimension Stone, according to the scope of the organization's activities.

For a product to be claimed as Genuine Stone certified, there must be an unbroken chain of certified organizations covering every change in the legal ownership of product from the certified quarry up to the point where the product is finished or sold to retail.



Overview and Scope of Chain of Custody Standard



The Chain of Custody Standard specifies the management and production requirements for chain of custody control with respect to sourcing, labeling (where applicable) and sale of products as Genuine Stone certified.

The standard defines and addresses the basic elements of a Chain of Custody management system, which includes:

- Quality management
- Material receipt and storage
- Volume control
- Sales and Delivery
- General labeling requirements
- Outsourcing



Benefits of NSC 373 & Chain of Custody Certification



- Distinguish “green” stone from competitors and enhance your brand.
- Obtain preferred vendor status from those seeking sustainable solutions.
- Meet State and Federal procurement guidelines
- Save money by adopting more sustainable operational practices and business approaches.
- Achieve the most credible type of certification available in the marketplace
- ANSI/NSC 373 has a Chain of Custody (CoC) program



The Certification Process

How to Apply for Certification




1. Purchase the standard from the NSC web site
<http://naturalstonecouncil.org/shop/>
2. Complete an information form indicating
 - Type of certification (NSC 373 or Chain of Custody)
 - Location and number of sites
 - Type of stone (if applicable)
 - Level of Certification (NSC 373 only)
 - Description of operations
3. NSF will develop a proposal based on the information form.
4. Once the proposal is accepted, an application and contract will be submitted to NSF for Certification.
5. Once an application and contract is received by NSF, we will provide tools to assist in the Certification process.

TOOLS for NSC 373



- **Audit Point Matrix**
 - Tool to help track points throughout the Certification process
- **Guidance Document**
 - This document provides guidance on each credit in NSC 373 regarding what type of documentation NSF will be looking for in the document review.
 - Formulated spreadsheets
- **Kick Off Call**
 - Review audit process, discuss how to submit documentation, review timelines, answer questions.
 - Introduction to your Project Manager
- **Toxicology webinar on “how to assess your chemicals”**
 - 12.1, 12.3 and 12.4



 Section	NSC 373 - Sustainability Assessment for Natural Dimension Stone	Max. Allowed Points	Site 1			
			Points Applied	Granted Doc Review	Contingent On-Site Audit	Granted On-Site Audit
5.1	Required- Water Inventory	NA				
5.2.1	Required - Recycled water (minimum of 25%)	NA				
5.2.2	Recycled water (26%-89%)	2				
5.3.1	Enhanced water treatment	2				
5.3.2	Enhanced sludge management	1				
5.3.3	Water reuse	1				
Subtotal		6	0	0	0	0
6.1	Required - Transportation activity tracking and management program	NA				
6.2	Required - Chain of custody documentation	NA				
Subtotal			0	0	0	0
7.1	Required - Site management plan	NA				
7.2.1	Ecosystem boundaries	1				
7.2.2	Environmental impact assessment	2				
7.3	Verification of site management plan	1				
Subtotal		4	0	0	0	0
8.1	Required - Post closure reclamation plan	NA				
8.2	Community involvement	2				
8.3	Exemplary site closure	2				
Subtotal		4	0	0	0	0
9.1	Required - Prohibitions on forced labor	NA				
9.2	Required - Prohibitions on child labor	NA				
9.3	Required - Prevention of discrimination	NA				
Subtotal		4	0	0	0	0
TOTAL POINTS		31	0	0	0	0
GRAND TOTAL		31	0			
CERTIFICATION LEVEL						

Certification Preparation

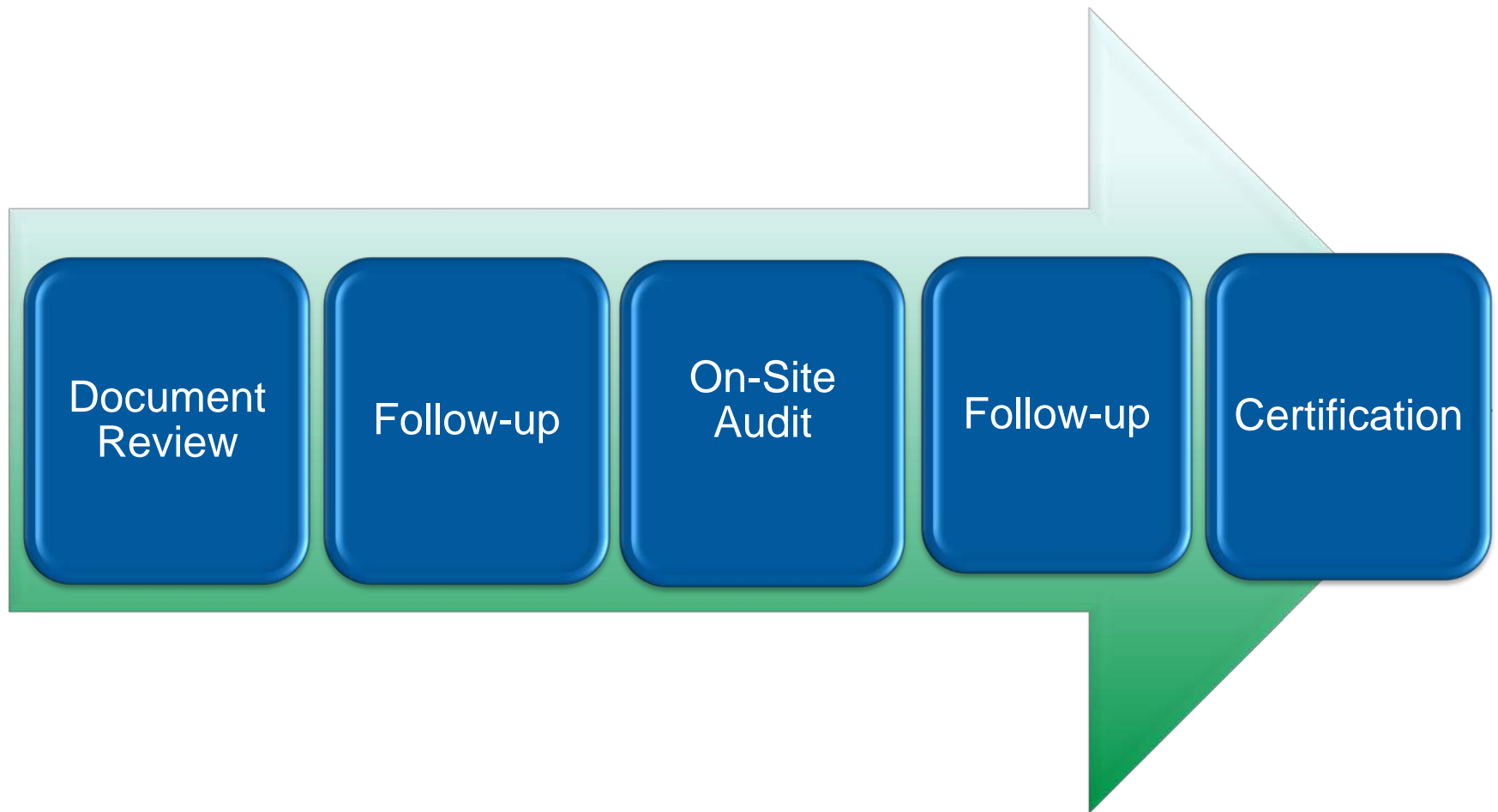


In addition to the tools NSF provides, we recommend the following in preparing for certification:

1. Define products and sites
2. Complete the point matrix
 - It is a good idea to go for more points than you need for a Certification.
3. Establish an internal team to gather documentation for NSC 373 Certification.
 - Responsibility for documentation submission often given to one person to gather information from operations, engineering, maintenance, HR. etc. Using a cross-functional team may speed up data and document



Certification Process Flow



Document Review



- **Off-site Documentation Review**
 - Most time intensive step
 - The on-site audit will not be scheduled until the document review is complete.
- **Supporting documentation is needed for each credit, this document may include:**
 - Summary tables;
 - Excel spreadsheets tools;
 - Reports;
 - Do not need to send source data (e.g. utility records) unless it is easy to do so (e.g., test results).



Document Review- What we look for?



- Is the information technically correct?
- Are all involved plants included?
- Are the performance period/baseline years correct?
- Were all parts of a numbered requirement met?



Document Review Results



Once the documentation is received by NSF

- We divide it up and send it to various specialists for review
- A detailed documentation review is conducted for each credit applied for.
- Results of the document review are documented on a point matrix and sent to you prior to the on-site audit.
- NSF creates a specific list of on-site audit items for your facility based on the results of the document review.



Scheduling On-Site audit



- Once your document review is complete and majority of the requirements are met or are in “Contingent On-Site” status, your Project Manager will schedule your audit.
- Before your audit date, you will receive an agenda that includes the following:
 - Opening Meeting/Closing meeting
 - Tour of Facility
 - List of items to be confirmed

On-Site Audit



- The on-site audit is a confirmatory (not exploratory audit). The purposes are:
 - Confirm if what we see on-site matches what was submitted via the document review.
 - Audit to requirements that can only be audited on-site (e.g., confidential information)
- The auditor will work with you to develop an audit schedule.
 - Interviews are usually limited to those involved in reporting/gathering documentation.
- During the opening and closing meeting the auditor will provide an overview of the process and findings.
- Your Project Manager will provide a report of items following the audit.

NSC 373 Certification Audit Cycle



3 Year Audit Cycle

Year 1: Newly Certified

Full certification review

- Document Review
 - On-site audit

Year 2 and 3 Surveillance Review

- Document review only

Year 4 Recertification Review

- Document review
- On-site audit

NOTE: Quarries and Processors can be upgraded to a higher level of Certification at any time

- Depending on the points you apply for, we may not need to go back on-site.

Chain of Custody Certification Audit Cycle



3 Year Audit Cycle

Year 1: Initial Review

- Initial Documentation Review
- On-site audit

Year 2 and 3 Review

- On-site audit

Year 4 Recertification Review

- Documentation review
- On-site audit

NOTE: On-site audits for Chain of Custody will be performed every year.

Certified Listing



- **Once a quarry, processor or distributor has achieved NSC Certification, it will be listed on the NSF website (www.nsf.org). The listing will include the following:**
 - Company name and address;
 - Facility location;
 - Sustainability achievement level (NSC 373 only);
 - Certification number;
 - Certification period.
- **Your clients will be able to directly reference a Certified product on www.nsf.org and pull up a printable certificate.**

How to Assess Your Chemicals



Presented by Mahya Wood, Toxicologist , NSF International

12.1 Required – Chemical Inventory



- **Inventory**
 - Includes all chemicals used in:
 - Quarry operations
 - Primary processing of stone
 - Excludes chemicals used in maintenance.
- **MSDS required for every material on inventory (or an explanation of why material is exempt).**
- **Trade name and supplier on inventory form must match MSDS.**
- **MSDS level of disclosure of chemicals is sufficient.**

NSF Inventory Form



Alternate Supplier? (enter same letter for alternate suppliers, e.g. "A")	Material Trade Name Appearing on MSDS	Material Manufacturer Name Appearing on MSDS	Material Distributor	Ingredients (CAS#s) listed on MSDS	MSDS attached (check here)
A	Solv 500	Chemical Company X	Quick Supply	Ethanol (64-17-5) + Methanol (67-56-1)	X

Example MSDS – Chemical Information



- The “composition section”.

Ingredients (CAS#s) listed on MSDS

Ethanol (64-17-5) + Methanol (67-56-1)

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Synonyms : Ethyl alcohol
Methylated spirit

Formula : C_2H_6O
Molecular weight : 46.07 g/mol

Hazardous components

Component		Classification	Concentration
Ethanol			
CAS-No.	64-17-5	Flam. Liq. 2; H225	<= 100 %
EC-No.	200-578-6		
Index-No.	603-002-00-5		
Methanol			
CAS-No.	67-56-1	Flam. Liq. 2; Acute Tox. 3; STOT SE 1; H225, H301 + H311 + H331, H370	>= 1 - < 5 %
EC-No.	200-659-6		
Index-No.	603-001-00-X		
Registration number	01-2119433307-44-XXXX		

For the full text of the H-Statements mentioned in this Section, see Section 16.

Example MSD – Chemical Information



- The “regulatory section”

Ingredients (CAS#s) listed on MSDS

Ethanol (64-17-5) + Methanol (67-56-1)

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01
Ethanol	64-17-5	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01
Ethanol	64-17-5	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01
Ethanol	64-17-5	2007-03-01

California Prop. 65 Components

	CAS-No.	Revision Date
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NSF Inventory Form



List Annex A <u>Priority</u> Chemicals of Concern as disclosed on MSDS or by Supplier. List each Priority COC with the following information: Chemical name, CAS#, and Concern Designation	List Annex A <u>Secondary</u> Chemicals of Concern as disclosed on MSDS or by Supplier. List each secondary COC with the following information: Chemical name, CAS# and Concern Designation
Ethanol (64-17-5) IARC Group1 Agent is Carcinogenic to Humans + Methanol (67-56-1) US NIH A-Clear evidence of adverse developmental toxicant effects, Prop 65 Developmental toxicity	

See Annex A for Priority Chemicals of Concern and Secondary Chemicals of Concern.

Chemicals of Concern – Option 1: Check out every list one at a time



Annex A

Informational Sources¹⁴

The following resources are all considered authoritative sources of environmental and human health hazard data.

A.1 Priority chemicals of concern

CAL-EPA Proposition 65 – Known to cause cancer or reproductive toxicity.

State of California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHHA)

(http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html)

ECHA REACH SVHC - Reason for inclusion: Carcinogenic, Toxic for Reproduction, Mutagenic, Endocrine activity or PBT European Union - European Chemicals Agency

(http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp)

European Commission Directive 76/769 Carcinogen, mutagens, and reproductive Toxins (CMRs):

Chemicals of Concern – Option 1: Check out every list one at time



Annex A

Informational Sources¹⁴

The following resources are all considered authoritative sources of environmental and human health hazard data.

A.2 Secondary chemicals of concern

Association of Occupational and Environmental Clinics (AOEC)
Exposure Code List [30].

a) AOEC Asthmagens – Sensitizer induced asthmagens (Rs or Rrs)

<http://www.aoec.org/tools.htm>

European Union - European Chemicals Agency

a) ECHA REACH SVHC - Reason for inclusion:vPvB

http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp

US Environmental Protection Agency, Ozone Layer Depletion Program

a) US EPA Ozone Depleting Substances- Class I and Class II

<http://www.epa.gov/spdpublic/science/ods/index.html>

Chemicals of Concern- Option 2: Subscribe to a list-screening service



- **Pharos**
 - **SciVera**
 - **The Wercs**
 - **...and others**
- **Which list?**
 - **Which concern?**
 - **Priority, secondary or both?**

Chemicals of Concern- Option 2: Subscribe to a list-screening service

[Building Products](#)[Chemicals and Materials](#)[Locations](#)[Dashboard](#)[Logout](#)[Dashboard](#) / [Chemicals and Materials](#)

Chemicals and Materials

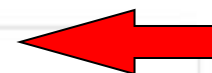
Showing 1 - 10 of 10 results

CAS RN	Material Name	Hazard	GreenScreen
64-17-5	Alcohol	●	LT-1
64-17-5 (variant)	Specially denatured ethyl alcohol S.D.A.G. no 1-b (95% vol.) (aos)	●	LT-1
64-17-5 (variant)	Specially denatured ethyl alcohol S.D.A.G. no 1-c (95% vol.)	●	LT-1
64-17-5 (variant)	Specially denatured ethyl alcohol S.D.A.G. no 1-f (95% vol.)	●	LT-1
64-17-5 (variant)	Specially denatured ethyl alcohol S.D.A.G. no 1-p (95% vol.)	●	LT-1
64-17-5 (variant)	Specially denatured ethyl alcohol S.D.A.G. no 1-p (anhydrous)	●	LT-1
64-17-5 (variant)	Specially denatured ethyl alcohol S.D.A.G. no 1-s (95% vol.)	●	LT-1
64-17-5 (variant)	Specially denatured ethyl alcohol S.D.A.G. no 1-xs (95,5 vol.) - spirex s	●	LT-1
64-17-5 (variant)	Specially denatured ethyl alcohol S.D.A.G. no 1-xs (95% vol.)	●	LT-1
64-17-5 (variant)	Specially denatured ethyl alcohol S.D.A.G. no 1-xs (anhydrous) - spirex s	●	LT-1



Search term

64-17-5



Type

Any type

Used in Product Category

Any category

☐ Has a full GreenScreen assessment

Restricted lists include [Add](#)

Restricted lists do not include

[Add](#)

☒ Include residuals in selected filters above

[Filter results](#)



Chemicals of Concern



Building Products

Chemicals and Materials

Hazards

Co

Dashboard / Chemicals and Materials / Alcohol

[64-17-5] Alcohol

General Information

Hazards

Life Cycle Research

GreenScreen

Variants

Direct Hazards:

CANCER



Intl Agency for Rsrch on Cancer - Cancer Monographs - Group 1: Agent is carcinogenic to humans

+1



German MAK - List of Substances - Carcinogen Group 5 - Genotoxic carcinogen with very slight risk under MAK/BAT levels

REPRODUCTIVE



Japan METI/MOE - GHS Classifications - Toxic to reproduction - Category 1A

DEVELOPMENTAL



German MAK - List of Substances - Pregnancy Risk Group C

MAMMALIAN



Japan METI/MOE - GHS Classifications - Specific target organs/systemic toxicity following repeated exposure - Category 1

+2

Chemicals of Concern



Pharos Search Terms	Concern Flagged on Annex A	Priority or Secondary COC
Cal/EPA	- Chemicals Known to Cause Cancer & Reproductive Toxicity	Priority
SVHC	- Carcinogenic - Toxic to Reproduction - Mutagenic - Endocrine activity	Priority
SVHC	- vPvB	Secondary
Priority Endocrine Disruptors	- Category 1 endocrine disruptor - Category 2 endocrine disruptor	Priority
Intl Agency for Rsrch on Cancer	- Group 1 or Group 2A	Priority
Priority PBT		Priority
US NIH - Reproductive & Developmental	- Clear Evidence of adverse developmental toxicant effect - Clear Evidence of adverse reproductive toxicant effect	Priority

Chemicals of Concern

[Building Products](#)[Chemicals and Materials](#)[Manufacturing Applications](#)[Dashboard](#)[Logout](#)[Dashboard](#) / [Chemicals and Materials](#)

Chemicals and Materials

Showing 1 - 2 of 2 results

CAS RN	Material Name	Hazard	GreenScreen
67-56-1	METHANOL		LT-1
867-56-1	sodium (S)-lactate		LT-UNK

Search term

Type

Used in Product Category

☐ Has a full GreenScreen assessment

Restricted lists include [Add](#)

Restricted lists do not include

















Chemicals of Concern



Pharos Building Products Chemicals and Materials Hazards Ce

General Information **Hazards** Research GreenScreen

Direct Hazards:

DEVELOPMENTAL TOXICANT	 	US NIH - Reproductive & Developmental Monographs - A-Clear evidence of adverse developmental toxicant effects	+2
	 	Cal/EPA - Chemicals Known to Cause Cancer & Reproductive Toxicity - Developmental toxicity	
	 	German MAK - List of Substances - Pregnancy Risk Group C	
MAMMALIAN	 	EC - CLP/GHS Hazard Statements - H311 Toxic in contact with skin	+14
ORGAN TOXICANT	 	EC - Risk Phrases - R39: Danger of very serious irreversible effects.	+2
FLAMMABLE	 	EC - CLP/GHS Hazard Statements - H225 Highly flammable liquid and vapour. 🔑	+4
NEUROTOXICITY	 	Lancet - Grandjean & Landrigan Neurotoxic Chemicals - Known to be neurotoxic in man	
EYE IRRITATION	 	New Zealand HSNO/GHS - 6.4A - Irritating to the eye	+1
TERRESTRIAL		New Zealand HSNO/GHS - 9.3C - Harmful to terrestrial vertebrates	

Chemicals of Concern

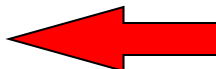


Pharos Search Terms	Concern Flagged on Annex A	Priority or Secondary COC
Cal/EPA	- Chemicals Known to Cause Cancer & Reproductive Toxicity	Priority
SVHC	- Carcinogenic - Toxic to Reproduction - Mutagenic - Endocrine activity	Priority
SVHC	- vPvB	Secondary
Priority Endocrine Disruptors	- Category 1 endocrine disruptor - Category 2 endocrine disruptor	Priority
Intl Agency for Rsrch on Cancer	- Group 1 or Group 2A	Priority
Priority PBT		Priority
US NIH - Reproductive & Developmental	- Clear Evidence of adverse developmental toxicant effect	Priority
	- Clear Evidence of adverse reproductive toxicant effect	

Chemicals of Concern



Potential Residual Hazards:



See Life Cycle Research tab for details on residuals and other substances used in manufacture.

GENE MUTATION



New Zealand HSNO/GHS - 6.6A - Known or presumed human mutagens *

DEVELOPMENTAL



German MAK - List of Substances - Pregnancy Risk Group C *

RESPIRATORY



AOEC - Asthmagens - Asthmagen (ARs) - sensitizer-induced - inhalable forms only
* 🔧

MAMMALIAN



New Zealand HSNO/GHS - 6.1B (inhalation) - Acutely toxic *

+ 6

ACUTE AQUATIC



EC - CLP/GHS Hazard Statements - H400 - Aquatic Acute 1 - Very toxic to aquatic
life * 🔧

+ 6

CHRON AQUATIC



EC - CLP/GHS Hazard Statements - H410 - Aquatic Chronic 1 - Very toxic to aquatic
life with long lasting effects * 🔧

+ 3

TERRESTRIAL



New Zealand HSNO/GHS - 9.3A - Very ecotoxic to terrestrial vertebrates *

+ 2

EYE IRRITATION



New Zealand HSNO/GHS - 6.4A - Irritating to the eye *

SKIN SENSITIZE



New Zealand HSNO/GHS - 6.5B (contact) - Contact sensitisers *

Complete your form



List Annex A <u>Priority</u> Chemicals of Concern as disclosed on MSDS or by Supplier. List each Priority COC with the following information: Chemical name, CAS#, and Concern Designation.	List Annex A <u>Secondary</u> Chemicals of Concern as disclosed on MSDS or by Supplier. List each secondary COC with the following information: Chemical name, CAS# and Concern Designation
Ethanol (64-17-5) IARC Group1 Agent is Carcinogenic to Humans + Methanol (67-56-1) US NIH A-Clear evidence of adverse developmental toxicant effects, Prop 65 Developmental toxicity	

The Certification Experience



Brenda Edwards, Owner TexaStone

TexaStone Quarries



TexaStone Quarry - Recycling



TexaStone Processing



Questions?



Copies of ANSI/NSC 373 can be purchased at
<http://naturalstonecouncil.org/shop/>

Need more information? **Contact Jamie Bush at 734-827-5668 or** sustainability@nsf.org

