

INVITATION TO BID**STATE OF LOUISIANA**Calcasieu Parish School System
Office of Purchasing

BIDS WILL BE PUBLICLY OPENED:

Date & Time: 10/16/13 @ 10:00 A.M.

=====> SOLICITATION # :

2014-31

OPENING DATE :

Oct 16, 2013

=====>

VENDOR NAME AND ADDRESS

Bliss Products and Services, Inc.
6831 S. Sunsetwater Road
Lithia Springs, GA 30122**FILL IN VENDOR NAME AND CONTACT NAME,
ADDRESS ABOVE, BEFORE SUBMITTING BID.****RETURN BID TO**Joseph E. Feucht
Supervisor of Purchasing
Calcasieu Parish School System
3310 Broad Street Room 1300
Lake Charles, LA 70615BUYER
BUYER PHONE

HAROLD HEATH

(337) 217-4000

REQ. DEPARTMENT

PLANNING/CONSTR +

OFFICE OF PURCHASING

VENDOR PHONE

FISCAL YEAR

2014

SCHEDULED END DATE

Oct 16, 2013

ITEM(S) FOR: INSTALLATION OF BONDED RUBBER MULCH PLAYGROUND SURFACING

TO BE COMPLETED BY VENDOR

1. 15-20 DELIVERY WILL BE MADE IN THIS NUMBER OF DAYS AFTER RECEIPT OF PURCHASE ORDER
2. 2% CASH DISCOUNT FOR PROMPT PAYMENT IF MADE WITHIN THIRTY (30) DAYS. CASH DISCOUNTS FOR LESS THAN 30 DAYS OR LESS THAN ONE (1) PERCENT WILL BE ACCEPTED, BUT WILL NOT BE CONSIDERED IN AWARD DETERMINATION.
3. N/A BID BOND ATTACHED, _____ CERTIFIED CHECK ATTACHED, _____ OTHER, IF REQUIRED
4. 2014-31/27419 BID REFERENCE NUMBER. (THIS NUMBER WILL APPEAR ON RESULTING PURCHASE ORDER OR CONTRACT).

INSTRUCTIONS TO BIDDERS

1. GH READ THE ENTIRE BID, INCLUDING ALL TERMS AND CONDITIONS AND SPECIFICATIONS
 2. CB ALL BID PRICES **MUST** BE TYPED OR WRITTEN IN INK. ANY CORRECTIONS, ERASURES OR OTHER FORMS OF ALTERATIONS TO UNIT PRICES SHOULD BE INITIALED BY THE BIDDER.
 3. GH THIS BID IS TO BE SIGNED MANUALLY IN INK.
 4. GH BID PRICES SHALL INCLUDE DELIVERY OF ALL ITEMS F.O.B. LAKE CHARLES, LA OR AS OTHERWISE PROVIDED. BIDS CONTAINING "PAYMENT IN ADVANCE" OR "C. O. D." REQUIREMENTS ARE NOT ACCEPTABLE. PAYMENT IS TO BE MADE WITHIN 30 DAYS AFTER RECEIPT OF PROPERLY EXECUTED INVOICE OR DELIVERY, WHICHEVER IS LATER. NO "SHORT PAYMENT" OF INVOICES ARE ALLOWED
 5. CB PERFORMANCE BOND BY SUCCESSFUL VENDOR ON ALL ORDERS WILL BE 50% OF ORDER DUE 10 DAYS AFTER NOTIFICATION OF AWARD.
 6. CB DESIRED DELIVERY 45 DAYS AFTER RECEIPT OF ORDER OR SOONER
- ANY QUESTIONS ABOUT ANY ITEM SHOULD BE DIRECTED TO BUYER AND PURCHASING DEPARTMENT.

CONDITIONS CONTINUED ON NEXT PAGE

VENDOR PHONE NUMBER: 800-248-2547

FAX NUMBER: 866-920-1915

TITLE PRESIDENTDATE 14 OCT 13SIGNATURE OF BIDDER
(MUST BE SIGNED)

STANDARD TERMS & CONDITIONS		INVITATION TO BID	
BID NUMBER: 2014-31 TIME: 10:00 AM OPEN DATE: 10/16/2013		BIDDER: <i>Bliss Products and Services, Inc.</i>	PAGE 2

7. TO ASSURE CONSIDERATION OF YOUR BID, ALL BIDS AND ADDENDA SHOULD BE RETURNED IN AN ENVELOPE OR PACKAGE CLEARLY MARKED WITH THE BID OPENING DATE AND THE BID NUMBER, OR SUBMITTED IN THE SPECIAL ENVELOPE IN FURNISHED FOR THAT PURPOSE

8. BIDS SUBMITTED ARE SUBJECT TO PROVISIONS OF THE LAWS OF THE STATE OF LOUISIANA INCLUDING BUT NOT LIMITED TO L.R.S. 39:1551-1736; PURCHASING RULES AND REGULATIONS; EXECUTIVE ORDERS; STANDARD TERMS AND CONDITIONS; SPECIAL CONDITIONS; AND SPECIFICATIONS LISTED IN THIS SOLICITATION

9. IMPORTANT: BY SIGNING THE BID, THE BIDDER CERTIFIED COMPLIANCE WITH ALL INSTRUCTIONS TO BIDDERS, TERMS, CONDITIONS AND SPECIFICATIONS, AND FURTHER CERTIFIED THAT THIS BID IS MADE WITHOUT COLLUSION OR FRAUD. THIS BID IS TO BE MANUALLY SIGNED IN INK BY A PERSON AUTHORIZED TO BIND THE VENDOR (SEE NO. 30). ALL BID INFORMATION SHALL BE MADE WITH INK OR TYPEWRITTEN

10. ADDRESS ALL INQUIRIES AND CORRESPONDENCE TO THE BUYER AT THE PHONE AND ADDRESS SHOWN ABOVE.

11. CONFERENCE:
IN SOME CASES, NON-MANDATORY PRE-BID CONFERENCES MAY BE HELD.

12. BID FORMS.
ALL WRITTEN BIDS, UNLESS OTHERWISE PROVIDED FOR, MUST BE SUBMITTED ON, AND IN ACCORDANCE WITH, FORMS PROVIDED, PROPERLY SIGNED (SEE NO. 30). BIDS SUBMITTED IN THE FOLLOWING MANNER WILL NOT BE ACCEPTED:
 A. BID CONTAINS NO SIGNATURE INDICATING INTENT TO BE BOUND;
 B. BID FILLED OUT IN PENCIL; AND
 C. BID NOT SUBMITTED ON THE DISTRICT'S STANDARD FORMS.
 D. BIDS WITH MORE THAN ONE PRICE PER ITEM

BIDS MUST BE RECEIVED AT THE ADDRESS SPECIFIED IN THE SOLICITATION PRIOR TO BID OPENING TIME IN ORDER TO BE CONSIDERED. TELEGRAPHIC AND FAX ALTERATIONS TO BIDS RECEIVED BEFORE BID OPENING TIME WILL BE CONSIDERED PROVIDED FORMAL BID AND WRITTEN ALTERATION HAVE BEEN RECEIVED AND TIME-STAMPED BEFORE BID OPENING TIME. ENTIRE BID SHOULD BE RETURNED, EXCEPT ITEM PAGES NOT BID.

13. STANDARDS OF QUALITY.
ANY PRODUCT OR SERVICE BID SHALL CONFORM TO ALL APPLICABLE FEDERAL AND STATE LAWS AND REGULATIONS AND THE SPECIFICATIONS CONTAINED IN THE SOLICITATION. UNLESS OTHERWISE SPECIFIED IN THE SOLICITATION, ANY MANUFACTURER'S NAME, TRADE NAME, BRAND NAME, OR CATALOG NUMBER USED IN THE SPECIFICATION IS FOR THE PURPOSE OF DESCRIBING THE STANDARD OF QUALITY, PERFORMANCE, AND CHARACTERISTICS DESIRED AND IS NOT INTENDED TO LIMIT OR RESTRICT COMPETITION. BIDDER MUST SPECIFY THE BRAND AND MODEL NUMBER OF THE PRODUCT OFFERED IN HIS BID. BIDS NOT SPECIFYING BRAND AND MODEL NUMBER SHALL BE CONSIDERED AS OFFERING THE EXACT PRODUCTS SPECIFIED IN THE SOLICITATION.

14. DESCRIPTIVE INFORMATION.
BIDDERS PROPOSING AN EQUIVALENT BRAND OR MODEL SHOULD SUBMIT WITH THE BID INFORMATION (SUCH AS ILLUSTRATIONS, DESCRIPTIVE LITERATURE, TECHNICAL DATA) SUFFICIENT FOR CALCASIEU PARISH SCHOOL BOARD TO EVALUATE QUALITY, SUITABILITY, AND COMPLIANCE WITH THE SPECIFICATIONS IN THE SOLICITATION. FAILURE TO SUBMIT DESCRIPTIVE INFORMATION MAY CAUSE BID TO BE REJECTED. ANY CHANGE MADE TO A MANUFACTURER'S PUBLISHED SPECIFICATIONS SUBMITTED FOR A PRODUCT SHALL BE VERIFIABLE BY THE MANUFACTURER. IF ITEM(S) BID DO NOT FULLY COMPLY WITH SPECIFICATIONS (INCLUDING BRAND AND/OR PRODUCT NUMBER), BIDDER MUST STATE IN WHAT RESPECT ITEM(S) DEVIATE. FAILURE TO NOTE EXCEPTIONS ON THE BID FORM WILL NOT RELIEVE THE SUCCESSFUL BIDDER(S) FROM SUPPLYING THE ACTUAL PRODUCTS REQUESTED.

15. BID OPENING.
BIDDERS MAY ATTEND THE BID OPENING, BUT NO INFORMATION OR OPINIONS CONCERNING THE ULTIMATE CONTRACT AWARD WILL BE GIVEN AT THE BID OPENING OR DURING THE EVALUATION PROCESS. BIDS MAY BE EXAMINED WITHIN 72 HOURS AFTER BID OPENING. INFORMATION PERTAINING TO COMPLETED FILES MAY BE SECURED BY VISITING THE CALCASIEU PARISH SCHOOL BOARD DURING NORMAL WORKING HOURS. WRITTEN BID TABULATIONS WILL NOT BE FURNISHED UNLESS VENDOR HAS PROVIDED A SELF ADDRESSED STAMPED ENVELOPE IN ORIGINAL BID PACKET.

16. AWARDS.
THE CALCASIEU PARISH SCHOOL BOARD RESERVES THE RIGHT TO AWARD ITEMS SEPARATELY, GROUPED OR ON AN ALL-OR-NONE BASIS AND TO REJECT ANY OR ALL BIDS THAT ARE IN THE BEST INTEREST OF THE CALCASIEU PARISH SCHOOL BOARD.

17. PRICES.
UNLESS OTHERWISE SPECIFIED BY THE CALCASIEU PARISH SCHOOL BOARD IN THE SOLICITATION, BID PRICES MUST BE COMPLETE, INCLUDING TRANSPORTATION PREPAID TO OUR DOCK AT 3310 BROAD STREET, PRICES MUST BE FIRM FOR THE CONTRACTUAL PERIOD NOT TO EXCEED ONE CALENDAR YEAR. BIDS OTHER THAN F.O.B. DESTINATION MAY BE REJECTED. PRICES SHOULD BE QUOTED IN THE UNIT (EACH, BOX, CASE, ETC.) AS SPECIFIED IN THE SOLICITATION.

18. DELIVERIES.
BIDS MAY BE REJECTED IF THE DELIVERY TIME INDICATED IS LONGER THAN THAT SPECIFIED IN THE SOLICITATION AS INDICATED BY THE BIDDER.

19. TAXES.
VENDOR IS RESPONSIBLE FOR INCLUDING ALL APPLICABLE TAXES IN THE BID PRICE. AS A POLITICAL SUBDIVISION IN THE STATE OF LOUISIANA IN ACCORDANCE WITH STATUTE, THE CALCASIEU PARISH SCHOOL SYSTEM IS EXEMPT FROM ALL STATE AND LOCAL SALES AND USE TAXES.

20. NEW PRODUCTS.
UNLESS SPECIFICALLY CALLED FOR IN THE SOLICITATION, ALL PRODUCTS FOR PURCHASE MUST BE NEW, NEVER PREVIOUSLY USED, AND THE CURRENT MODEL AND/OR PACKAGING. NO REMANUFACTURED, DEMONSTRATOR, USED OR IRREGULAR PRODUCT WILL BE CONSIDERED FOR PURCHASE UNLESS OTHERWISE SPECIFIED IN THE SOLICITATION. THE MANUFACTURER'S STANDARD WARRANTY WILL APPLY UNLESS OTHERWISE SPECIFIED IN THE SOLICITATION.

21. CONTRACT RENEWALS.
UPON AGREEMENT OF THE CALCASIEU PARISH SCHOOL BOARD AND THE VENDOR, A TERM CONTRACT MAY BE EXTENDED FOR 2 ADDITIONAL 12-MONTH PERIODS AT THE SAME PRICES, TERMS AND CONDITIONS. IN SUCH CASES, THE TOTAL CONTRACT TERM CANNOT EXCEED 36 MONTHS.

VENDOR PRICE SUBMISSION SHEET

INVITATION TO BID

BID NUMBER: 2014-31

TIME: 10:00 AM

BIDDER:

Bliss Products and Services, Inc.

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OPEN DATE: 10/16/2013 @ 10:00 AM

LINE NO.	COMMODITY/SERVICE DESCRIPTION	QUANTITY FORM/TO	UNIT	UNIT PRICE	EXTENDED TOTAL
	Poured-In-Place Bonded Rubber Mulching	6247	SQ FT	\$ 10.38	\$ 64,843.86



Bliss Products and
Services, Inc
6831 S. Sweetwater
Rd.
Lithia Springs, GA
30122
(800) 248-2547
(770) 920-1915 Fax

Quote # **27419**
Sales Rep: Paul Webber
paul@blissproducts.com

**Calcasieu Parish
School System**

Date 09-20-2013

Project Surfacing at
Elementary Schools

Bill To

Calcasieu Parish School System
3310 Broad Street
Room 1300
Lake Charles, LA, 70615
T: (337) 217-4000

Ship To

Calcasieu Parish School System
3310 Broad Street
Room 1300
Lake Charles, LA, 70615

Contact

Joseph E. Feucht
Supervisor of Purchasing
Phone: (337) 217-4000

Approximate Ship Date

Ship Via

Terms

Net 30

Vendor	Part #	Description	Qty	Unit Price	Extended Price
OTS	PIP	6,247 sq. ft. of surfacing installed at 4 school locations *Price includes materials, freight and installation	6247	\$10.38	64,843.86

Sub Total \$64,843.86

Freight

Taxable Subtotal \$64,843.86

Tax 0.00

Financing as low as **\$1,504.38** / month may be available pending credit approval.

Grand Total \$64,843.86

Quote valid for 30 days unless otherwise noted.

Installation prices are based on truck access to the site and normal soil conditions. Any buried rock or debris may be cause for additional charges. Any Site preparation or demolition not specified above must be completed prior to installation of the equipment. Site restoration, unless otherwise noted, is not included. Please refer to your installation agreement for further details. Sales tax if applicable is not included. Sales tax exempt certificate will be required for exemption. All orders are subject to approval and acceptance by the manufacturer.

Complete Terms and Conditions can be found at BlissProducts.com/termsandconditions.html



Manufacturing & Supply, Inc.

MSDS *Material Safety Data Sheet*

MSDS Number BTR-1110

5.1.12

7 Pages

1.0 Product and Company Identification

Manufacturer:

OTS Manufacturing and Supply
293 Industrial Drive
Lexington, SC 29072

Contact: Ron Wilson

Telephone: (803) 957-3549
Fax: (803) 356-9713
Email: Ron@otscompany.com

Emergency Contact: INFOTRAC 800-535-5053

Product Name: BTR-1110
Revision Date: 5.1.12
MSDS Number: BTR 1110
Chemical Family: Aromatic Isocyanate prepolymer

Composition/Information on Ingredients

Ingredients:

Cas #	Chemical Name	Perc.
25322694	Polypropylene glycols	60-70 %
26447405	Benzene, 1,1'-methylenebis (isocyanate)	15-25%
101688	4,4 -Methylenediphenyl diisocyanate	10-20%
64742467	Distillates, petroleum, hydrotreated midd	4-10%

OSHA Regulatory Status: Xn Harmful

This MSDS Contains valuable information critical to the safe handling and proper use of this product. This MSDS should be retained and available for employees and other users of this product.

Hazards Identification

Route of Entry: Inhalation, eye and skin contact.

Target of Organs: Eyes; Respiratory System; Skin:

Inhalation: ACUTE EXPOSURE: MDI vapor or mist at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Individuals with a pre-existing, non-specific bronchial hyper-reactivity can respond to the concentrations below the TLV with similar symptoms as well as

asthma attack. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms (e.g., fever, chills) has also been reported. These symptoms can be delayed up to several hours after exposure.

CHRONIC EXPOSURE: As a result of previous repeated overexposures or a single large dose, certain individuals develop isocyanate sensitization (chemical asthma) which will cause them to react to a later isocyanate exposure at levels well below the TLV. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthma attack, could be immediate or delayed (up to several hours after exposure). Similar to many non-specific asthmatic responses, there are reports that once sensitized, an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Overexposure to isocyanates has also been reported to cause lung damage (including decrease in lung function) which may be permanent. Sensitization can either be temporary or permanent.

Skin Contact:

Acute Exposure: Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.

Chronic Exposure: Prolonged contact can cause reddening, swelling, rash, scaling blistering, and in some cases, skin sensitization. Individuals who have developed a skin sensitization can develop these symptoms as a result of contact with very small amounts of liquid material or as a result of exposure to vapor.

Eye Contact:

ACUTE EXPOSURE: Liquids, aerosols or vapors are irritating and can cause tearing, reddening, and swelling. If left untreated, corneal damage can occur and injury is slow to heal. However, damage is usually reversible.

CHRONIC EXPOSURE: None Found

Ingestion:

ACUTE EXPOSURE: Can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

CHRONIC EXPOSURE: None found

2.0 First Aid Measures

Inhalation:

Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Consult your physician should this occur.

Skin Contact:

Remove contaminated clothing. Wash affected skin thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures get under safety shower after removing clothing, then get medical attention. For lesser exposure, seek medical attention if irritation develops or persists after the area is washed.

Eye Contact:

Flush with copious amounts of lukewarm water for at least 15 minutes, holding eyelids open at all times. Refer individual to physician or ophthalmologist for immediate follow-up.

MSDS Number BTR-1110

Ingestion:

DO NOT INDUCE VOMITING. Give 1 to 2 cups of milk or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Get prompt, qualified medical attention.

3.0 Fire Fighting Measures

Flash Point: 388 DEG F (198 DEG C)
Flash Point Method: DIN 51758

Dry chemical (e.g. monoammonium phosphate, potassium sulfate, and potassium chloride), carbon dioxide, high expansion (proteinic) chemical foam, water spray for large fires. Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by fire fighters. During a fire, vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. At temperatures greater than 400 DEG F (204 DEG C), this product can be polymerized and decompose which can cause pressure build-up in closed containers. Explosive rupture is possible. Therefore, use cold water to cool fire-exposed containers.

4.0 Accidental Release Measures

Cover the spill with sawdust, vermiculite, Fuller's earth or other absorbent material. Pour decontamination solution over spill area and allow to react for at least 10 minutes. Collect material in open containers and add further amounts of decontamination solution. Remove containers to safe place, cover loosely and allow to stand for 24 to 48 hours. Wash down area with decontamination solutions. Decontamination solutions: non-ionic surfactant Union Carbide's Tergitol TMN-10 (20%) and water (80%); concentrated ammonia (3-8%), detergent (2%) and water (90-95%). Respiratory protection is recommended during spill clean-up.

5.00 Handling and Storage

Handling Precautions: Avoid breathing vapors or mist; Avoid contact with eyes, skin or clothing; Do not expose containers to open flame, excessive heat, or direct sunlight.

Storage Requirements: Storage temperature: Minimum 40 DEG F (5 DEG C) / Maximum 150 DEG (66 DEG C). Store in tightly closed containers to prevent moisture contamination. This product reacts slowly with water to form CO₂ gas. This gas can cause sealed containers to expand and possibly rupture. Do not reseal if contamination is suspected.
Store in cool/dry area.

6.0 Exposure Controls/Personal Protection

Engineering Controls: Educate and train employees in safe use of this product. Follow all label instructions. Local exhaust should be used to maintain levels below the TLV whenever this product is processed, heated or spray applied. For spray applications, an air-supplied respirator must be worn. All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94).

Protective Equipment: An air-supplied respirator must be worn during spray applications, during long-term (over 1 hour) exposures when the product is heated or in environments of high concentrations near the TLV, an air-purifying respirator equipped with organic cartridges or canisters and dust filters can be used. However, due to the poor warning properties of this product, proper fit and timely replacement of filter elements must be ensured. Observe OSHA regulations for respirator use (29CFR 1910.134).
Chemical resistant gloves (butyl rubber, nitrile rubber). Cover as much of the exposed area as possible with appropriate clothing. If skin creams are used, keep the area covered only by the cream to a minimum.
Liquid chemical goggles or full-face shield. Contact lenses should not be worn.
ADDITIONAL PROTECTIVE MEASURES: Clean, fresh running water should be available.

Exposure Guidelines: Exposure Limits:

USA OSHA (TWA5/PEL):	0.02 ppm
NIOSH (TWA):	0.005ppm
IDLH:	75mg/m3
NIOSH (C 10 min):	0.02 ppm

7.0 Physical and Chemical Properties

Appearance:	Clear Brown/Amber Liquid	Boiling Point:	Not established
Physical State:	Liquid	Freezing/Melting Pt:	Not established
Odor:	Slightly musty	Solubility:	Reacts slowly with water to liberate CO ₂ gas.
pH:	N.A.		
Vapor Pressure:	Less than 10-5 mmHg @ 77 DEG F (25 DEG C) for MDI	Spec Grav./Density:	1.08 @ 68 DEG F (20 DEG C)
Vapor Density:	8.5 (MDI)		
VOC:	0 g/L		
Bulk Density:	9.0 lbs/gal		

8.0 Stability and Reactivity

Stability:	Product is stable under normal conditions.
Conditions to avoid:	Temperatures over 400 DEG F (204 DEG C).
Materials to avoid (incompatibility):	Water, amines, strong bases, alcohols.
Hazardous Decomposition products:	By Fire and High heat; hydrogen cyanide; Carbon dioxide (CO ₂) Carbon monoxide (CO), oxides of nitrogen (NO _x), dense black smoke, Isocyanate, Isocyanic Acid, Other undetermined compounds.

Hazardous Polymerization:

May occur if in contact with moisture or other materials which react with isocyanates. May occur at temperatures over 400 DEG F (204 DEG C)

9.0 Toxicological Information

Acute Eye Effects: Liquid, aerosols or vapors are irritating and can cause tearing, reddening and swelling. If left untreated, cornea damage can occur and injury is slow to heal. However, damage is usually reversible. (See Section VI for treatment).

Acute Skin Effects: Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.

Acute Inhalation Effects: Vapors or mist at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat and lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Individuals with a pre-existing, non-specific bronchial hyper reactivity can respond to concentrations below the TLV with similar symptoms as well as asthma attack. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in the lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu like symptoms (e.g. fever, chills) has also been reported. These symptoms can be delayed up to several hours after exposure.

Acute Ingestion Effects: Can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

Chronic Eye Effects: None found

Chronic Skin Effects: Prolonged contact can cause reddening, swelling, rash, scaling, blistering, and in some cases, skin sensitization. Individuals who have developed a skin sensitization can develop these symptoms as a result of contact with very small amounts of liquid material or as a result of exposure to vapor.

Chronic Inhalation Effects: As a result of previous repeated overexposures or a single large dose, certain individuals develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the TLV. These symptoms which can include chest tightness, wheezing, coughing, shortness of breath or asthma attack, could be immediate or delayed (up to several hours after exposure). Similar to many non-specific asthmatic responses, there are reports that once sensitized, an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Overexposure to isocyanates has also been reported to cause lung damage (including decrease in lung function) which may be permanent. Sensitization can either be temporary or permanent.

10.0 Disposal Considerations

Waste and container disposal must be in accordance with federal, state, and local environmental control regulations. Incineration is the preferred method. Empty containers must be handled with care due to product residue. Decontaminate prior to disposal. DO NOT HEAT OR CUT EMPTY CONTAINERS WITH ELECTRIC OR GAS TORCH.

11.0 Transport Information

DOT (HM-181; DOMESTIC SURFACE)

UN/NA NUMBER:	none
D.O.T. SHIPPING NAME:	Aromatic Isocyanate Prepolymer
D.O.T. HAZARD CLASS:	NON REGULATED
PACKAGING GROUP:	none
D.O.T. LABEL	none
D.O.T. PLACARD	none

ICAO/IATA (AIR)

UN NUMBER:	none
PROPER SHIPPING NAME:	Aromatic Isocyanate Prepolymer
HAZARD CLASS DIVISION NUMBER:	NON REGULATED
SUBSIDIARY RISK:	none
PACKING GROUP:	none
HAZARD LABEL(S):	none
RADIOACTIVE?:	Non-radioactive
PASSENGER AIR-MAXIMUM QUANTITY:	none
PACKING INSTRUCTION NUMBER:	none
CARGO AIR - MAXIMUM QUANTITY:	none
PACKING INSTRUCTION NUMBER:	none

IMO/IMDG CODE (OCEAN)

UN NUMBER:	none
PROPER SHIPPING NAME:	Aromatic Isocyanate Prepolymer
HAZARD CLASS DIVISION NUMBER:	NON REGULATED
PACKING GROUP:	none
HAZARD LABEL(S):	none
HAZARD PLACARD (S):	none

12.0 Regulatory Information

COMPONENT / (CAS/PERC) / CODES

*4,4'-Methylenediphenyl diisocyanate (101688 10-20%) CERCLA, HAP, MASS, NJHS, OSHAWAC, PA, SARA 313, TXAIR

TSCA: All components in this mixture are included in the TSCA Inventory.

REGULATORY KEY DESCRIPTIONS

CERCLA = Superfund clean up substance
HAP = Hazard Air Pollutants
MASS = MA Massachusetts Hazardous Substances List
NJHS = NJ Right - to - Know Hazardous Substances

MSDS Number BTR-1110

OSHAWAC = OSHA Workplace Air Contaminants

PA = PA Right-To - Know List of Hazardous Substances

SARA313 = Sara 313 Title III Toxic Chemicals

TXAIR = TX Air Contaminants with Health Effects Screening Level

13.0 Other Information

OTS Company believes the information herein to be true, accurate and reliable and is given in good faith. The company cannot, however be held responsible for any errors or omissions and will not accept responsibility for any use which may be made of the information. Properties shown are typical and do not imply a specification. This information is based on practical experience and laboratory testing, successful use depends on the conditions applicable at the time and the equipment used. Users must ensure by their own testing that the products perform adequately in each situation. Since conditions and disposal are beyond our control, OTS Company, Inc. disclaims any liability incurred in connection with the use of our products; no warranty, express or implied, is given nor is any freedom from any patent or use of trademark owned by OTS or others implied.

OTS Manufacturing and Supply, Inc.

293 Industrial Drive

Lexington, SC 29072

Telephone: (803) 957-3549

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MSDS *Material Safety Data Sheet*

MSDS Number BTR-1119

5.1.12

7 Pages

1.0 Product and Company Identification

Manufacturer:
OTS Manufacturing and Supply, Inc.
293 Industrial Drive
Lexington, SC 29072

Contact: Ron Wilson
Telephone: (803) 957-3549
Fax: (803) 356-9713
Email: Ron@otscompany.com

Emergency Contact: INFOTRAC 800-535-5053

Product Name: BTR-1119
Revision Date: 5.1.12
MSDS Number: BTR 1119
Chemical Family: Aromatic Isocyanate prepolymer

2.0 Hazards Identification

Route of Entry: Inhalation, eye and skin contact.
Target of Organs: Eyes; Respiratory System; Skin:
Inhalation: ACUTE EXPOSURE: MDI vapor or mist at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Individuals with a pre-existing, non-specific bronchial hyper-reactivity can respond to the concentrations below the TLV with similar symptoms as well as asthma attack. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms (e.g., fever, chills) has also been reported. These symptoms can be delayed up to several hours after exposure.
CHRONIC EXPOSURE: As a result of previous repeated overexposures or a single large dose, certain individuals develop isocyanate sensitization (chemical asthma) which will cause them to react to a later isocyanate exposure at levels well below the TLV. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthma attack, could be immediate or delayed (up to several hours after exposure). Similar to many non-specific asthmatic responses, there are reports that once sensitized, an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Overexposure to isocyanates has also been reported to cause lung

damage (including decrease in lung function) which may be permanent. Sensitization can either be temporary or permanent.

Skin Contact: Acute Exposure: Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.
Chronic Exposure: Prolonged contact can cause reddening, swelling, rash, scaling blistering, and in some cases, skin sensitization. Individuals who have developed a skin sensitization can develop these symptoms as a result of contact with very small amounts of liquid material or as a result of exposure to vapor.

Eye Contact: ACUTE EXPOSURE: Liquids, aerosols or vapors are irritating and can cause tearing, reddening, and swelling. If left untreated, corneal damage can occur and injury is slow to heal. However, damage is usually reversible.
CHRONIC EXPOSURE: None Found

Ingestion: ACUTE EXPOSURE: Can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.
CHRONIC EXPOSURE: None found

3.0 Composition/Information on Ingredients

Ingredients:

CAS #	Chemical Name	Percent
25322694	Polypropylene glycols	60 – 70%
101688	4,4 –Methylenediphenyl diisocyanate	10 – 20%
64742467	Distillates, petroleum, hydrotreated midd	4-10%
8001227	Soybean oil	1-2%

OSHA Regulatory Status: Xn Harmful

This MSDS Contains valuable information critical to the safe handling and proper use of this product. This MSDS should be retained and available for employees and other users of this product.

4.0 First Aid Measures

Inhalation: Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Consult your physician should this occur.

Skin Contact: Remove contaminated clothing. Wash affected skin thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures get under safety shower after removing clothing, then get medical attention. For lesser exposure, seek medical attention if irritation develops or persists after the area is washed.

Eye Contact: Flush with copious amounts of lukewarm water for at least 15 minutes, holding eyelids open at all times. Refer individual to physician or ophthalmologist for immediate follow-up.

Ingestion: DO NOT INDUCE VOMITING. Give 1 to 2 cups of milk or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Get prompt, qualified medical attention.

5.0 Fire Fighting Measures

Flash Point: 388 DEG F (198 DEG C)
Flash Point Method: DIN 51758

Dry chemical (e.g. monoammonium phosphate, potassium sulfate, and potassium chloride), carbon dioxide, high expansion (proteinic) chemical foam, water spray for large fires. Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by fire fighters. During a fire, vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. At temperatures greater than 400 DEG F (204 DEG C), this product can be polymerized and decompose which can cause pressure build-up in closed containers. Explosive rupture is possible. Therefore, use cold water to cool fire-exposed containers.

6.0 Accidental Release Measures

Cover the spill with sawdust, vermiculite, Fuller's earth or other absorbent material. Pour decontamination solution over spill area and allow to react for at least 10 minutes. Collect material in open containers and add further amounts of decontamination solution. Remove containers to safe place, cover loosely and allow to stand for 24 to 48 hours. Wash down area with decontamination solutions. Decontamination solutions: non-ionic surfactant Union Carbide's Tergitol TMN-10 (20%) and water (80%); concentrated ammonia (3-8%), detergent (2%) and water (90-95%). Respiratory protection is recommended during spill clean-up.

7.0 Handling and Storage

Handling Precautions: Avoid breathing vapors or mist; Avoid contact with eyes, skin or clothing; Do not expose containers to open flame, excessive heat, or direct sunlight.

Storage Requirements: Storage temperature: Minimum 40 DEG F (5 DEG C) / Maximum 150 DEG (66 DEG C). Store in tightly closed containers to prevent moisture contamination. This product reacts slowly with water to form CO₂ gas. This gas can cause sealed containers to expand and possibly rupture. Do not reseal if contamination is suspected.
Store in cool/dry area.

8.0 Exposure Controls/Personal Protection

Engineering Controls: Educate and train employees in safe use of this product. Follow all label instructions. Local exhaust should be used to maintain levels below the TLV whenever this product is processed, heated or spray applied. For spray applications, an air-supplied respirator must be worn. All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94).

Protective Equipment: An air-supplied respirator must be worn during spray applications, during long-term (over 1 hour) exposures when the product is heated or in environments of high concentrations near the TLV, an air-purifying respirator equipped with organic cartridges or canisters and dust filters can be used. However, due to the poor warning properties of this product, proper fit and timely replacement of filter elements must be ensured. Observe OSHA regulations for respirator use (29CFR 1910.134).

Chemical resistant gloves (butyl rubber, nitrile rubber). Cover as much of the exposed area as possible with appropriate clothing. If skin creams are used, keep the area covered only by the cream to a minimum.

Liquid chemical goggles or full-face shield. Contact lenses should not be worn.

ADDITIONAL PROTECTIVE MEASURES: Clean, fresh running water should be available.

Exposure Guidelines: Exposure Limits:

USA OSHA (TWA5/PEL):	0.02 ppm
NIOSH (TWA):	0.005ppm
IDLH:	75mg/m3
NIOSH (C 10 min):	0.02 ppm

9.0 Physical and Chemical Properties

Appearance: Clear Brown/Amber Liquid
Physical State: Liquid
Odor: Slightly musty
pH: N.A.

Boiling Point: Not established
Freezing/Melting Pt: Not established
Solubility: Reacts slowly with water to liberate CO₂ gas.

Vapor Pressure: Less than 10-5 mmHg @ 77 DEGF
(25 DEG C) for MDI

Spec Grav./Density: 1.08 @ 68 DEG F (20 DEG C)

Vapor Density: 8.5 (MDI)

VOC: 0 g/L

Bulk Density: 9.0 lbs/gal

10.0 Stability and Reactivity

Stability: Product is stable under normal conditions.

Conditions to avoid: Temperatures over 400 DEG F (204 DEG C).

Materials to avoid (incompatibility): Water, amines, strong bases, alcohols.

Hazardous Decomposition products: By Fire and High heat; hydrogen cyanide; Carbon dioxide (CO₂) Carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke, Isocyanate, Isocyanic Acid, Other undetermined compounds.

Hazardous Polymerization:

May occur if in contact with moisture or other materials which react with isocyanates. May occur at temperatures over 400 DEG F (204 DEG C)

11.0 Toxicological Information

Acute Eye Effects: Liquid, aerosols or vapors are irritating and can cause tearing, reddening and swelling. If left untreated, cornea damage can occur and injury is slow to heal. However, damage is usually reversible. (See Section VI for treatment).

Acute Skin Effects: Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.

Acute Inhalation Effects: Vapors or mist at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat and lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Individuals with a pre-existing, non-specific bronchial hyper-reactivity can respond to concentrations below the TLV with similar symptoms as well as asthma attack. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in the lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu like symptoms (e.g. fever, chills) have also been reported. These symptoms can be delayed up to several hours after exposure.

Acute Ingestion Effects: Can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

Chronic Eye Effects: None found

Chronic Skin Effects: Prolonged contact can cause reddening, swelling, rash, scaling, blistering, and in some cases, skin sensitization. Individuals who have developed a skin sensitization can develop these symptoms as a result of contact with very small amounts of liquid material or as a result of exposure to vapor.

Chronic Inhalation Effects: As a result of previous repeated overexposures or a single large dose, certain individuals develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the TLV. These symptoms which can include chest tightness, wheezing, coughing, shortness of breath or asthma attack, could be immediate or delayed (up to several hours after exposure). Similar to many non-specific asthmatic responses, there are reports that once sensitized, an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Overexposure to isocyanates has also been reported to cause lung damage (including decrease in lung function) which may be permanent. Sensitization can either be temporary or permanent.

12.0 Ecological Information

Ecological Data for 2,4 –MDI:

Biodegradation: 0%, exposure time 28 days

Bioaccumulation: Rainbow Trout, Exposure time: 112 days, , 1BCF. Does not accumulate

Acute and Prolonged Toxicity to fish: LCO: > 1000mg/l (zebra fish (Brachydanio rerio), 96 hours). LCO: > 3,000 mg/l (Killifish (Oryzias latipes), 96 h)

Acute Toxicity to Aquatic Invertebrates: EC50> 1,000 mg/l (Water flea (Daphnia magna), 24 hrs)

Toxicity to Aquatic Plants: NOEC: 1,640 mg/l, End Point: growth (Green algae (Scenedesmus subpictus), 72 hr)

Toxicity to Microorganisms: EC50: > 100 mg/l, (activated sludge microorganisms, 3 hr)

Additional Ecotoxicological Remarks:

Ecological Data for 4,4 MDI:

Acute and Prolonged Toxicity to Fish: LC50: > 500 mg/l (zebra fish (Brachydanio rerio), 24 hr)

Acute Toxicity to Aquatic Invertebrates: EC50: > 500 mg/l (water flea (Daphnia magna), 24 hr)

13.0 Disposal Considerations

Waste and container disposal must be in accordance with federal, state, and local environmental control regulations. Incineration is the preferred method. Empty containers must be handled with care due to product residue. Decontaminate prior to disposal. DO NOT HEAT OR CUT EMPTY CONTAINERS WITH ELECTRIC OR GAS TORCH.

14.0 Transport Information

DOT (HM-181; DOMESTIC SURFACE)

UN/NA NUMBER:	none
D.O.T. SHIPPING NAME:	Aromatic Isocyanate Prepolymer
D.O.T. HAZARD CLASS:	NON REGULATED
PACKAGING GROUP:	none
D.O.T. LABEL	none
D.O.T. PLACARD	none

ICAO/IATA (AIR)

UN NUMBER:	none
PROPER SHIPPING NAME:	Aromatic Isocyanate Prepolymer
HAZARD CLASS DIVISION NUMBER:	NON REGULATED
SUBSIDIARY RISK:	none
PACKING GROUP:	none
HAZARD LABEL(S):	none
RADIOACTIVE?:	Non-radioactive
PASSENGER AIR-MAXIMUM QUANTITY:	none
PACKING INSTRUCTION NUMBER:	none
CARGO AIR - MAXIMUM QUANTITY:	none
PACKING INSTRUCTION NUMBER:	none

IMO/IMDG CODE (OCEAN)

UN NUMBER:	none
PROPER SHIPPING NAME:	Aromatic Isocyanate Prepolymer
HAZARD CLASS DIVISION NUMBER:	NON REGULATED
PACKING GROUP:	none
HAZARD LABEL(S):	none
HAZARD PLACARD (S):	none

15.0 Regulatory Information

COMPONENT / (CAS/PERC) / CODES

*4,4'-Methylenediphenyl diisocyanate (101688 10-20%) CERCLA, HAP, MASS, NJHS, OSHAWAC, PA, SARA 313, TXAIR

TSCA: All components in this mixture are included in the TSCA Inventory.

*Soybean Oil (8001227 1-2%) PA, TSCA

REGULATORY KEY DESCRIPTIONS

CERCLA = Superfund clean up substance

HAP = Hazard Air Pollutants

MASS = MA Massachusetts Hazardous Substances List

NJHS = NJ Right - to - Know Hazardous Substances

OSHA WAC = OSHA Workplace Air Contaminants

PA = PA Right-To - Know List of Hazardous Substances

SARA313 = Sara 313 Title III Toxic Chemicals

TXAIR = TX Air Contaminants with Health Effects Screening Level

16.0 Other Information

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OTS Manufacturing and Supply, Inc.

293 Industrial Drive
Lexington, SC 29072

Telephone: (803) 957-3549

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MSDS *Material Safety Data Sheet*

5.1.12

3 Pages

Product and Company Identification

Manufacturer:
OTS Manufacturing and Supply
293 Industrial Drive
Lexington, SC 29072

Contact: Ron Wilson
Telephone: (803) 957-3549
Fax: (803) 356-9713
Email: ron@otscompany.com

Product Name: SBR Rubber Granules / Rubber Shreds / Rubber Powder
Revision Date: 5.1.12
MSDS Number: SBR Rubber

Composition/Information on Ingredients

Component: Vulcanized, polymeric basis: NR – SBR – BR – IIR/XIIR

Hazards Identification

This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

First Aid Measures

By inhalation: Seek fresh air.

By ingestion: Wash out mouth thoroughly and drink 1-2 glasses of water in small sips. Seek medical advice in case of persistent discomfort.

By skin contact: Remove contaminated clothing. Wash skin with soap and water. Seek medical advice in case of persistent discomfort.

By eye contact: Flush with water (preferably using eyewash equipment) until irritation subsides. Seek medical advice if symptoms persist.

Other information: Bring the material safety data sheet or label when seeking medical advice

Fire Fighting Measures

Extinguish with powder, foam, carbon dioxide or water mist. Do not use a jet of water, as it may spread the fire. Use water or water mist to cool non-ignited inventory. Move containers from danger area if it can be done without risk. Avoid inhalation of vapor and smoke gases – seek fresh air.

Accidental Release Measures

Use the same personal protective equipment as stated in section 8. Sweep up/collect spills for possible reuse or transfer to suitable waste containers. See section 13 for instructions on disposal.

Handling and Storage

Handling Precautions: See section 8 for information about precautions for use and personal protective equipment.

Storage Requirements: Store materials in closed, original packaging. Open containers should be store in dry areas. Protect against sunlight.

Exposure Controls/Personal Protection

Engineering controls/general hygienic Considerations: Use the product under well-ventilated conditions. Running water and eye wash equipment should be available. Wash hands before breaks, before using restroom facilities, and at the end of work.

Respiratory Protection: In case of insufficient ventilation, wear an air-purifying respirator with filter P2.

Skin protection: Plastic or rubber gloves recommended.

Eye/Face Protection: Wear safety goggles if there is a risk of dust contact with eyes.

Occupational exposure limits: Contains no substances subject to disclosure requirements.

Physical and Chemical Properties

State: Powder/grains	Ignition Temperature: 752 °F
Color: Black	Auto ignition Temperature: N/A
Odor: Typically rubber	Solubility in water: N/A
Density: 1, 10-1, 20 g/ml	Octanole/water partition coefficient: log Pow: N/A
pH (concentrate): °F N/A	Flash point: °F N/A
Melting point: °F N/A	Flammability: °F N/A
Boiling point: °F N/A	Explosion limits: -vol% N/A
Vapor pressure: N/A	

Stability and Reactivity

The product is stable when used in accordance with the supplier's directions.

Toxicological Information

Immediate effects

Inhalation: Inhalation of dust may cause irritation to the upper airways.

Ingestion: Ingestion may cause discomfort.

Skin contact: May cause slight irritation.

Eye contact: May cause eye irritation.

Long-term effects: Not known.

Ecological Information

Do not discharge large quantities of concentrated spills and residue into drains.

Disposal Considerations

If this product as supplied becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act(RCRA) 40 CFR 261.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Transport Information

This product is not covered by the rules for transport of dangerous goods by road and sea according to DOT, ADR and IMDG.

Regulatory Information

No labeling according to international regulators required.

Other Information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

NFPA ratings (Scale 0-4)

Health = 0

Flammability =1

Reactivity = 0

HMIS 111 ratings (Scale 0-4)

Health hazard = 0

Flammability =1

Physical hazard =0

End of MSDS



MSDS *Material Safety Data Sheet*

5.1.12

2 Pages

Product and Company Identification

Manufacturer:

OTS Manufacturing and Supply
293 Industrial Drive
Lexington, SC 29072

Contact: Ron Wilson

Telephone: (803) 957-3549
Fax: (803) 356-9713
Email: ron@otscompany.com

Product Name: EPDM-Rubber Granules
Revision Date: 5.1.12
MSDS Number: EPDM-Granules

Composition/Information on Ingredients

Chemical Characterization: Rubber Polymer Composition

Base Polymer: EPDM (Ethylene-Propylene-Diene-Monomer)

Hazards Identification

No hazards known according to current level of knowledge.

First Aid Measures

No special first aid measures required.

Fire Fighting Measures

Extinguishing Media: All extinguishing media can be used.

Special Hazards: Flammable. In the event of fire, toxic gases or vapors may be formed.
Wear a self-contained breathing apparatus in the danger area.

Accidental Release Measures

Personal Precautions: No special precautions needed.

Methods for cleaning and removal: Remove mechanically.

Handling and Storage

Handling Precautions: No special handling precautions needed.

Storage Requirements: Store materials in closed, original packaging. Open containers should be stored in dry areas.

Fire Precaution Measures: No special fire precautions needed. Keep away from ignition sources.

Exposure Controls/Personal Protection

Hygienic Measures: No special measures required.

Respiratory Protection: No special measures required.

Eye/Face Protection: Safety glasses when in danger of flying granules. General safety and protection requirements are dependant on local safety and accident prevention guidelines and regulations.

Physical and Chemical Properties

Density: Approx. 1.5 – 1.6 g/cm

Form: Granules – Various colors and black

Odor: Mild characteristic Odor

Solubility in Water: Insoluble 68 degrees F (20 degrees C)

Stability and Reactivity

Stability: No decomposition, if used for intended purpose.

Hazardous Reactions: No hazardous reactions known.

Toxicological Information

No toxic effects per current level of knowledge. Material is not suitable for human ingestion. The granules contain no lead or phthalates.

Ecological Information

Water hazards: not water hazardous.

Disposal Considerations

To be disposed in accordance with local, state or federal regulations.

Transport Information

Not classified as hazardous.

Regulatory Information

No labeling according to international regulators required.

Other Information

None.

End of MSDS



TECHNICAL BULLETIN #1

RESILIENT PLAYGROUND SURFACING SYSTEMS

Poured in Place Playground Surfacing

SHOCK ATTENUATING PLAYGROUND SURFACINGS have gained wide acceptance throughout the world as the single most important contribution to increased recreational safety on and around play apparatus. The shock absorption capability of a surface is measured by ASTM 1292 and should be installed to the appropriate depth as recommended by the Consumer Product Safety Commission. Specifiers and installers of playground equipment and surfacings should be thoroughly familiar with both ASTM and CPSC technical standards.

Playground surfacings that are resilient, shock attenuating, seamless, and durable can be laid in a multitude of custom colors and patterns. These surfaces are known by various names: CIP (Cast-in-Place), PIP (Pour-in-Place), Wet Pour, In-situ, and other similar terms. All these terms refer to a mixture of graded, sized rubber particles which are combined with the appropriate BTR™ polyurethane binder in a mixer, and cast "wet" upon a stable subsurface with hand trowels. When formulated and applied with precision and care, the result is a matrix of rubber particles and voids that will cure to a resilient, porous and durable surface.

The term "seamless" differentiates a poured surface from a tile surface but it is a relative term, as seams are sometimes necessary. Working day-seams are used for large surface installations, pattern inlays, and when weather requires curtailing of work unexpectedly. Working seams should be clean, well knitted and flush. Seams are obviously necessary when different colored patterns or designs are introduced. Seams, whether required during initial installation or for repairs, require detailed attention to assure strong bond and aesthetic quality.

The resilience or shock absorbing capability of the surface is dependent upon several factors, the most common being the size of the rubber particles, exceptional elongation and strength of the binder, the thickness of the system, and the troweling (compaction) technique of the installer. Mix formulations will vary slightly from one installer to another, as each will be based upon the available preferred rubber stock sieve size and the desired characteristics of the finished surface appearance. The surface usually consists of a coarse, thick SBR rubber cushion layer that is topped with a firm, granulated EPDM rubber wearing course. Installer variations may occur; therefore, the end user should always require that the installing contractor provide a certified ASTM test report for a sample produced with the materials used for that particular installation.

While most PIP surfaces are designed to be porous, the system can also be modified to be non-porous. Related information is available in other Technical Bulletins and Technical Data Sheets.

PROCEDURE FOR INSTALLATION OF A 'PIP' SURFACE

General:

PIP surfaces can be installed over any stable and well drained subsurface including concrete, asphalt, or compacted, crushed stone. Concrete or asphalt is the most stable, and must be fully cured prior to overlay of a rubberized surface. A crushed stone base will be subject to freeze-thaw movements, and therefore must be evenly and firmly compacted, and underdrained. If crushed stone is used as a base, a light-duty geotextile fabric overlay is recommended.

Inspect the rubber for size and gradation. All rubber must be dry. Do not accept rubber that is not uniform, contains metal or fiber fragments, or excessive dust.

Check surface planarity and compaction. Set screeds and reference points to control the desired thickness of the surface to be installed. Thoroughly mix the proper quantities of rubber and binder for the cushion course using a ribbon or paddle-type blade (mortar) mixer until the rubber is uniformly coated with binder. The mixing process takes one to three minutes, depending on the mixer, batch size, and temperature. Over-mixing as well as under-mixing can result in installation failures. If laid on concrete or asphalt, prime the area to assure a strong bond. Deposit and evenly spread the mixture. Finish the top of the cushion layer to the exact thickness required with the aid of a screed and hand trowel, being careful not to over-compact. The cushion course should exhibit a uniform density or firmness after troweling to an even and smooth surface. The type of binder selected depends on temperature and the presence of moisture in the air for proper curing; cure time is also based on the prevailing weather conditions.

Wearing Course:

Usually the wearing course is laid as soon as the cushion course has cured. Ensure that the cushion course is clean and fresh - if not, a hand applied primer is recommended to provide an enhanced bond between the cushion and wearing course layers. Do not install a wearing course surface when temperatures will radically vary or fall below freezing during the cure cycle. Rapid drops in temperature during the curing process may cause contraction of the surface, resulting in cracking.

Apply a primer along the perimeter edge of the pad to assure a strong bond between all surfaces. It is recommended that primer is also used on the top of the base course under swing or other high impact areas.

Plan the work so as to position a probable day-seam in the "least objectionable" location, such as under the equipment. Installing a seam is a critical work item that takes special attention. If a seam is required, prime all cut and previously laid edges or special shapes or graphics that may be inlaid.

Deposit and evenly spread the mixture along a screed which controls depth. Carefully trowel the material to a uniformly compacted density and thickness. Handwork the seams between the working rows to form a tight knit surface without raised or uneven areas. Hand finishing should take place quickly after spreading, as once the material begins to set, overworking can cause weakness in the wearing course and textural differences in the surface. In addition to screeding and hand troweling, large areas may also be finish rolled.

Curing of the Surface:

The CIP surface must be protected until fully cured. The curing time will depend upon the prevailing weather, however, the process may be accelerated once a partial cure has been achieved.

Experienced installers trained in accelerated curing techniques will sometimes apply a light water mist to the surface to speed the cure.

Normally, a play surface may be walked upon without damage within 36 hours after installation, but this depends on temperature and the presence of moisture. Walking upon or using a surface before the full cure is reached may result in cracking which might not be evident for weeks after installation. Be sure to ask for the written recommendation of the installer who is more familiar with his particular installation and prevailing weather conditions that would affect the curing process.

GUIDELINE MIX FORMULATIONS

RAW MATERIAL REQUIREMENTS FOR APPROXIMATELY ONE (1) SQUARE FOOT OF VARIOUS DEPTHS OF PIP SURFACING. ACTUAL REQUIREMENTS MAY VARY BASED ON THE BLEND OF MATERIALS UTILIZED, EDGING DETAILS, GRANULE DISTRIBUTION, PRIMING, AND INSTALLATION TECHNIQUES. CRITICAL FALL HEIGHTS ARE APPROXIMATE - CHECK INSTALLER'S TEST REPORTS. THIS IS A GUIDELINE ONLY, BASED ON INDUSTRY AVERAGES.

<u>Total Surface Thickness</u> (inches)	<u>Critical Fall Height</u> (feet)	<u>Cushion Course</u>		<u>1/2" Wearing Course</u>	
		<u>SBR Rubber</u> (pounds)	<u>OTS BTR™ Binder</u> (pounds)	<u>EPDM Rubber</u> (pounds)	<u>OTS BTR™ Binder</u> (pounds)
1.75"	4'	2.8	0.42	2.3	0.46
2.00"	5'	3.5	0.52	2.3	0.46
2.50"	6'	4.5	0.67	2.3	0.46
3.25"	7'	6.3	0.94	2.3	0.46
3.75"	9'	7.3	1.09	2.3	0.46

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OTS Manufacturing and Supply, Inc.
293 Industrial Drive
Lexington, SC 29072

Telephone: (803) 957-3549

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