



On Call On Time On Target.

THE GATEWAY ENGINEERS, INC.

400 HOLIDAY DRIVE, SUITE 300
PITTSBURGH, PA 15220-2727
412.921.4030 PHONE
412.921.9960 FAX

www.gatewayengineers.com

July 2, 2014
C-97027-0013

Municipality of Mt. Lebanon
710 Washington Road
Pittsburgh, PA 15228

ATT: Stephen M. Feller, Municipal Manager

RE: Mt. Lebanon Wildcat Field Turf Project
MSDS and Metals Testing Request

Dear Steve:

Per the request of the Commission, The Gateway Engineers, Inc. has requested additional information from the potential low bidder, Vasco Sports Contractors and their supplier of Turf, Shaw Sports Turf including testing of metals in the artificial turf and the MSDS Sheets. We are in receipt of data provided and are forwarding it as an attachment to this letter for your use, evaluation, and review. As you are aware, Gateway provided design services for the construction document preparation of the artificial turf field per industry standard. Neither Gateway nor its design team has a toxicologist on staff to fully evaluate the intricacies of the data presented. Therefore, we do not believe that we can provide an informed opinion or recommendation regarding the metal testing or MSDS sheets.

However, we can report that the attached letter from Shaw Industries along with the testing reports indicates that the turf product including fibers, backing and crumb rubber infill will comply with the standards set forth in the project specifications and EPA standards. As I understand the potential award for the project, it will include the installation of the Alternate 6 (storm filtration system) which will address the potential for addressing zinc, which was the only item noted by Shaw.

Finally, Gateway and J.T. Sauer & Associates, LLC has reviewed the information provided by Vasco Sports Contractors. Vasco meets the requirements for experience and bidder qualifications for 5 fields built in the past 5 years, laser grading equipment, and experienced foreman. Shaw is proposed as the turf provider for Vasco. They have submitted a notarized affidavit reviewed by the solicitor stating its product and listed infill meets the industry ASTM standards including ASTM D2750 and EPA standards for public use\



July 2, 2014
C-97027-0003
Page 2 of 2

If there is any additional information that you should require, please let me know

Sincerely,
THE GATEWAY ENGINEERS, INC.

Daniel S. Deiseroth, P.E.
Municipal Engineer

Attachments

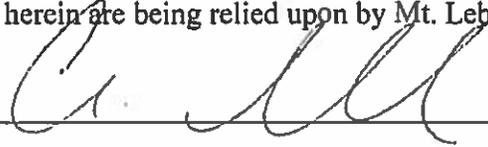
cc: Stephen Feller, Municipal Manager
David Donnellan, Director of Recreation
JT Sauer, Sauer & Associates

G:\Projects\97000 Mt Lebanon\97027 Wildcat field\0013 Turf Construction Drawings\Docs\Engineering\Material Specs and Composition\2014-07-02transmit material spec to Commissioners doc

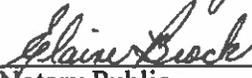
AFFIDAVIT

The undersigned, being authorized to do so, personally appeared before the undersigned Notary Public and being duly sworn according to law, do solemnly swear and affirm as follows:

1. I am an employee of Shaw Sports Turf ("Shaw") and am authorized to execute this affidavit on behalf of Shaw in connection with the bids for artificial turf (the "Project") that have been submitted to Mt. Lebanon, PA ("Mt. Lebanon").
2. The synthetic turf material in the Project meets all artificial turf industry safety standards including the requirements of ASTM F2765 for total lead content in synthetic turf fibers and meets current EPA health and safety regulations for public use.
3. The rubber infill has been tested per ASTM standard F2765 for metal content of the rubber infill, and the rubber used meets the EPA acceptable guidelines for public uses.
4. At the time of installation, Shaw will provide an additional affidavit that the rubber infill that is actually used in the Project is specifically identified and meets all artificial turf industry safety standards and has been tested per ASTM standard D4004 for metal content of the rubber infill and that the rubber used meets the EPA acceptable guidelines for public uses.
5. I understand that the statements contained herein are being relied upon by Mt. Lebanon in awarding a contract.



Sworn to and subscribed before me,
this 1st day of July, 2014.



Notary Public

My commission expires: 6.6.17





July 2, 2014

Municipality of Mt. Lebanon
710 Washington Road
Pittsburgh, PA, 15228

Att: Mr. Stephen Feller, Municipal Manager

Re: Additional Information Requested

Dear Mr. Feller,

In response to your request, I am attaching a document that contains testing for a specific Shaw Sports Turf system (Momentum 46) completed in 2013. The product is similar to what is being recommended for your current project. The testing was for Total Metals Content and SPLC Metals (see attached regulatory limits). These tests were conducted at the request of a potential customer in California to satisfy the synthetic turf was not harmful to the environment.

The results of these tests concluded that the turf fibers, primary backing and infill exceed EPA and California Title 22 Standards with the exception of zinc. The test results also indicate that our materials will be in compliance with the specifications outlined by Mt. Lebanon as it relates to lead. As you are aware, we recently provided an affidavit that similar testing will be completed by an independent 3rd party for your project as required by the specifications.

In the past, the main concern for synthetic turf has been the use of lead chromate pigments to produce the green color for the grass yarns. These pigments are no longer used in synthetic turf fibers, but they would show up in the lead and chromium levels in the fiber. Since there is naturally occurring lead in the environment, these values in the Total Metals Content will never be zero. The total lead and chromium contents in the Shaw Sports Turf products are well below the TLC regulatory limit and the lead content is below the 100 ppm limit set for synthetic turf fibers in ASTM F2765 and the 50 ppm limit set in the Mt. Lebanon Specifications.

The other metal that has been scrutinized in areas near sensitive aquatic zones is zinc. Although zinc is not a human health hazard, certain aquatic species are sensitive to zinc levels. The SBR crumb rubber

Page 2 of 2
July 2, 2014

contains a zinc based UV stabilizers that yield elevated levels of zinc in SBR crumb, especially in freshly cut crumb rubber. These higher levels of zinc, although higher than the California limits, were not noted as a level of concern in the 2009 EPA report "A Scoping Level-Field Monitoring Study of Synthetic Turf Sports Fields and Playgrounds."

Sincerely,

A handwritten signature in black ink that reads "Phil M Stricklen". The signature is written in a cursive, slightly slanted style.

Phil M. Stricklen, Ph.D.
Director of Research and Development
Shaw Sports Turf

Cc: The Gateway Engineers, Inc.

STLC/TTLC Regulatory Limits

Soluble Threshold Limit Concentration (STLC) and Total Threshold Limit Concentration (TTLC)
 Regulatory Limits*

Inorganic Substances	STLC** Level (mg/L)	TTLC*** Level (mg/Kg - wet weight)
Antimony (and/or Sb compounds)	15	500
Arsenic (and/or As compounds)	5	50
Barium (and/or Ba compounds)	100	10000****
Beryllium (and/or Be compounds)	0.75	75
Cadmium (and/or Cd compounds)	1	100
Chromium VI compounds	5	500
Chromium (and/or Cr III compounds)	5*****	2500
Cobalt (and/or Co compounds)	80	8000
Copper (and/or Cu compounds)	25	2500
Lead (and/or Pb compounds)	5	1000
Mercury (and/or Hg compounds)	0.2	20
Molybdenum (and/or Mo compounds)	350	3500
Nickel (and/or Ni compounds)	20.0	2000
Selenium (and/or Se compounds)	1	100
Silver (and/or Ag compounds)	5	500
Thallium (and/or Tl compounds)	7.0	700
Vanadium (and/or V compounds)	24	2400
Zinc (and/or Zn compounds)	250	5000

* Used for California regulated hazardous waste. Source is California Code of Regulations, Title 22, Chapter 11, Article 3.

Total Metal Content of Turf Components



California Title 22 Metals			
Lab #:	249293	Location:	SF Parks & Rec Turf & Infill
Client:	Shaw Sports Turf	Prep:	EPA 3052
Project#:	STANDARD		
Field ID:	MOMENTIUM 46 FIBER (GREEN)	Diln Fac:	1.000
Lab ID:	249293-001	Sampled:	09/20/13
Matrix:	Miscell.	Received:	09/23/13
Units:	mg/Rg	Analyzed:	10/08/13
Basis:	as received		

Analyte	Result	RL	Batch#	Prepared	Analysis
Antimony	ND	1.1	203806	10/07/13	EPA 6010B
Arsenic	1.1	0.54	203806	10/07/13	EPA 6010B
Barium	1.5	0.54	203806	10/07/13	EPA 6010B
Beryllium	ND	0.22	203806	10/07/13	EPA 6010B
Cadmium	ND	0.54	203806	10/07/13	EPA 6010B
Chromium	5.9	0.54	203806	10/07/13	EPA 6010B
Cobalt	1.0	0.54	203806	10/07/13	EPA 6010B
Copper	65	0.56	203806	10/07/13	EPA 6010B
Lead	ND	0.54	203805	10/07/13	EPA 6010B
Mercury	ND	0.22	203811	10/08/13	EPA 7471A
Molybdenum	2.1	0.54	203806	10/07/13	EPA 6010B
Nickel	9.9	0.54	203806	10/07/13	EPA 6010B
Selenium	1.3	1.1	203806	10/07/13	EPA 6010B
Silver	ND	0.54	203806	10/07/13	EPA 6010B
Thallium	ND	1.1	203806	10/07/13	EPA 6010B
Vanadium	0.87	0.54	203806	10/07/13	EPA 6010B
Zinc	47	2.2	203806	10/07/13	EPA 6010B

MT. LEBO SPEC.
FIBER 8 PPM MAX LEAD

ND= Not Detected
RL= Reporting Limit
Page 1 of 1



California Title 22 Metals			
Lab #:	249293	Location:	SF Parks & Rec Turf & Infill
Client:	Shaw Sports Turf	Prep:	EPA 3052
Project#:	STANDARD		
Field ID:	MOMENTUM 46 PRIMARY BACKING	Diln Fac:	1.000
Lab ID:	249293-003	Sampled:	05/20/13
Matrix:	Miscell.	Received:	09/23/13
Units:	mg/Kg	Analyzed:	10/08/13
Basis:	as received		

Analyte	Result	RL	Batch#	Prepared	Analysis
Antimony	ND	1.1	203806	10/07/13	EPA 6010B
Arsenic	ND	0.54	203806	10/07/13	EPA 6010B
Barium	1.3	0.54	203806	10/07/13	EPA 6010B
Beryllium	ND	0.22	203806	10/07/13	EPA 6010B
Cadmium	ND	0.54	203806	10/07/13	EPA 6010B
Chromium	ND	0.54	203806	10/07/13	EPA 6010B
Cobalt	ND	0.54	203806	10/07/13	EPA 6010B
Copper	ND	0.56	203806	10/07/13	EPA 6010B
Lead	ND	0.54	203806	10/07/13	EPA 6010B
Mercury	ND	0.22	203811	10/08/13	EPA 7471A
Molybdenum	0.65	0.54	203806	10/07/13	EPA 6010B
Nickel	0.64	0.54	203806	10/07/13	EPA 6010B
Selenium	ND	1.1	203806	10/07/13	EPA 6010B
Silver	ND	0.54	203806	10/07/13	EPA 6010B
Thallium	ND	1.1	203806	10/07/13	EPA 6010B
Vanadium	ND	0.54	203806	10/07/13	EPA 6010B
Zinc	11	2.2	203806	10/07/13	EPA 6010B

ND= Not Detected
 RL= Reporting Limit
 Page 1 of 1



California Title 22 Metals			
Lab #:	249293	Location:	SF Parks & Rec Turf & Infill
Client:	Shaw Sports Turf	Prep:	EPA 3052
Project#:	STANDARD		
Field ID:	INFILL SBR	Basis:	as received
Lab ID:	249293-004	Sampled:	09/20/13
Matrix:	Miscell.	Received:	09/23/13
Units:	mg/Kg	Analyzed:	10/08/13

Analyte	Result	RL	Diln	Fac	Batch#	Prepared	Analysis
Antimony	4.5	0.90	1.000		203806	10/07/13	EPA 6010B
Arsenic	ND	0.45	1.000		203806	10/07/13	EPA 6010B
Barium	3.1	0.45	1.000		203806	10/07/13	EPA 6010B
Beryllium	ND	0.18	1.000		203806	10/07/13	EPA 6010B
Cadmium	ND	0.45	1.000		203806	10/07/13	EPA 6010B
Chromium	1.2	0.45	1.000		203806	10/07/13	EPA 6010B
Cobalt	180	0.45	1.000		203806	10/07/13	EPA 6010B
Copper	66	0.47	1.000		203806	10/07/13	EPA 6010B
Lead	13	0.45	1.000		203806	10/07/13	EPA 6010B
Mercury	ND	0.18	1.000		203811	10/08/13	EPA 7471A
Molybdenum	0.67	0.45	1.000		203806	10/07/13	EPA 6010B
Nickel	2.5	0.45	1.000		203806	10/07/13	EPA 6010B
Selenium	ND	0.90	1.000		203806	10/07/13	EPA 6010B
Silver	ND	0.45	1.000		203806	10/07/13	EPA 6010B
Thallium	ND	0.90	1.000		203806	10/07/13	EPA 6010B
Vanadium	1.5	0.45	1.000		203806	10/07/13	EPA 6010B
Zinc	16,000	180	100.0		203806	10/07/13	EPA 6010B

MT. LEBO SPECIFICATION
50PPM MAX LEAD

ND= Not Detected
RL= Reporting Limit
Page 1 of 1



California Title 22 Metals			
Lab #:	249293	Project#:	STANBARD
Client:	Shaw Sports Turf	Location:	SF Parks & Rec Turf & Infill
Field ID:	MOMENTUM 46 FIBER (GREEN)	Units:	ug/L
Lab ID:	249253-001	Sampled:	09/20/13
Matrix:	SPLP Leachate	Received:	09/23/13

Analyte	Result	RL	Diln	Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	1.0	5.000	203422	09/26/13	10/01/13	EPA 200.8	EPA 6020	
Arsenic	ND	1.2	5.000	203422	09/26/13	09/28/13	EPA 200.8	EPA 6020	
Barium	ND	1.0	5.000	203422	09/26/13	10/01/13	EPA 200.8	EPA 6020	
Beryllium	ND	4.3	5.000	203422	09/26/13	09/28/13	EPA 200.8	EPA 6020	
Cadmium	ND	1.3	5.000	203422	09/26/13	10/01/13	EPA 200.8	EPA 6020	
Chromium	ND	1.0	5.000	203422	09/26/13	09/28/13	EPA 200.8	EPA 6020	
Cobalt	ND	1.0	5.000	203422	09/26/13	09/28/13	EPA 200.8	EPA 6020	
Copper	76	1.0	5.000	203422	09/26/13	09/28/13	EPA 200.8	EPA 6020	
Lead	ND	1.0	5.000	203422	09/26/13	10/01/13	EPA 200.8	EPA 6020	
Mercury	ND	0.20	1.000	203823	10/08/13	10/08/13	METHOD	EPA 7470A	
Molybdenum	ND	3.2	5.000	203422	09/26/13	09/28/13	EPA 200.8	EPA 6020	
Nickel	ND	3.0	5.000	203422	09/26/13	09/28/13	EPA 200.8	EPA 6020	
Selenium	ND	1.0	5.000	203422	09/26/13	09/28/13	EPA 200.8	EPA 6020	
Silver	ND	1.0	5.000	203422	09/26/13	10/01/13	EPA 200.8	EPA 6020	
Thallium	ND	1.0	5.000	203422	09/26/13	09/28/13	EPA 200.8	EPA 6020	
Vanadium	ND	1.1	5.000	203422	09/26/13	09/28/13	EPA 200.8	EPA 6020	
Zinc	ND	16	5.000	203422	09/26/13	09/28/13	EPA 200.8	EPA 6020	

MT. LEBANON
 SPECIFICATION
 MAX LEAD 8PPM

ND= Not Detected
 RL= Reporting Limit
 Page 1 of 1

Soluble Metal Content of Turf Components



California Title 22 Metals			
Lab #:	249293	Project#:	STANDARD
Client:	Shaw Sports Turf	Location:	SF Parks & Rec Turf & Infill
Field ID:	MOMENTUM 46 PRIMARY BACKING	Units:	ug/L
Lab ID:	249293-003	Sampled:	09/20/13
Matrix:	SPLP Leachate	Received:	09/23/13

Analyte	Result	RL	Diln	Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	1.0	5.000		203422	09/26/13	10/01/13	EPA 200.8	EPA 6020
Arsenic	ND	1.2	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Barium	2.2	1.0	5.000		203422	09/26/13	10/01/13	EPA 200.8	EPA 6020
Beryllium	ND	4.3	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Cadmium	ND	1.3	5.000		203422	09/26/13	10/01/13	EPA 200.8	EPA 6020
Chromium	ND	1.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Cobalt	ND	1.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Copper	ND	1.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Lead	ND	1.0	5.000		203422	09/26/13	10/01/13	EPA 200.8	EPA 6020
Mercury	ND	0.20	1.000		203823	10/08/13	10/08/13	METHOD	EPA 7470A
Molybdenum	ND	3.2	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Nickel	ND	3.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Selenium	ND	1.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Silver	ND	1.0	5.000		203422	09/26/13	10/01/13	EPA 200.8	EPA 6020
Thallium	ND	1.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Vanadium	ND	1.1	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Zinc	ND	16	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020

ND= Not Detected
 RL= Reporting Limit
 Page 1 of 1



California Title 22 Metals

Lab #:	249253	Project#:	STANDARD
Client:	Shaw Sports Turf	Location:	SF Parks & Rec Turf & Infill
Field ID:	INFILL SBR	Units:	ug/L
Lab ID:	249253-004	Sampled:	09/20/13
Matrix:	SPLF Leachate	Received:	09/23/13

Analyte	Result	RL	Diln	Pac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	1.0	5.000		203422	09/26/13	10/01/13	EPA 200.8	EPA 6020
Arsenic	ND	1.2	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Barium	3.8	1.0	5.000		203422	09/26/13	10/01/13	EPA 200.8	EPA 6020
Beryllium	ND	4.3	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Cadmium	ND	1.3	5.000		203422	09/26/13	10/01/13	EPA 200.8	EPA 6020
Chromium	ND	1.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Cobalt	1.3	1.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Copper	ND	1.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Lead	ND	1.0	5.000		203422	09/26/13	10/01/13	EPA 200.8	EPA 6020
Mercury	ND	0.20	1.000		203823	10/08/13	10/08/13	METHOD	EPA 7470A
Molybdenum	ND	3.2	5.000		203422	09/26/13	09/29/13	EPA 200.8	EPA 6020
Nickel	ND	3.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Selenium	ND	1.0	5.000		203422	09/26/13	09/29/13	EPA 200.8	EPA 6020
Silver	ND	1.0	5.000		203422	09/26/13	10/01/13	EPA 200.8	EPA 6020
Thallium	ND	1.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Vanadium	ND	1.1	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Zinc	410	16	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020

**MT. LEBANON SPECIFICATION
50 PPM LEAD**

ND= Not Detected
RL= Reporting Limit
Page 1 of 1



California Title 22 Metals

Lab #:	249293	Project#:	STANDARD
Client:	Shaw Sports Turf	Location:	SF Parks & Rec Turf & Infill
Field ID:	INFILL SAND	Units:	ug/L
Lab ID:	249293-005	Sampled:	09/20/13
Matrix:	SPLP Leachate	Received:	09/23/13

Analyte	Result	RL	Diln	Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	1.0	5.000		203422	09/26/13	10/01/13	EPA 200.8	EPA 6020
Arsenic	ND	1.2	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Barium	ND	1.0	5.000		203422	09/26/13	10/04/13	EPA 200.8	EPA 6020
Beryllium	ND	4.3	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Cadmium	ND	1.3	5.000		203422	09/26/13	10/01/13	EPA 200.8	EPA 6020
Chromium	ND	1.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Cobalt	ND	1.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Copper	ND	1.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Lead	ND	1.0	5.000		203422	09/26/13	10/01/13	EPA 200.8	EPA 6020
Mercury	ND	0.20	1.000		203823	10/09/13	10/08/13	METHOD	EPA 7470A
Molybdenum	ND	3.2	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Nickel	ND	3.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Selenium	ND	1.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Silver	ND	1.0	5.000		203422	09/26/13	10/01/13	EPA 200.8	EPA 6020
Thallium	ND	1.0	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Vanadium	ND	1.1	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020
Zinc	66	16	5.000		203422	09/26/13	09/28/13	EPA 200.8	EPA 6020

ND= Not Detected
 RL= Reporting Limit
 Page 1 of 1



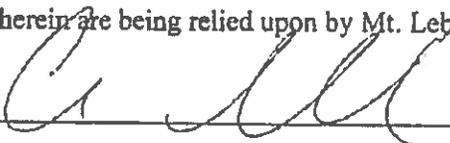
Chemical Composition of Shaw Sports Turf Legion SpikeZone

- 1. Turf Fiber = Polyethylene**
- 2. Primary Backing = Polypropylene**
- 3. Secondary Backing = Polyurethane polymer + Calcium Carbonate + Hydrated Alumina**
- 4. Resilient Infill = Recycled SBR Tire Rubber**
- 5. Non-resilient Infill = Silica Sand**

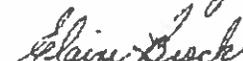
AFFIDAVIT

The undersigned, being authorized to do so, personally appeared before the undersigned Notary Public and being duly sworn according to law, do solemnly swear and affirm as follows:

1. I am an employee of Shaw Sports Turf ("Shaw") and am authorized to execute this affidavit on behalf of Shaw in connection with the bids for artificial turf (the "Project") that have been submitted to Mt. Lebanon, PA ("Mt. Lebanon").
2. The synthetic turf material in the Project meets all artificial turf industry safety standards including the requirements of ASTM F2765 for total lead content in synthetic turf fibers and meets current EPA health and safety regulations for public use.
3. The rubber infill has been tested per ASTM standard F2765 for metal content of the rubber infill, and the rubber used meets the EPA acceptable guidelines for public uses.
4. At the time of installation, Shaw will provide an additional affidavit that the rubber infill that is actually used in the Project is specifically identified and meets all artificial turf industry safety standards and has been tested per ASTM standard D4004 for metal content of the rubber infill and that the rubber used meets the EPA acceptable guidelines for public uses.
5. I understand that the statements contained herein are being relied upon by Mt. Lebanon in awarding a contract.

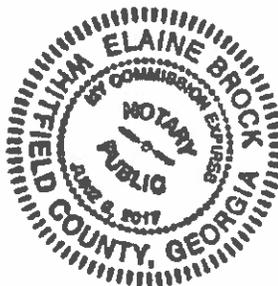


Sworn to and subscribed before me,
this 1st day of July, 2014.



Notary Public

My commission expires: 6-6-17



Shaw Sports Specifications

Bidders Include:

Frontier Construction Company, Inc.

Palombo Landscaping

Vasco Sports Contractors

MATERIAL SAFETY DATA SHEET

1

HELMICOL 3407 B

DATE: July 23, 2008

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: HELMITIN INC.

**US: 11110 AIRPORT ROAD
OLIVE BRANCH, MS 38654
662-895-4565**

**CANADA: 99 SHORNCLIFFE ROAD
TORONTO, ONTARIO M8Z 5K7
416-239-3105**

**EMERGENCY PHONE:
800-424-9300 (CHEMTREC)**

613-996-6666 (CANUTEC)

TRADE NAME AND SYNONYMS: Helmicol 3407 B

CHEMICAL NAME AND SYNONYMS: Polyisocyanate Hardener

CHEMICAL FAMILY: Polyisocyanate

MODECULAR FORMULA: Blend

PRODUCT DESCRIPTION: POLYISOCYANATE HARDENER

2. COMPOSITION/INFORMATION ON INGREDIENTS

MATERIAL	CAS #	% BY WT.	OSHA EXPOSURE GUIDELINES	
			TLV-TWA	PEL-STEL
MDI (Diphenyl Methane Diisocyanate)	26447-40-5	30-50	.005 ppm	.02 ppm
Polymethylene Polyphenyl Diisocyanate	9016-87-9	30-50	.005 ppm	.02 ppm

3. HAZARDOUS IDENTIFICATIONS

EMERGENCY OVERVIEW: Causes eye irritation. Can cause severe respiratory irritation. Can cause severe central nervous system depression. This material reacts with water. Closed containers will build-up pressure if contaminated with water.

POTENTIAL HEALTH EFFECTS:

EYE: May cause severe irritation. May damage eyes.

SKIN: Prolonged exposure may cause skin irritation. May cause drying or flaking of skin. Skin absorption of material may cause systemic toxicity. Molten material poses a burn hazard.

INGESTION: Ingestion may cause severe injury to intestinal tract, liver, kidneys, stomach, throat, lungs, mouth and mucous membranes. Harmful or fatal if swallowed. Do not ingest.

INHALATION: Overexposure may cause severe respiratory tract irritation. Prolonged overexposure may cause central nervous system depression with narcotic effects (headaches, dizziness, unconsciousness). Keep exposure below OSHA exposure limits.

CONTINUED ON NEXT PAGE

CHRONIC EFFECTS / CARCINOGENICITY (CANCER CAUSING):

IARC : Not suspected as a human carcinogen

OSHA : Not suspected as a human carcinogen

NTP : Not suspected as a human carcinogen

OTHER : None known

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.**SKIN:** Wash with soap and water. Get medical attention if irritation develops or persists. Immediately remove contaminated clothing.**INGESTION:** If swallowed, seek medical attention immediately. Do not induce vomiting. This material is an aspiration hazard. Can enter lungs and cause damage.**INHALATION:** Remove to fresh air. Restore breathing if necessary. Get medical attention. This material can cause lung damage.

DO NOT LEAVE VICTIM UNATTENDED.

5. FIRE FIGHTING MEASURES AND FIRE HAZARDS

OSHA CLASS: III BFLASH POINT: >200° TAG CLOSED CUPLOWER EXPLOSIVE LIMIT: Not Applicable %**GENERAL HAZARD:** May release flammable mixtures when temperatures are at or above the flash point. Toxic gases will form upon combustion. Closed containers may explode when exposed to extreme heat. Vapors are heavier than air and may travel a considerable distance.**FIRE FIGHTING EQUIPMENT:** Respiratory and eye protection required for fire fighting personnel. Full protective equipment and a self-contained breathing apparatus (SCBA) should be used in all indoor fires and any large outdoor fires.**HAZARDOUS COMBUSTION PRODUCTS:** Carbon monoxide, carbon dioxide, smoke and fumes, hydrocarbon fragments, hydrogen cyanide, isocyanates, nitrogen oxides.

6. ACCIDENTAL RELEASE MEASURES (SPILLS OR LEAKS)

Keep all sources of ignition and hot metal surfaces away from spill. Isolate the danger area and keep unauthorized personnel out. Stop spill if it can be done with minimal risk. Wear appropriate protective equipment including respirator protection as conditions warrant (see section 8). Prevent additional discharge of material. Notify the appropriate authorities immediately. Contain spilled liquid with sand, earth or other non-combustible inert absorbent material. Prevent run off from entering storm sewers, ditches or waterways. Use non spark tools to transfer absorbed waste material into properly identified drums. Treat waste material with same precautions as the hardener.

Do not use solvent or flammable liquid to help clean-up an accidental release.

Release to the environment may be reportable under environmental regulations

CONTINUED ON NEXT PAGE

7. HANDLING AND STORAGE

HANDLING: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel or container to another. This material can accumulate static charge by flow or agitation. Use spark proof tools and explosion proof equipment as directed by local fire codes. Do not enter confined spaces such as tanks without following proper entry procedures as described in OSHA regulations at 29 CFR 1910.146. Do not breathe vapors. The use of respiratory protection is recommended when airborne concentrations of vapor exceed exposure guidelines. Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Wear appropriate protective gloves and clothing to prevent prolonged or repeated skin contact. Avoid contact with eyes.

Wash with soap and water before eating, drinking, smoking or using toilet facilities.

"EMPTY" containers may contain liquid and vapor residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "EMPTY" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in accordance with governmental regulations.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, smoke and fumes, hydrocarbon fragments, hydrogen cyanide, nitrogen oxides, isocyanates.

HAZARDOUS POLYMERIZATION: Will not occur.

STORAGE: Keep containers tightly closed. Use and store this material in cool, dry, well-ventilated area away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "no smoking or open flames." Store only in approved containers. Protect containers against physical damage. Indoor storage should meet OSHA standards and appropriate fire codes.

Consult NFPA and OSHA codes as applicable.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

RESPIRATORY PROTECTION: A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure guidelines. Protection provided by air purifying respirators is limited. Refer to respirator manufacturer's selection guide for appropriate respirator for conditions encountered. If in doubt, seek the advice of an industrial hygienist or safety professional for appropriate air purifying respiratory equipment. Use positive pressure air supplied respirator if there is potential for an uncontrolled release, exposure levels are not known, or in any other circumstances where air purifying respirators may not provide adequate protection. Respiratory protection does not provide safety from flammable atmospheres. Do not enter concentrations of vapors at, near or above the Lower Flammable Limit (LFL). When respiratory protection is used, a respiratory protection program meeting OSHA regulations at 29 CFR 1910.134 must be followed.

SKIN PROTECTION: The use of gloves impermeable to the specific material handled is advised to prevent prolonged or repeated skin contact. Where splashing is likely to occur, aprons impermeable to the specific material may be worn. Refer to the glove and protective clothing manufacturer's selection guide for appropriate material.

CONTINUED ON NEXT PAGE

11. TOXICOLOGICAL INFORMATION

SKIN: DERMAL LD50 = Not Available mg/kg

INGESTION: ORAL LD50 = Not Available mg/kg

CHRONIC: Liver and kidney damage. May cause corneal opacity. Overexposure may cause central nervous system depression causing headaches, nausea, dizziness and, in extreme cases, convulsions and coma.

May cause birth defects.

CHRONIC/CARCINOGENICITY (CANCER CAUSING):

This product contains the following chemicals known to the state of California (Proposition 65) to cause cancer or reproductive toxicity:

None Known

OTHER: None known

12. ECOLOGICAL INFORMATION

No data available
\\

13. DISPOSAL CONSIDERATIONS

Incinerate at an EPA approved facility or dispose of in accordance to all federal, state and local regulations.

Helmicol 3407 B is a hazardous waste if discarded. (CFR., vol. 40, part 261, PGS. 51-114).

See section 2, page 1 of this MSDS for hazardous ingredients.

PROPER WASTE DISPOSAL IS THE RESPONSIBILITY OF THE OWNER OF THE WASTE!

Call Helmitin Inc. for further information.

14. TRANSPORTATION INFORMATION

DOT: T.D.G.

PROPER SHIPPING NAME: Not Regulated

HAZARD CLASSIFICATION: _____

UN#: _____

PACKING GROUP: _____

All packaged material must be labeled in accordance with DOT and OSHA standards.

CONTINUED ON NEXT PAGE

15. REGULATORY INFORMATION

OSHA: Hazardous material by definition of hazard communication standard (29CFR 1910. 1200).

SECTION 313: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of Superfund Amendments and Reauthorization Act of 1986 and CFR part 372: _____

None Known

V.O.C.: <0.1 LBS/GAL (SCAQMD RULE 1168)
<12 G/L

HAZARD INDEX:

0: MINIMAL HAZARD 2: MODERATE HAZARD
1: SLIGHT HAZARD 3: SERIOUS HAZARD
4: SEVERE HAZARD

HMIS RATINGS:

HEALTH: _____ 2 _____

REACTIVITY: _____ 1 _____

FLAMMABILITY: _____ 1 _____

PERSONAL PROTECTION: _____
DEPENDS ON APPLICATION
AND VENTILATION.

TSCA: Components of this product are listed on the TSCA inventory.

16. OTHER INFORMATION

Revision number: 1

All employees or contractors, etc., who use this product must have access to this material safety data sheet.

PREPARED BY: Helmitin Laboratory (MW)

CONTINUED ON NEXT PAGE

17. DEFINITIONS

- ASPIRATION HAZARD:** The danger of drawing material into the lungs, leading to an inflammatory response that can be fatal.
- CFR:** Code Of Federal Regulations. A collection of regulations established by law.
- CARCINOGEN:** A material that either causes cancer in humans, or is considered capable of causing cancer in humans.
- COMBUSTIBLE:** A term used to classify certain materials with low flash points that ignite easily. For OSHA it has a flash point >100°F but below 200°F.
- D.O.T.:** U.S. Dept. Of Transportation
- FLAMMABLE:** A material that gives off vapors that readily ignite at room temperature. OSHA defines flammable as a material with a flash point <100°F.
- FLASH POINT:** The lowest point at which a liquid gives off sufficient vapor to form an ignitable mixture with air.
- HAZARDOUS:** Any substance or mixture of substances having properties capable of producing adverse effects on the health or safety of a human.
- IARC:** International Agency for Research on Cancer
- IRRITANT:** A substance capable of causing an inflammatory effect on living tissue by chemical action at the site of contact.
- LD50:** Lethal Dose 50. The single dose of a substance that causes death of 50% of an animal population from exposure to the substance from any route other than inhalation.
- L.E.L.:** Lower Explosive Limit. The lowest concentration of vapor that burns or explodes when an ignition source is present at ambient temperatures.
- L.F.L.:** Lower Flammable Limit. Same as L.E.L.
- MSHA:** Mine Safety and Health Administration
- N.A.:** Not Applicable or Not Available.
- N.E.:** Not Established
- N.F.P.A.:** National Fire Protection Association
- N.I.O.S.H.:** National Institute of Occupational Safety And Health.
- N.T.P.** National Toxicology Program.
- O.S.H.A.:** The Occupational Safety and Health Administration
- P.E.L.-S.T.E.L.:** Permissible Exposure Limit, Short Term Exposure Limit.
- SYSTEMIC TOXICITY:** Adverse effects induced by a substance which affects the body in a general manner rather than locally.
- T.L.V.-T.W.A.:** Threshold Limit Value, Time Weighted Average
- T.S.C.A.:** Toxic Substance Control Act
- TOXIC:** Any chemical or material that has evidence of an acute or chronic health hazard and is listed in the NIOSH REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES.
- V.O.C.:** Volatile Organic Compound

Material Safety Data Sheet

Material Name: PowerBlade HP Monofilament

*** Section 1 - Chemical Product and Company Identification ***

Manufacturer Information

Shaw Industries Inc.
900 V.D. Parrott Jr. Parkway
Dalton, GA 30722-2128

Phone: 706.275.2910

Emergency # ChemTel 1-800-535-5053

*** Section 2 - Hazards Identification ***

Emergency Overview

No hazards anticipated during normal product handling conditions. Dusts may cause eye, skin and respiratory tract irritation.

Potential Health Effects: Eyes

Dusts may cause eye irritation.

Potential Health Effects: Skin

Dusts may cause skin irritation.

Potential Health Effects: Ingestion

Not a likely route of exposure under normal product use conditions. May cause gastrointestinal irritation if ingested.

Potential Health Effects: Inhalation

Dusts may cause respiratory tract irritation.

HMIS Ratings: Health: 1 Fire: 0 HMIS Reactivity 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

*** Section 3 - Composition / Information on Ingredients ***

CAS #	Component	Percent
Not Available	Polyethylene Resin	91
Not Available	Concentrate	8
Not Available	Process Aide	1

*** Section 4 - First Aid Measures ***

First Aid: Eyes

Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists get medical attention.

First Aid: Skin

For skin contact, flush with large amounts of water. If irritation persists, get medical attention.

First Aid: Ingestion

If the material is swallowed, get immediate medical attention or advice -- Do not induce vomiting.

First Aid: Inhalation

Move person to non-contaminated air. If the affected person is not breathing, apply artificial respiration.

*** Section 5 - Fire Fighting Measures ***

General Fire Hazards

See Section 9 for Flammability Properties.

May burn, but does not readily ignite. As with other organic dusts, fine particles of this material may create a combustible atmosphere if suspended in air.

Hazardous Combustion Products

Irritating and toxic gases or fumes may be released during a fire.

Material Safety Data Sheet

Material Name: Plastic Tape Yarn

Extinguishing Media

Use dry chemical, CO2, water spray or foam.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective gear.

NFPA Ratings: Health: 1 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** Section 6 - Accidental Release Measures ***

Containment Procedures

No special containment needed.

Clean-Up Procedures

Sweep up or gather material and place in appropriate container. Avoid dust generation.

Evacuation Procedures

Isolate area. Keep unnecessary personnel away.

Special Procedures

None

*** Section 7 - Handling and Storage ***

Handling Procedures

Avoid dust generation when handling.

Storage Procedures

Keep away from heat, sparks or other ignition sources

*** Section 8 - Exposure Controls / Personal Protection ***

A: Component Exposure Limits

ACGIH, OSHA, and NIOSH have not developed exposure limits for any of this product's components.

Engineering Controls

Use local exhaust ventilation to keep airborne dust levels to a minimum.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Use safety glasses with side shields when dusts are generated.

Personal Protective Equipment: Skin

Wear suitable protective clothing to minimize skin contact.

Personal Protective Equipment: Respiratory

If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

Personal Protective Equipment: General

Eye wash fountain is recommended.

*** Section 9 - Physical & Chemical Properties ***

Material Safety Data Sheet

Material Name: Plastic Tape Yarn

Appearance:	Green Fiber	Odor:	Slight
Physical State:	Solid	pH:	NA
Vapor Pressure:	ND	Vapor Density:	ND
Boiling Point:	ND	Melting Point:	ND
Solubility (H2O):	ND	Specific Gravity:	ND
Evaporation Rate:	ND	VOC:	ND
Octanol/H2O Coeff.:	ND	Flash Point:	ND
Flash Point Method:	ND	Upper Flammability Limit (UFL):	ND
Lower Flammability Limit (LFL):	ND	Burning Rate:	ND
Auto Ignition:	ND		

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

This is a stable material.

Chemical Stability: Conditions to Avoid

Heat, flames and other ignition sources.

Incompatibility

May react with strong oxidizing agents.

Hazardous Decomposition

Irritating and toxic gases or fumes may be released during a fire.

Possibility of Hazardous Reactions

Will not occur.

*** Section 11 - Toxicological Information ***

Acute Dose Effects

A: General Product Information

May cause eye, skin and respiratory tract irritation.

B: Component Analysis - LD50/LC50

No LD50/LC50's are available for this product's components.

Carcinogenicity

A: General Product Information

No information available for the product.

B: Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

No information available for the product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions

Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Material Safety Data Sheet

Material Name: Plastic Tape Yarn

Disposal Instructions

All wastes must be handled in accordance with local, state and federal regulations.

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

*** Section 14 - Transportation Information ***

US DOT Information

Shipping Name: Not Regulated

*** Section 15 - Regulatory Information ***

US Federal Regulations

Component Analysis

None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

State Regulations

Component Analysis - State

None of this product's components are listed on the state lists from CA, MA, MN, NJ, PA, or RI.

Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

Additional Regulatory Information

*** Section 16 - Other Information ***

Other Information

The information herein is presented in good faith and believed to be accurate as of the effective date given.

However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.



Where Great Floors Begin®

Plant SI/SP, 12454 Highway 27 North, Chickamauga, GA 30707
706-375-3121

Material Safety Data Sheet

1 PRODUCT INFORMATION

PRODUCT TYPE: Polyolefin woven, nonwoven and composite fabrics

COMPANY CONTACT: Larry English
Shaw Plant SI/SP
12454 Highway 27 North
Chickamauga, GA 30707
706-375-3121 Extension 33242

This Material Safety data sheet complies with 29 CFR 1910.1200 OSHA Communication Standard

2 COMPOSITION / INFORMATION ON INGREDIENTS

MATERIAL	CAS#	CONTENTS(%WT/WT)	HAZARD DATA
Polypropylene	9003-07-0	>92	PEL: None established *
Minor Additives	Mixture	<8	TLV: None established *

**PEL=OSHA Permissible exposure limit

TLV=ACGIH Threshold Limit

LISTED AS CARCINOGEN BY: IARC: No NTP: No OSHA: No ACGIH: No

August 17, 2011

3 HAZARDS IDENTIFICATION / POTENTIAL HEALTH EFFECTS

OVERVIEW: Based upon data available to Shaw Industries, Inc., these products are not hazardous under OSHA Hazard Communication (29 CFR 1910.1200).

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATING:

HEALTH:	0
FLAMMABILITY:	1
REACTIVITY:	0

ROUTES OF EXPOSURE

INHALATION: Not Likely

SKIN CONTACT: Likely

SKIN ABSORPTION: N/A

EYE CONTACT: Likely

INGESTION: Not Likely

EFFECTS OF OVEREXPOSURE

ACUTE OVEREXPOSURE: Product may contain surface-applied fiber lubricants that may cause the skin to dry out. Susceptible individuals may show rash or other symptoms.

CHRONIC OVEREXPOSURE: N/A

4 FIRST AID MEASURES

EYES: As for any foreign body, use eyewash. If accompanied by pain or irritation, consult physician.

SKIN: Wash hands thoroughly after handling. In case of irritation, consult a physician.

INHALATION:

INGESTION:

NOTES TO PHYSICIAN:

5 FIRE FIGHTING MEASURES

FLASH POINT:	>315°C (600°F)	AUTOIGNITION TEMPERATURE:	>550°C (1022°F)
FLAMMABLE LIMITS IN AIR, % BY VOLUME	LOWER: N/A	UPPER: N/A	
EXTINGUISHING MEDIA:	Dry Chemical, CO₂, Foam, Water Fog		
UNUSUAL FIRE OR EXPLOSION HAZARDS:	N/A		
SPECIAL FIRE FIGHTING PROCEDURES:	Material will not burn unless preheated. Overheated or molten material may burn slowly with dense smoke. Avoid inhalation of vapors.		

6 ACCIDENTAL RELEASE MEASURES

Product is fabric made from polyolefin fibers or yarns, and the rolls may be very heavy. Use caution in the event of a spill on uneven ground. Use suitably rated lifting equipment in the event rolls need to be moved. Dispose of any damaged material in accordance with local, state and federal regulations.
--

7 HANDLING AND STORAGE

STORAGE:	Store away from oxidizing materials in a cool dry place. Do not store in direct sunlight.
HANDLING:	No special handling required. If product is molten, avoid contact with eyes or skin.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>VENTILATION REQUIREMENTS:</u>	Not required for normal use
<u>PERSONAL PROTECTIVE EQUIPMENT:</u>	
EYE PROTECTION:	Not required unless physical contact with eyes is likely.
SKIN PROTECTION:	Not normally required. Individuals exhibiting exposure symptoms (see Section 3) may wear suitable gloves that prevent contact.
RESPIRATORY PROTECTION:	Not required.
OTHER REQUIRED EQUIPMENT:	Standard work clothing and shoes.

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical Form	Woven, nonwoven or combination of both on a cardboard core
Appearance	May be white, natural, color pigmented, or mixture of colors
Odor	Essentially Odorless
pH	N/A
Melting Point	328°F (164°C)
Solubility in Water	Insoluble
Specific Gravity	0.905
Vapor Density	N/A
Boiling Point	N/A
% Solids:	~100%

10 STABILITY AND REACTIVITY

STABLE <input checked="" type="checkbox"/>	UNSTABLE <input type="checkbox"/>
CONDITIONS TO AVOID:	Store indoors away from direct sunlight, and away from sparks or flame.
INCOMPATIBLE MATERIALS	Strong oxidizing agents
HAZARDOUS POLYMERIZATION:	Will occur <input type="checkbox"/> Will not occur <input checked="" type="checkbox"/>
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon Monoxide, Carbon Dioxide, smoke and soot	

11 TRANSPORT INFORMATION

DOT CLASSIFICATION:	Non-hazardous
---------------------	---------------

12 REGULATORY INFORMATION

This product contains no ingredients subject to reporting under SARA 313 (40 CFR Part 372).

This product may contain ingredients in the fiber lubricant package that are listed under SARA Section 311/312: Acute Health Hazard. However, at levels under 2.5% of the product weight, it is not anticipated that a "Reportable Quantity" threshold will be reached with typical fabric inventories.

Revision History:

The information contained herein is based on the data available to us and is believed to be correct. However, Shaw Industries, Inc. makes no warranty, expressed or implied, regarding the accuracy of these data or the results to be obtained from the use thereof. Shaw Industries, Inc. assumes no responsibility for the use of the product described herein.

August 17, 2011

MATERIAL SAFETY DATA SHEET

MSDS No: 011

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/ UNDERTAKING

UNIMIN CORPORATION
258 Elm Street
New Canaan, CT 06840

Emergency Telephone Number
(203) 966-8880

Telephone Number for Information
(203) 966-8880

PRODUCT NAME: Crystalline Silica in the form of Quartz - various grades

SYNONYMS: Quartz, Crystalline Silica, Silicon Dioxide

Date Prepared: August 2003

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Table with 4 columns: CAS# / EINECS #, Component, Percentage, EU Classification (67/548/EEC). Row 1: 14808-60-7 / 238-878-4, Crystalline Silica in the form of Quartz, 87 - 99.9%, Xn R48/20

Refer to section 16 for further information on EU Classification.

See Section 8 for occupational exposure limit information

SECTION 3: HAZARDS IDENTIFICATION

This product is a chemically inert, non-combustible mineral.

EMERGENCY OVERVIEW
WARNING!

Lung injury and cancer hazard. Do not breathe dust. May cause delayed lung injury. Long term exposure can cause silicosis. Silicosis is a respiratory disease, which can result in delayed, disabling and sometimes fatal lung injury. IARC has determined that crystalline silica inhaled from occupational sources can cause cancer in humans. Risk of injury is dependent on the duration and level of exposure. A single exposure will not result in serious adverse effects. See "Health Hazards" in Section 11 for detailed information. See exposure limit presentation in Section 8 for further information.

Avoid creating dust when handling, using or storing. Use only with adequate ventilation to keep exposure below recommended exposure limits.

EU Classification of Substance/Preparation: Harmful (Xn) R48/20

SECTION 4: FIRST AID MEASURES

Gross Inhalation: Remove victim to fresh air. If breathing has stopped, perform artificial respiration. If breathing is difficult have qualified personnel administer oxygen. Get prompt medical attention.

Skin Contact: No first aid should be needed since dermal contact with this product does not affect the skin. Wash exposed skin with soap and water before breaks and at the end of the shift.

Eye Contact: Flush the eyes immediately with large amounts of running water, lifting the upper and lower lids occasionally. If irritation persists or for imbedded foreign body, get immediate medical attention.

Ingestion: If large amounts are swallowed, get immediate medical attention.

SECTION 5: FIREFIGHTING MEASURES

Flash Point (Method Used): Fully oxidized, will not burn.

Autoignition Temp: Will not burn.

Flammable Limits: **LEL:** Not applicable **UEL:** Not applicable

Extinguishing Media: This product will not burn but is compatible with all extinguishing media. Use any media that is appropriate for the surrounding fire.

Special Fire Fighting Procedures: None required with respect to this product. Firefighters should always wear self-contained breathing apparatus for fires indoors or in confined areas.

Unusual Fire and Explosion Hazards: None.

Hazardous Combustion Products: None.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Wear appropriate protective equipment. If uncontaminated, collect using dustless method (HEPA vacuum or wet method) and place in appropriate container for use. If contaminated: a) use appropriate method for the nature of contamination, and b) consider possible toxic or fire hazards associated with the contaminating substances. Collect for appropriate disposal.

SECTION 7: HANDLING AND STORAGE

Do not breathe dust. Do not rely on your sight to determine if dust is in the air. Silica may be in the air without a visible dust cloud. Use normal precautions against bag breakage or spills of bulk material. Avoid creation of respirable dust. Do not use as a dry abrasive blasting agent. ANSI/AIHA Z9.4:1997 recommends that silica sand be prohibited as an abrasive blasting agent for use in fixed location abrasive-blast enclosures. Use good housekeeping in storage and use areas to prevent accumulation of dust in work area.

To reduce the risk of developing silicosis, lung cancer and other adverse health effects, NIOSH recommends reducing airborne exposure levels as low as possible below NIOSH's recommended exposure limit, substituting less hazardous materials when feasible, using appropriate respiratory protection when source controls cannot keep exposures below the recommended limit and making medical examinations available to exposed workers.

Use adequate ventilation and dust collection. To minimize exposure, wear a respirator approved for silica dust when using, handling, storing or disposing of this product or bag. Refer to the most recent standards of ANSI (Z88.2), OSHA (29 CFR 1910.134), MSHA (30 CFR Parts 56 and 57) and NIOSH Respirator Decision Logic. Maintain, clean and fit test respirators in accordance with OSHA regulations. Maintain and test ventilation and dust collection equipment. Launder clothing that has become dusty. Empty containers (bags, bulk containers, storage tanks, etc.) retain silica residue and must be handled in accordance with the provisions of this Material Safety Data Sheet. WARN and TRAIN employees in accordance with state and federal regulations.

WARN YOUR EMPLOYEES (AND YOUR CUSTOMERS AND USERS IN CASE OF RESALE) BY POSTING, AND OTHER MEANS, OF THE HAZARDS AND OSHA AND ANY OTHER APPLICABLE REGULATORY PRECAUTIONS TO BE USED. PROVIDE TRAINING FOR YOUR EMPLOYEES ABOUT OSHA PRECAUTIONS.

See also American Society for Testing and Materials (ASTM) Standard Practice E1132-99a, "Standard Practice for Health Requirements Relating to Occupational Exposure to Respirable Crystalline Silica".

Additional information on silica hazards and precautionary measures can be found at the following websites:

NIOSH Joint Campaign on Silicosis Prevention <http://www.cdc.gov/niosh/silcamon.html>

OSHA Crystalline Silica Website <http://www.osha-slc.gov/SLTC/silicacrystalline/index.html>

MSHA Silicosis Prevention Website <http://www.msha.gov/SA/HINFO/SILICO/SILICO.HTM>

NIOSH Hazard Review – Health Effects of Occupational Exposure to Respirable Crystalline Silica Website
<http://www.cdc.gov/niosh/02-129rd.html>

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits

Definitions:

MSHA means Mine Safety and Health Administration.

NIOSH means National Institute for Occupational Safety and Health.

OSHA means Occupational Safety and Health Administration.

PEL means OSHA Permissible Exposure Limit.

REL means the NIOSH Recommended Exposure Limit.

TLV means American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value.

TWA means time-weighted average.

OSHA PEL and MSHA Exposure Limit for Crystalline Silica, Quartz $\frac{10 \text{ mg/m}^3}{\% \text{ Silica} + 2}$
(Respirable measured as an 8-hour TWA)

TLV- 0.05 mg/m³ 8-hour TWA (respirable fraction)

NIOSH has issued its REL of 50 micrograms respirable free silica per cubic meter of air (0.05 mg/m³) as determined by a full shift sample up to 10-hour working day, 40 hours per week. NIOSH has recommended that OSHA and MSHA adopt the NIOSH REL as the OSHA PEL and the MSHA Exposure Limit. The 1974 NIOSH Criteria for a Recommended Standard for Occupational Exposure to Crystalline Silica should be consulted for more detailed information. Additionally, NIOSH, in a publication entitled NIOSH Hazard Review Health Effects of Occupational Exposure Respirable Silica (April 2002), stated "...that workers have a significant risk of developing chronic silicosis when they are exposed to respirable crystalline silica over a working lifetime at the current Occupational Safety and Health Administration (OSHA) permissible exposure limit (PEL), the Mine Safety and Health Administration (MSHA) PEL, or the National Institute for Occupational Safety and Health (NIOSH) recommended exposure limit (REL). ...Current sampling and analytical methods used to evaluate occupational exposure to respirable crystalline silica do not meet the accuracy criterion needed to quantify exposures at concentrations below the NIOSH REL of 0.05 mg/m³ as a time-weighted average (TWA) for up to a 10-hr workday during a 40-hr workweek. Until improved sampling and analytical methods are developed for respirable crystalline silica, NIOSH will continue to recommend an exposure limit of 0.05 mg/m³ to reduce the risk of developing silicosis, lung cancer, and other adverse health effects. NIOSH also recommends minimizing the risk of illness that remains for workers exposed at the REL by substituting less hazardous materials for crystalline silica when feasible, by using appropriate respiratory protection when source controls cannot keep exposures below the NIOSH REL, and by making medical examinations available to exposed workers."

Crystalline silica exists in several forms, the most common of which are quartz (i.e. this product), trydimite and cristobalite, with quartz being the most common form found in nature. If quartz is heated to more than 870°C, it can change form to trydimite and if quartz is heated to more than 1450°C, it can change form to cristobalite. The OSHA PELs and MSHA Exposure Limits for trydimite and cristobalite are one-half of the PEL for quartz.

Ventilation: Use local exhaust as required to maintain exposures as far as possible below applicable occupational exposure limits. See also ACGIH "Industrial Ventilation - A Manual for Recommended Practice" (current edition). Control of exposure to dust must be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general or local exhaust ventilation and substitution of less toxic materials).

Respiratory Protection: When effective engineering controls are not feasible, or while they are being implemented, appropriate respiratory protection must be used. Use appropriate respiratory protection for respirable particulates based on consideration of airborne workplace concentrations and duration of exposure arising from intended end use. Refer to the most recent standards of ANSI (Z88.2), OSHA (29 CFR 1910.134), MSHA (30 CFR Parts 56 and 57) and NIOSH Respirator Decision Logic.

Gloves: Protective gloves recommended.

Eye Protection: Safety glasses or goggles recommended.

Other Protective Equipment/Clothing: As appropriate for the work environment. Dusty clothing should be laundered before reuse.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: White powder, odorless.

pH: Not applicable

Boiling Point: 4046°F / 2230°C

Melting Point: 2930°F / 1610°C

Solubility in Water: Negligible

Percent Volatile: 0%

Autoignition Temp: Will not burn

Specific Gravity (water=1): 2.65

Vapor Pressure: Not applicable

Vapor Density: Not applicable

Evaporation Rate: Not applicable

Flash Point (Method Used): Fully oxidized, will not burn

Flammable Limits: LEL: Not applicable

UEL: Not applicable

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable

Conditions to Avoid: None

Incompatibility: Powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, etc.

Hazardous Decomposition Products: Silica will dissolve in hydrofluoric acid producing a corrosive gas, silicon tetrafluoride.

Hazardous Polymerization: Will not occur.

Conditions to Avoid: None

SECTION 11: TOXICOLOGICAL INFORMATION

HEALTH HAZARDS:

Inhalation: Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may have the following serious chronic health effects:

Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling and sometimes fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop mycobacterial infections (tuberculous and non-tuberculous) and fungal infections. Inhalation of air with a very high concentration of respirable silica dust can cause the most serious forms of silicosis in a matter of months or a few years. Some epidemiologic studies have concluded that there is significant risk of developing silicosis even at airborne exposure levels that are equal to the recommended NIOSH REL, the ACGIH TLV, the OSHA PEL, and the MSHA Exposure Limit.

Cancer Status: The International Agency for Research on Cancer has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1 - carcinogenic to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (published in June 1997) in conjunction with the use of these materials. The National Toxicology Program classifies respirable crystalline silica as "known to be a human carcinogen". Refer to the Tenth Report on Carcinogens (2002). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

Other Data with Possible Relevance to Human Health:

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by fibrosis of the lungs, skin and other internal organs) rheumatoid arthritis, systemic lupus, erythematosus, sarcoidosis, chronic bronchitis, chronic obstructive pulmonary disease (COPD), emphysema, chronic kidney disease and end-stage renal disease.

For further information consult "Adverse Effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, pages 761-768, 1997, and see also NIOSH Hazard Review – Health Effects of Occupational Exposure to Respirable Crystalline Silica, April 2002 (see Section 7 for NIOSH Hazard Review Website).

Skin Contact: No adverse effects expected.

Eye Contact: Contact may cause mechanical irritation and possible injury.

Ingestion: No adverse effects expected for normal, incidental ingestion.

Chronic Health Effects: See "Inhalation" subsection above with respect to silicosis, cancer status and other data with possible relevance to human health.

Medical Conditions Aggravated by Exposure: Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to respirable quartz dust.

Signs and Symptoms of Exposure: Exposure to dust may cause mucous membrane and respiratory irritation, cough, sore throat, nasal congestion, sneezing and shortness of breath. However, there may be no immediate signs or symptoms of exposure to hazardous concentrations of respirable crystalline silica (quartz). See "Inhalation" subsection above for symptoms of silicosis. The absence of symptoms is not necessarily indicative of safe conditions.

Acute Toxicity Values: Silica: LD50 oral rat >22,500 mg/kg.

SECTION 12: ECOLOGICAL INFORMATION

Silica: LC50 carp > 10,000 mg/L/72 hr. This product is not expected to present an environmental hazard.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Silica is not classified as a hazardous waste under US EPA RCRA regulations. If uncontaminated, dispose as an inert, non-metallic mineral. If contaminated, dispose in accordance with all applicable local, state/provincial and federal regulations in light of the contamination present. Local regulations may be more stringent than regional and national requirements. It is the responsibility of the waste generator to determine the toxicity and physical characteristics of the material to determine the proper waste identification and disposal in compliance with applicable regulations.

SECTION 14: TRANSPORT INFORMATION**U.S. DOT HAZARD CLASSIFICATION**

Proper Shipping Name: Not Regulated
Technical Name: N/A
UN Number: N/A
Hazard Class/Packing Group: N/A
Labels Required: None
DOT Packaging Requirements: N/A
Exceptions: N/A

SECTION 15: REGULATORY INFORMATION

SARA 311/312: Hazard Categories for SARA Section 311/312 Reporting: Chronic Health

SARA 313 This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under the SARA Section 313 (40 CFR 372): None

CERCLA Section 103 Reportable Quantity: None

California Proposition 65: This product contains crystalline silica (respirable) which is known to the State of California to cause cancer.

Toxic Substances Control Act: All of the components of this product are listed on the EPA TSCA Inventory or exempt from premanufacture notification requirements.

European Inventory of Commercial Chemical Substances: All of the components of this product are listed on the EINECS Inventory or exempt from notification requirements. (The EINECS number for Quartz: 238-878-4)

European Community Labeling: Harmful Xn
 Contains crystalline silica, quartz (238-878-4)
 R48/20 Harmful: Danger of serious damage to health by prolonged exposure by inhalation.
 S22 Do not breathe dust
 S38 In case of insufficient ventilation, wear suitable respiratory equipment.

Canadian Environmental Protection Act: All the components of this product are listed on the Canadian Domestic Substances List or exempt from notification requirements.

Canadian WHMIS Classification: Class D, Division 2, Subdivision A (Very Toxic Material causing other Toxic Effects)

This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

Japan METI: All of the components of this product are existing chemical substances as defined in the Chemical Substance Control Law.

Australian Inventory of Chemical Substances: All of the components of this product are listed on the AICS Inventory or exempt from notification requirements.

Korea: All of the components of this product are listed on the ECL inventory or exempt from notification requirements.

Philippines: All of the components of this product are listed on the PICCS inventory or exempt from notification requirements.

16: OTHER INFORMATION**EU Classes and Risk Phrases for Reference (See Sections 2 and 3)**

Xn Harmful

R48/20 Harmful: Danger of serious damage to health by prolonged exposure by inhalation.

S22 Do not breathe dust

S38 In case of insufficient ventilation, wear suitable respiratory equipment.

NFPA Hazard Rating: Health: 1 Fire: 0 Reactivity: 0**HMIS Hazard Rating:** Health: * Fire: 0 Reactivity: 0

* Warning - Chronic health effect possible - inhalation of silica dust may cause lung injury/disease (silicosis). Take appropriate measures to avoid breathing dust. See Section 3.

References:

Registry for Toxic Effects of Chemical Substances (RTECS), 2002

Patty's Industrial Hygiene and Toxicology

NIOSH Hazard Review - Health Effects of Occupational Exposure to Respirable Crystalline Silica, April 2002

NTP Tenth Report on Carcinogens, 2002

IARC Monograph Volume 68, Silica, Some Silicates and Organic Fibres, 1997

Hazardous Substances Data Bank (HSDB), 2002

Revision Summary: Revised NIOSH Information (Section 2), Revised Hazards Identification (Section 3), Handling and Storage (Section 7), Revised Ventilation and Respiratory Protection (Section 8), Revised Health Hazard Data (Section 11), Revised Disposal Information (Section 13), Revised EINECS Number and EU Labeling, Added Korean and Philippine Inventory Status (Section 15).

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. The information set forth herein is based on technical data the Unimin Corporation believes reliable. It is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside the control of Unimin Corporation, no warranties, expressed or implied, are made and no liability is assumed in connection with any use of this information. Any use of these data and information must be determined by the user to be in accordance with federal, state and local laws and regulations.

Material Safety Data Sheet

PRODUCT: Ground Rubber

(REVISED) FEB. 1, 2003

I. Product Identification & Physical Characteristics

<u>Product Name</u>	Ground Rubber	<u>Solubility In Water</u>	Insoluble
<u>Appearance</u>	Black granular power	<u>Odor</u>	Slight smell of vulcanized rubber
<u>Specific Gravity</u>	.95 TO 1.40	<u>Melting Point</u>	N / A
<u>Vapor Pressure</u>	N / A	<u>Vapor Density</u>	N / A
<u>Evaporation Rate</u>	N / A	<u>Boiling Point</u>	N / A

II. Hazardous Ingredients

<u>Material</u> (CAS)	Wt%	OSHA PEL	(ACGIH TLV)
<u>Vulcanized Rubber Compound</u>	Approx. 99%	N / A	N / A
<u>Talc, Respirable Dust</u> (14807-96-6)	Less than 4%	2.0 mg/m3	(2.0 mg/m3)

III. Fire and Explosion Hazard Data

Flash Point Ignition Temperature Of Dust Cloud 320c (608F) Approximately

Flammable Limits N / A LEL .025 oz / cu. Ft UEL N / A

Extinguishing Media Water, foam, dry power (Do Not Use High Pressure Water)

Special Fire Fighting Procedures Noxious gases may be formed under fire conditions, wear NIOSH approved self-contained breathing apparatus.

Unusual Fire And Explosion Hazards * Dust may be explosive if mixed with air in critical proportions and in the presence of ignition source. The hazard is similar to that of many organic solids.

** Estimates based on data for 200 mesh synthetic & crude hard rubber dust; information contained in the NFPA (Fire Protection Handbook).

PRODUCT: Ground Rubber

VII. Control Measures

Respiratory Protection (Specify Type) Use any dust mist respirator for up to 10mg/m³

Ventilation Yes

Local Exhaust Yes if dusty conditions occur.

Special None

Mechanical (General) Dust collectors and exhaust fans.

Other Protective Clothing Or Equipment Enough fresh air should flow past the user to prevent exposure to airborne fibers and particles.

Work / Hygienic Practices Good personal hygiene, frequent washing with soap and water of exposed areas, remove and clean soiled clothing.

The information contained in this M.S.D.S. is consistent with U.S. Department of Labor OSHA, form OMB number 1218 - 0072. Consult OSHA Hazard Communication Standard 29 CFR 1910.1200 for additional information. To fully understand the use of any material the user should avail themselves of reference material and expert consultation in the fields of fire prevention, ventilation and toxicology.



1131 Broadwat Street
Dayton, Tn. 37321
U.S.A.
Phone: (423) 775-0792

Date: July 13, 2009

MBID# 43

Material Safety Data Sheet

A. Identity

Chemical Name or Synonyms PP, PE Fiber	Trade Names TENCATE, Thiojon, Polyloom
Manufacturer's Name TENCATE GRASS North America	Color Name/Number Field Grn PE #65
Address 1131 Broadway St. Dayton, TN. 37321, U.S.A.	Emergency Telephone or Contact (423)775-0792

B. Hazardous Ingredients

This product does not contain any hazardous ingredients.		
<u>CAS#</u>	<u>Chemical Name</u>	<u>% by Weight</u>
	None	
This product is considered to be a non-hazardous chemical under the federal Occupational Safety and Health Administration hazard communication Standard 29 CFR 1910.1200.		

C. Physical data

Boiling Point (°C)	N/A	Melting Point (°C)	PE=125± 6 PP=168± 5
Vapor Pressure (mm HG & temp.)	N/A	Specific Gravity (H2O = 1)	PE=0.90-0.96 pp=0.90-0.93
Molecular Weight	N/A	Percent Volatile by Volume %	N/A
Vapor Density (air = 1)	N/A	Evaporation Rate	N/A

D. Reactivity Data

Stability (thermal, light, ect.)	Unstable	Conditions to avoid:
	Stable	None
Incompatibility (materials to avoid): Some hydrocarbons may cause swelling at room temperature. Some solvents will dissolve yarn at elevated temperature.		
Hazardous Decomposition Products: N/A		
Hazardous Polymerization		May Occur
		Will not Occur X
Conditions to avoid: None		

E. Fire Hazard Data

Flash Point: >600°F	Autoignition Temp(°F) >575°F
Flammable Limits (% by volume in air):	LeI: N/A Uel: N/A
Extinguishing Method: Water, Foam, Carbon Dioxide, Dry Chemicals, and Halon	
Special Fire Fighting Procedures: Use water spray to cool fire exposed surfaces and to protect personnel. Wear self contained breathing apparatus when fighting fire in contained area.	
Unusual Fire and Explosion Hazards: Some carbon monoxide smoke formation is possible under oxygen lean conditions.	



1131 Broadwat Street
Dayton, Tn. 37321
U.S.A.
Phone: (423) 775-0792

Date: July 13, 2009

MBID# 43

Material Safety Data Sheet

F. Physiological Effects and Hazard Data

Threshold Limit Value:	N/A	
Effects from Ingestion; If available LD50 and Species:	No information found	
Effects from Skin Absorption; If available LD50 and Species:	N/A	
Effects from Inhalation; If available LD50 and Species:	N/A	
Skin Irritation and/or Sensitization(species):	No information found	
Eye Irritation and/or Injury (species):	N/A	
Warning Properties (odor threshold, Irritation to eyes, nose, throat):	N/A	
Chronic Hazards:	No information found	
Industrial and/or Human Experience:	No reported incidents.	
Acute Signs or Symptoms of Overexposure:	No information found	
Chronic Signs or Symptoms of Overexposure:	No information found	
Medical Conditions Aggravated by Exposure:	No information found	
Primary Routes of Entry:	No information found	
OSHA PEL:	Not established	
ACGIH TLV:	Not established	
Cardiogenicity: Not listed as carcinogen or potential carcinogen by NTP, IARC, or OSHA.		

G. Emergency and First Aid Procedures

Eye Contact:	Flush with water. Call a physician if needed.
Skin Contact:	N/A
Inhalation:	N/A
Ingestion:	N/A

H. Spill or Leak Procedures

Steps to be taken in case material is released or spilled:	Shut off water source, advise municipal authorities of possible floating non-toxic substance if material enters course of sewer.
Waste disposal method:	Dispose in accordance with federal, state, and local regulations.

I. Control Measures and Precautions

Eye Protection:	Not needed. However, safety glasses or goggles are recommended
Respiratory Protection:	Not needed
Protective Gloves:	Not needed
Ventilation:	Not needed
Other Precautions:	Not needed
Precautions to be taken in handling and storage:	Do not store near flame, heat, or strong oxidents.
Recommendations for Dusty Process:	If there is a potential to generate airborne fiber dust or mist during processing, we recommend an exposure limit of 2.7 mg/m ³ air TWA. Adequate ventilation and, if needed, dust mask are recommended.

J. Section 313 Supplier Notification

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To Know Act of 1986 (40 CFR 372):				
CAS#	Chemical Name	% by Weight	% of Total Parent Metal	CAS# of Parent Metal
	None			

K. Legal Disclaimer

While the information and recommendations set forth herein are believed to be accurate and complete as of the date hereof, TENCATE GRASS NORTH AMERICA makes no warranty with respect thereto and disclaims all liability from reliance thereon.



1131 Broadwat Street
Dayton, Tn. 37321
U.S.A.
Phone: (423) 775-0792

Date: July 30, 2009

MBID# 618

Material Safety Data Sheet

A. Identity

Chemical Name or Synonyms PP, PE Fiber	Trade Names TENCATE, Thiolon, Polyloom
Manufacturer's Name TENCATE GRASS North America	Color Name/Number Lime Green PE #66P
Address 1131 Broadway St. Dayton, TN. 37321, U.S.A.	Emergency Telephone or Contact (423)775-0792

B. Hazardous Ingredients

This product does not contain any hazardous ingredients.		
<u>CAS#</u>	<u>Chemical Name</u>	<u>% by Weight</u>
	None	
This product is considered to be a non-hazardous chemical under the federal Occupational Safety and Health Administration hazard communication Standard 29 CFR 1910.1200.		

C. Physical data

Boiling Point (°C)	N/A	Melting Point (°C)	PE=125± 6 PP=168± 5
Vapor Pressure (mm HG & temp.)	N/A	Specific Gravity (H2O = 1)	PE=0.90-0.96 pp=0.90-0.93
Molecular Weight	N/A	Percent Volatile by Volume %	N/A
Vapor Density (air = 1)	N/A	Evaporation Rate	N/A

D. Reactivity Data

Stability (thermal, light, ect.)	Unstable Stable X	Conditions to avoid:	None
Incompatibility (materials to avoid):			
Some hydrocarbons may cause swelling at room temperature. Some solvents will dissolve yarn at elevated temperature.			
Hazardous Decomposition Products:	N/A		
Hazardous Polymerization	May Occur		
	Will not Occur	X	
Conditions to avoid:	None		

E. Fire Hazard Data

Flash Point: >600°F	Autoignition Temp(°F) >575°F
Flammable Limits (% by volume in air):	Lel: N/A Uel: N/A
Extinguishing Method: Water, Foam, Carbon Dioxide, Dry Chemicals, and Halon	
Special Fire Fighting Procedures: Use water spray to cool fire exposed surfaces and to protect personnel. Wear self contained breathing apparatus when fighting fire in contained area.	
Unusual Fire and Explosion Hazards: Some carbon monoxide smoke formation is possible under oxygen lean conditions.	



1131 Broadwat Street
Dayton, Tn. 37321
U.S.A.
Phone: (423) 775-0792

Date: July 30, 2009

MBID# **618**

Material Safety Data Sheet

F. Physiological Effects and Hazard Data

Threshold Limit Value:	N/A
Effects from Ingestion; If available LD50 and Species:	No Information found
Effects from Skin Absorbtion; If available LD50 and Species:	N/A
Effects from Inhalation; If available LD50 and Species:	N/A
Skin Irritation and/or Sensltzation(species):	No Information found
Eye Irritation and/or Injury (species):	N/A
Warning Properties (odor thrashold,Irratation to eyes, nose, throat):	N/A
Chronic Hazards:	No information found
Industrial and/or Human Experience:	No reported Incidents.
Acute Signs or Symptoms of Overexposure:	No Information found
Chronic Signs or Symptoms of Overexposure:	No information found
Medical Conditions Aggravated by Exposure:	No information found
Primary Routes of Entry:	No information found
OSHA PEL:	Not established
ACGIH TLV:	Not established
Carcinogenicity:	Not listed as carcinogen or potential carcinogen by NTP, IARC, or OSHA.

G. Emergency and First Aid Procedures

Eye Contact:	Rush with water. Call a physician if needed.
Skin Contact:	N/A
Inhalation:	N/A
Ingestion:	N/A

H. Spill or Leak Procedures

Steps to be taken in case material is released or spilled:	Shut off water source, advise municiple authorities of possible floating non-toxic substance if material enters course of sewer.
Waste disposal method:	Dispose in accordance with federal, state, and local regulations.

I. Control Measures and Precautions

Eye Protection:	Not needed. However, safety glasses or goggles are recommended
Respiratory Protection:	Not needed
Protective Gloves:	Not needed
Ventilation:	Not needed
Other Precautions:	Not needed
Precautions to be taken in handling and storage:	Do not store near flame, heat, or strong oxidents.
Recommendations for Dusty Process:	If there is a potential to generate alrborn fiber dust or mist during processing, we recommend an exposure limit of 2.7 mg/m3 air TWA. Adequate ventilation and, if needed, dust mask are recommended.

J. Section 313 Supplier Notification

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Commnity Right -To Know Act of 1986 (40 CFR 372):				
CAS#	Chemical Name	% by Weight	% of Total Parent Metal	CAS# of Parent Metal
	None			

K. Legal Disclaimer

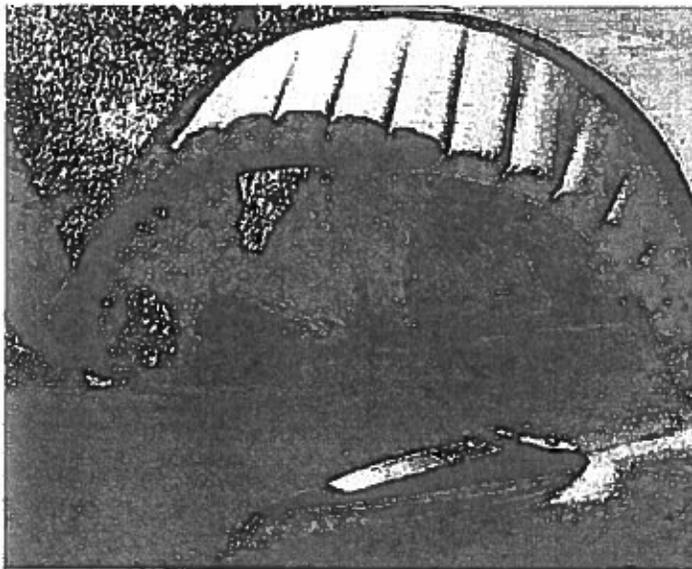
While the information and recommendations set forth herein are believed to be accurate and complete as of the date hereof, TENCATE GRASS NORTH AMERICA makes no warranty with respect thereto and disclaims all liability from reliance thereon.
--

World of Coats ultra dee

Coats ultra dee is a single pass urethane bonded continuous filament polyester thread that can be used in tents, awnings, outdoor furniture, boat tops and general purpose marine applications. The colours available in Coats ultra dee are generally UV resistant and are suitable for most coloured coated fabric except in the case of the contrast stitching of vinyl materials.

Main Uses:

- Tents and awnings
- Canvas and tarps
- Marine lift slings and tie downs
- General marine applications



Features and Benefits:

- Lightly bonded CF polyester thread for marine applications
- Wide range of dye house dyed colours and sided bobbins available
- Excellent resistance to bleach, mildew and sunlight
- Ideal for non-vinyl general purpose stitching

World of Coats

- Coats is the largest global thread supplier and has been the world's leading thread company for over 200 years.
- With manufacturing plants in over 70 locations and sales and distribution in more than 80 countries, Coats is uniquely placed to serve your thread needs anywhere in the world.
- Our state of the art colour communications management system, Coats ColourStitch®, enables exact sample matching and colour approval almost instantaneously between locations around the globe.

One colour range. One specification. Worldwide.

Coats operates to a global specification for Coats ultra dee with quality audited by a centrally located team.

www.coatsindustrial.com

COATS

ultra dee



BONDED
CONTINUOUS
FILAMENT
POLYESTER

Product information



Product Guidelines: Coats ultra dee

Bonded, twisted, dye house dyed continuous filament polyester thread

Tex Denier	Denier	Spins	Average Strength		Indication of Min. Max	Recommended Needle size*	
			Grains	Grains		Shuttle	Machine
45	60	2	3,136	3,198	10 - 20	14 - 18	90 - 110
70	40	3	4,704	4,797	10 - 20	16 - 19	100 - 120
90	30	4	6,468	6,595	10 - 20	19 - 22	120 - 140
135	20	6	9,310	9,493	10 - 20	22 - 25	140 - 200
210	13	8	13,720	13,990	10 - 20	25 - 27	200 - 250
270	10	10	17,738	18,087	15 - 25	27 - 28	250 - 280
350	9	13	22,638	23,084	15 - 25	27 - 28	250 - 280
400	8	15	27,890	28,480	15 - 30	28 - 29	280 - 300
450	7	18	31,066	31,678	15 - 30	28 - 29	280 - 300
500	6	20	37,730	38,473	15 - 30	29 - 30	300 - 330

* Needle size recommendations are a guide only and ultimately depend on the sewing application. Since conditions and applications vary considerably in the use of thread, the thread user should assure herself or himself by preliminary testing that the thread is suitable for the end use intended. Technical information listed above is based on current averages and should be taken only as indicative.

- UV-inhibitor filaments used in all sizes 220 denier and above
- Special finishes available: anti-wick, high lube, FR
- Make Up (King Spool): - By length (Meters): 1000, 1500, 2500
- By weight (Kgs): 0.113, 0.227, 0.454, 0.907

Coats ultra dee (barbobs)

Tex	Denier	Spins	Grains	Tex	Denier	Spins	Grains
45	60	2	71	135	20	A	23
-	-	3	38	-	-	M	22
70	40	4	49	-	-	G	16
-	-	6	31	-	-	U	30
-	-	8	48	210	13	A	15
-	-	10	44	-	-	R	16
-	-	13	60	-	-	U	20
90	30	15	22	-	-	4W	39
-	-	18	33	-	-	41	124
-	-	20	23	-	-	58	34
-	-	25	45	-	-	-	-

* Barbob (with side and with core)

Only popular bobbin styles listed. All yardages are approximate and are for bonded colours.

Bobbin Benefits:

- 5-15% machine productivity increase, precision wind for uniform pull off tension, improved stitch appearance.



Physical and chemical properties of bonded continuous filament polyester:

Thermal Properties:

- Melting point 250 - 260°C

Chemical Properties:

- Mineral acids: Resistant to most mineral acids
- Alkalis: Essentially unaffected by weak alkalis, but less resistant to stronger alkalis, especially at higher temperatures
- Organic solvents: Generally unaffected, but soluble in some phenolic compounds
- Bleaching: Excellent resistance
- Insects / microorganisms (mildew, rot): Unaffected
- Moisture regain: Approximately 0.4% (drip dry)



Coats ultra dee fastness properties:

- Wash Fastness (ISO 105 C06) Grade 4
- Water Fastness (ISO 105 E01:2010) Grade 4
- Rub Fastness (ISO 105 X12:2001) Grade 3 - 4
- Vinyl Transfer (CTC-TP-1032-003) Dye house dyed colours not recommended



Since conditions and applications vary considerably in the use of thread, the thread user should make sure by means of a preliminary test that the thread is suitable for the intended end use.

COATS
ultra dee



BONDED
CONTINUOUS
FILAMENT
POLYESTER

Product information

