



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels, Jr.

Governor

Thomas W. Easterly

Commissioner

100 North Senate Avenue

Indianapolis, Indiana 46204

(317) 232-8603

Toll Free (800) 451-6027

www.idem.IN.gov

August 8, 2012

VIA EMAIL

Mr. Joseph Russ
NSG Group
1001 North Hurricane Street
Franklin, Indiana 46131-1440

Re: Inspection Summary Letter
NSG Group (formerly Pilkington North)
IND006414783
Franklin, Johnson County

Dear Mr. Russ:

On 7/12/2012, a representative of the Indiana Department of Environmental Management, Office of Land Quality, conducted an inspection of NSG Group (formerly Pilkington North), located at 1001 North Hurricane Street, Franklin, IN. This inspection was conducted pursuant to IC 13-14-2-2. For your information, and in accordance with IC 13-14-5, a summary of the inspection is provided below:

Type of Inspection:	Compliance Evaluation Inspection
Results of Inspection:	No Violation(s) Discovered (The facility appears to currently function as a Conditionally Exempt Small Quantity Generator (CESQG) of hazardous waste.)

Since the ownership and name of your company has changed since your last notification of hazardous waste activity, please update IDEM's records by indicating the appropriate changes on the attached Hazardous Waste Handler ID Form and returning this form to the address at the bottom of the second page of the form.

Please direct any questions about the inspection to me at (317) 234-6935. Questions relating to the notification of hazardous waste activity may be directed to Mr. Nick Staller at (317) 234-3478.

Sincerely,

Lee Parsons
Hazardous Waste Compliance Section
Compliance and Response Branch

Enclosure

cc: Johnson County Health Department
Mr. Robert Horner



**INDUSTRIAL/HAZARDOUS
WASTE INSPECTION REPORT**
INDIANA DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT

Inspector's Name:	Lee Parsons
Others Present	
Date:	Thursday, July 12, 2012
Time In:	9:00 AM
Time Out:	11:50 AM
Inspection Type	Compliance Evaluation Inspection

General Information

Facility Information

Facility Name	NSG Group (Formerly Pilkington North)
Facility Location	1001 North Hurricane Street Franklin, IN 46131-1440 Johnson County
Facility Mailing Information	Same Address as Facility
Facility Contact	Robert Horner 317-401-0010 robert.horner@nsg.com
Primary Facility Contact During Inspection	Joseph Russ Process Improver 317-401-0041 joseph.russ@nsg.com
Other Facility Contact(s) During Inspection	

Facility ID

EPA ID Number	IND006414783	NAICS Code	327215
---------------	--------------	------------	--------

Facility Status

File Status	Small Quantity Hazardous Waste Generator	Other Activities	
-------------	---	------------------	--

Outstanding Issues

Last Inspection Date	no previous inspection of NSG/Pilkington
Unresolved Violations	<input type="radio"/> Yes <input checked="" type="radio"/> No
Details	

Inspection Narrative

This facility started operation in February 2012 under the name Pilkington North. Since then it was bought by NSG Group, and now goes by that name. The current operation occupies approximately the center portion ("South Dock 1") of what used to be the Arvin Meritor factory, which has been redeveloped for occupancy by multiple businesses in what is now known as the Hurricane Industrial Complex.

This NSG Group facility engages in "value added" production by adding specific improvements to automotive glass such as clips (holders) to side windows and rubber seals to vent glass. The preformed automotive glass pieces come from the NSG facility (also formerly Pilkington) located in Shelbyville, IN, and from other sources. They include pieces for Honda and GM models, soon to add Mitsubishi and Nissan.

This facility is still in the process of gearing up production, and is not yet utilizing all of its allotted space. Right now it is operating one clip priming station and two glass priming stations. The facility generates a liquid and a solid hazardous waste stream related to the products used for attaching clips to the glass. These products include a glass cleaner (Betaprime 5500, 50-60% MEK), and a bonding agent (Betaseal 43518, 45-55% toluene and 45-55% methanol). The liquid waste stream consists of used primer (D001, possibly D035), and is generated in relatively low volume (the facility is still filling its first satellite accumulation drum of this liquid waste). The solid waste stream consists of debris such as

Lee Parsons
2012

Page 1 of 6 NSG Group (Formerly Pilkington North)/Thursday, July 12,

discarded primer container tips, rags, clip station cardboard, discarded clips, and empty liter aluminum product primer containers which may contain some unusable thick residue (likely F005, possibly D001). The facility currently had two drums of this solid hazardous waste in storage, what has been generated since start-up in February of this year. The operation of attaching rubber seals to vent glass is reportedly strictly a mechanical process which generates no hazardous waste. Mr. Russ reported that there had not yet been a hazardous waste disposal shipment from this facility.

The facility notified upon start-up as a Small Quantity Generator (SQG) of hazardous waste. Based upon the hazardous waste generation rate observed up to the time of this inspection, it appeared that the facility has recently been generating hazardous waste at a lower rate, in the Conditionally Exempt Small Quantity (CESQG) category. It has been evaluated as a CESQG for this inspection. It is anticipated that as this facility approaches full production, it will become a SQG.

Non-hazardous wastes generated by this operation include discarded glass ("non-conforming pieces"), which is collected in a rolloff and periodically sent to the Shelbyville plant from where it is sent to a recycler (Reflective Materials). Light replacement is handled by the landlord, so this NSG facility is not presently managing universal waste lamps.

This inspection consisted of a tour of the process work stations and examination of the hazardous waste storage area located near south dock 1. All hazardous waste in storage and satellite accumulation drums were maintained closed and properly marked and dated. A couple of small work station hazardous waste collection containers were open, but fashioned with closures during the inspection. Some used one-liter aluminum Betaprime containers ready for discard as hazardous waste and containing a little product residual were being temporarily stored on a shelf in a metal work station cabinet before deposit in the solid hazardous waste drum. This was effectively satellite accumulation which was not appropriately marked, but was adequately marked during the inspection.

Since no shipments of hazardous waste had been made yet, there were no hazardous waste manifests to examine. The person primarily responsible for hazardous waste management (Robert Homer) was absent receiving hazardous waste (and other) training on the day of this inspection. The facility generally provided the necessary equipment for emergency response required of SQGs. It did not have a posting of emergency information required of SQGs, but a template for providing this information was left with the facility.

Since the facility appeared to be presently functioning as a CESQG, no RCRA violations are being cited from this inspection. In the interest of reviewing and reminding the facility of standards that would apply if and when it becomes a SQG, those applicable requirements were discussed during the inspection.

Regulatory Status			
Observed Activity	Conditionally Exempt Small Quantity Generator	Other Activities	
Documents Reviewed	product MSDSs		
Comments			

Waste Management				
Comments:				
Waste Stream(s) Information				
Waste Streams <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Inspected <input type="radio"/> Not Applicable				
List waste stream(s) information that varies from the most recent Annual Report (Example: additional waste streams, waste streams no longer generated, significant increase/decrease in generation rate, etc.)				
EPA Waste Codes	Description	Source	Generation Rate	Disposition
D001 - Ignitable (also possibly D035)	liquid waste (mostly discarded glass primer & sealer)	clip station / glass prime stations	< 1 drum / 6 months	none yet disposed
likely F005 (toluene) (also possibly D001)	solid debris (primer tips, rags, cardboard, clips, primer containers)	clip station / glass prime stations	est. 3 drums in 5 months (<220 pounds/month)	none yet disposed
non-hazardous	discarded ("non-conforming") automotive glass	production	not determined	Shelbyville plant for recycling

Exempted/Excluded	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Inspected <input type="radio"/> Not Applicable				
Explanation					
Waste Management Areas					
Container Management Area(s)	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not inspected <input type="radio"/> Not applicable				
EPA Waste Codes	Location	Number	Size	Type of Container	
likely F005, possibly D001 (solid debris)	inside near south dock 1	2	55 gallon	Steel	
Satellite Area(s)	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not inspected <input type="radio"/> Not applicable				
EPA Waste Codes	Location	Comments			
D001 (also possibly D035)	clip priming station	one drum for liquid waste, marked & closed			
likely F005 (toluene), possibly D001	clip priming station	one drum for solid debris, marked & closed			
likely F005 and/or D035	clip & glass prime stations (3)	small (1 quart) containers for temporary primer tip collection, marked & closed during inspection			
Tanks, Restricted Waste Sites, and Other Regulated Units					
<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not inspected <input type="radio"/> Not applicable					

Environmental Releases	
Visible Releases/Contamination/Discharges	<input type="radio"/> Yes <input checked="" type="radio"/> No Release Observed

Compliance Assistance	
P2 Information	
The following P2 suggestions could possibly save money, reduce waste and/or minimize risk. You might consider having a P2 assessment, or a voluntary technical assistance consultation from IDEM staff. Please visit the agency's P2 web site at http://www.in.gov/idem/5298.htm for additional information.	
Contact by IDEM OPPTA Requested	<input type="radio"/> Yes <input checked="" type="radio"/> No
P2 Suggestions	

Guidance Materials	
Guidance Materials Provided to Facility	Hazardous Waste Handler Change Form SQG Emergency Posting

PCB Screening					
Comments:					
PCB Screening Conducted?	<input type="radio"/> Yes <input checked="" type="radio"/> No	Previous IDEM PCB Inspection Conducted?	<input type="radio"/> Yes <input checked="" type="radio"/> No	Date	
Age of Oldest Portion of Facility per Facility Representative		PCB ML Labels or PCB Marking	<input type="radio"/> Yes <input checked="" type="radio"/> No		

Lee Parsons
2012

Page 3 of 6 NSG Group (Formerly Pilkington North)/Thursday, July 12,

		Observed at the Facility by the Inspector			
Fluid Filled Electrical Equipment Observed by Inspector	<input type="radio"/> Yes <input checked="" type="radio"/> No	Ownership of Equipment	<input type="radio"/> Facility <input type="radio"/> Public Utility	Name of Utility	
Type of Fluid Filled Electrical Equipment					
PCB Storage Area Observed	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not applicable	Storage Area Location			
PCB Spills/Releases per Facility Representative	<input type="radio"/> Yes <input checked="" type="radio"/> No	Spills/Releases Observed by Inspector	<input type="radio"/> Yes <input checked="" type="radio"/> No	Description	

Multi-Media Screening (Checked box indicates a concern)	
Comments:	
Multi-Media Screening Conducted	<input type="radio"/> Yes <input checked="" type="radio"/> No
Water Concerns <input type="checkbox"/> Process wastewater discharge to a POTW collection system (i.e. sewer) without a permit <input type="checkbox"/> Direct discharge (from industrial process, industrial wastewater treatment or non-contact cooling water) to receiving water near the facility without an NPDES permit <input type="checkbox"/> Process materials such as cleaners, solvents, paints, lubricants, etc. are escaping through floor drains	Air Concerns <input type="checkbox"/> Visible emissions from stacks or vents <input type="checkbox"/> Dust crossing property lines <input type="checkbox"/> Open solvent containers <input type="checkbox"/> Spray booth filters not securely in place <input type="checkbox"/> Open burning
Storm Water Concerns <input type="checkbox"/> NOI for Rule 6 (see applicable SIC codes) <input type="checkbox"/> Storm Water Pollution Prevention Plan (must be developed within 365 days of NOI). <input type="checkbox"/> Storm water annual sample <input type="checkbox"/> Measures to ensure contaminants from industrial activities aren't exposed to storm water <input type="checkbox"/> Documented quarterly inspections of storm water run-off conveyances <input type="checkbox"/> Documented annual employee training on SWP3 <input type="checkbox"/> Rule 5 storm water permit for land disturbing activities greater than 1 acre <input type="checkbox"/> Signs of erosion or off-site sedimentation into waters of the state from construction sites	Drinking Water Concerns <input type="checkbox"/> PWSID# (applies to 25 or more employees on self-supplied drinking water system) <input type="checkbox"/> Contamination within 200 ft of wellhead TRI Concerns <input type="checkbox"/> Lack of TRI report (applies to 10 or more employees in applicable SIC codes) UST Concerns <input type="checkbox"/> Unregistered UST containing petroleum or hazardous substance

Checklist (Checked box indicates a compliance concern)	
Standards <input type="checkbox"/> Hazardous Waste Determination <input type="checkbox"/> EPA Identification Number(s) <input type="checkbox"/> Manifest General Requirements <input type="checkbox"/> Use of the Manifest <input type="checkbox"/> Biennial Report	Satellite Accumulation – SQG and LQG <input type="checkbox"/> Satellite Accumulation - 55 Gallon <input type="checkbox"/> Satellite Accumulation - Label <input type="checkbox"/> Satellite Containers Closed
Container Management – LQG <input type="checkbox"/> Accumulated On-site for 90 Days or Less <input type="checkbox"/> Hazardous Waste Container Condition <input type="checkbox"/> Hazardous Waste Container Compatibility <input type="checkbox"/> Hazardous Waste Containers Closed <input type="checkbox"/> Hazardous Waste Container Handling <input type="checkbox"/> Hazardous Waste Container Inspections <input type="checkbox"/> Accumulation Start Date Clearly Marked and Visible <input type="checkbox"/> Marked Clearly with Words "Hazardous Waste"	Container Management – SQG <input type="checkbox"/> Accumulate for 180 Days or Less <input type="checkbox"/> May not Exceed 6000 Kg (13,200 Lbs) <input type="checkbox"/> Hazardous Waste Container Condition <input type="checkbox"/> Hazardous Waste Container Compatibility <input type="checkbox"/> Hazardous Waste Containers Closed <input type="checkbox"/> Hazardous Waste Container Handling <input type="checkbox"/> Hazardous Waste Container Inspection <input type="checkbox"/> Accumulation Start Date Clearly Marked and Visible <input type="checkbox"/> Marked Clearly with the Words "Hazardous Waste"
Preparedness and Prevention – LQG and SQG <input type="checkbox"/> Maintained and Operated to Minimize Possibility of a Release <input type="checkbox"/> Required Equipment <input type="checkbox"/> Communication & Alarm Access <input type="checkbox"/> Aisle Space	Contingency Plan and Emergency Procedures – LQG <input type="checkbox"/> Contingency Plan Developed <input type="checkbox"/> Contingency Plan Content <input type="checkbox"/> Contingency Plan Maintained at Facility
Personnel Training – LQG <input type="checkbox"/> Personnel Training	Training and Emergency Procedures – SQG <input type="checkbox"/> SQG Emergency Coordinator <input type="checkbox"/> Emergency Information Posted <input type="checkbox"/> Employee Training
Tank Requirements – LQG <input type="checkbox"/> Integrity Assessment <input type="checkbox"/> Containment and Release Detection <input type="checkbox"/> Tank General Requirements <input type="checkbox"/> Tank Inspections <input type="checkbox"/> Subpart BB - Monthly Pump and Valve Monitoring <input type="checkbox"/> Subpart CC - Annual Inspection/Monitoring	Used Oil – All Facilities <input type="checkbox"/> Rebuttable Presumption Applies <input type="checkbox"/> Containers and Tanks in Good Condition <input type="checkbox"/> Containers/Tank Labeling <input type="checkbox"/> Release Clean Up and Containment <input type="checkbox"/> Burning Restrictions - Generated On-site or Dly, .5M BTU
Additional Requirements – LQG and SQG <input type="checkbox"/> Release to the Environment, Disposal of Solid Waste <input type="checkbox"/> Illegal Dumping <input type="checkbox"/> Land-Ban Notification	Universal Waste – All Facilities <input type="checkbox"/> Universal Waste Labeling <input type="checkbox"/> Containers - Closed, Good Condition, No Evidence of Leaks <input type="checkbox"/> Universal Waste - Bulb Crushing Prohibition

<input type="checkbox"/> Other Violation	
--	--

Description of Violation(s)
No violations cited – facility now functioning as CESQG.

Inspection Documentation	
Photographs	<input checked="" type="radio"/> Yes <input type="radio"/> No
Map	<input checked="" type="radio"/> Maps
GPS Location Collected	<input type="radio"/> Yes <input checked="" type="radio"/> No
Analytical Screening Conducted	<input type="radio"/> Yes <input checked="" type="radio"/> No
Lab Sample	<input type="radio"/> Yes <input checked="" type="radio"/> No

Inspection Results/Actions
Comments:
Inspection Results
No Violation(s) Discovered
Multi-Media Screening Results
Multi-Media Screening Not Conducted

Finalize Inspection	
Written Summary of Inspection	Notice of Inspection and Verbal Summary Provided
Inspector Information	Printed/Typed Name: Lee Parsons
	Phone Number: (317) 234-6935
	Email Address: lparsons@idem.in.gov
	Signature: <i>Lee Parsons</i>
Facility Representative Signature	Printed/Typed Name: Joseph Russ
	Signature: Signature obtained on the Notice of Inspection

Photo Table



Number	1
Description	Cabinet near clip priming station holding product primers and (bottom shelf) discarded primer cans to be deposited in solid hazardous waste drum (this shelf is effectively a satellite accumulation point).
Photographer	Lee Parsons
Facility Name	NSG Group (Formerly Pilkington North)
Photo Date	7/12/2012
Others	



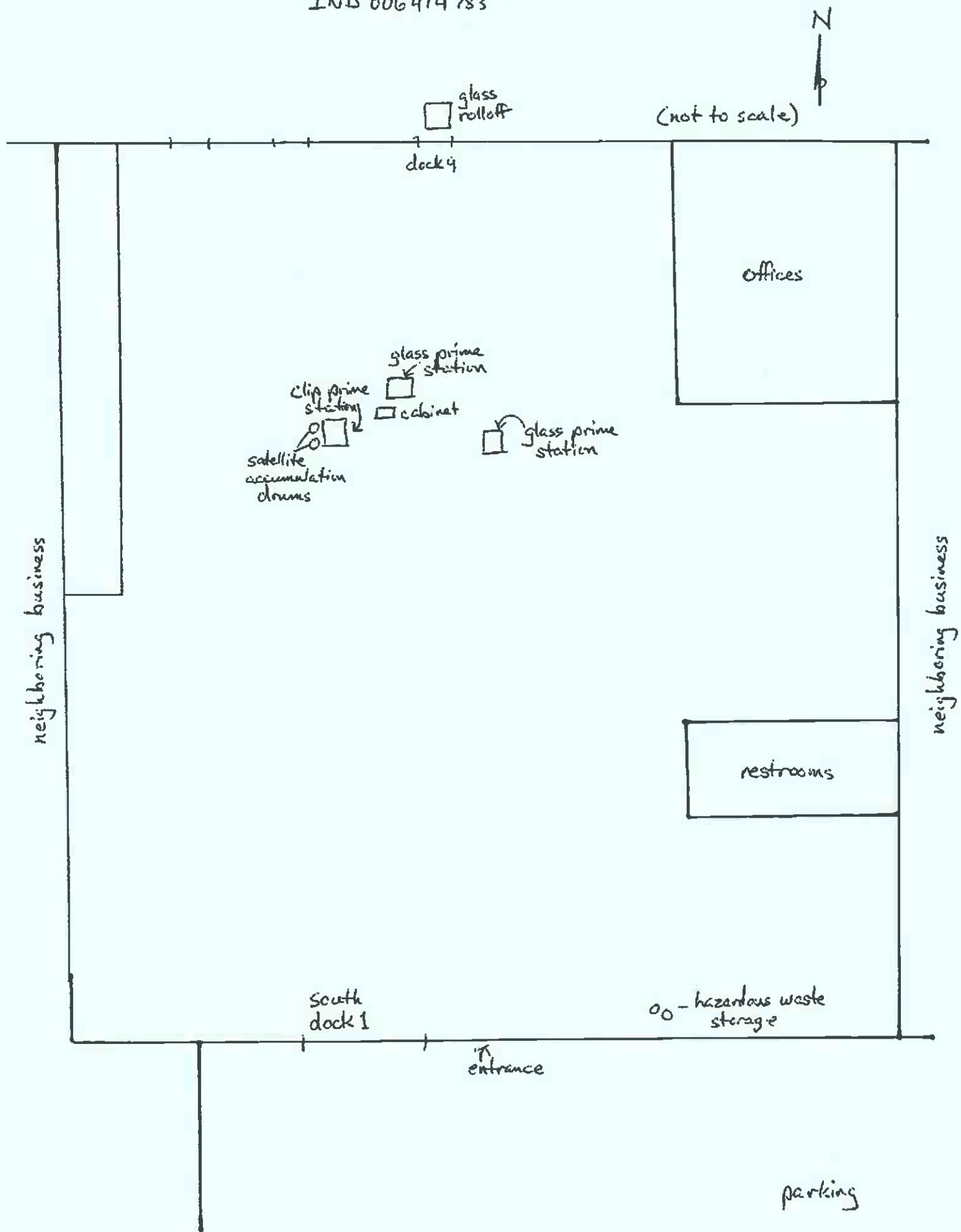
Number	2
Description	Clip priming station: two satellite accumulation drums, one for liquid hazardous waste (funnel) and the other for solid hazardous waste debris.
Photographer	Lee Parsons
Facility Name	NSG Group (Formerly Pilkington North)
Photo Date	7/12/2012
Others	



Number	3
Description	Clip priming station: Solid hazardous waste satellite accumulation drum (marking making reference to used bottles stored in cabinet, photo #1).
Photographer	Lee Parsons
Facility Name	NSG Group (Formerly Pilkington North)
Photo Date	7/12/2012
Others	



NSG Group (former Pilkington North), Franklin
IND 006414783





INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
100 N. Senate Avenue
Indianapolis, IN 46204-2251
Telephone: (800) 451-6027 or (317) 232-8603

Type of Inspection (may include more than one):

- ### Preliminary Inspection/Screening Findings:

Single Media Inspection:

- Multi-Media Screening (Please note that a multi-media screening is not a comprehensive evaluation of the compliance status of the facility):**

- ### Pollution Prevention:

Compliance Assistance:

A summary of violations and concerns noted during the inspection was verbally communicated to the undersigned representative during the inspection. The facility should correct any violations noted as soon as possible. Violations identified and corrected during the inspection may still be cited as violations.

A written inspection summary will be provided within 45 days. In accordance with IC 13-14-5-4, matters not evident to IDEM at the time of the inspection might not be included in either the verbal or written inspection summary.

IDEM Representative:

Owner/Agent Representative:

DISTRIBUTION: White - IDEM Public File; Canary - Office of Pollution Prevention and Technical Assistance [if OPPTA assistance is requested] or IDEM Representative (i.e., inspector) [if OPPTA assistance is not requested]; Pink - Owner/Agent Representative



Material Safety Data Sheet

The Dow Chemical Company

Product Name: BETASEAL(TM) 43518 Glass Primer

Issue Date: 10/05/2011

Print Date: 06 Oct 2011

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name

BETASEAL(TM) 43518 Glass Primer

COMPANY IDENTIFICATION

The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
USA

Customer Information Number:

800-258-2436

SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact:

989-636-4400

Local Emergency Contact:

989-636-4400

2. Hazards Identification

Emergency Overview

Color: Colorless to yellow

Physical State: Liquid.

Odor: Characteristic

Hazards of product:

Danger - Poison! Flammable liquid and vapor. Contains methanol. Vapor harmful. May be fatal or cause blindness if swallowed. Cannot be made nonpoisonous. Causes eye irritation. Harmful if absorbed through skin. May cause allergic skin reaction. Harmful if inhaled. May cause skin irritation. May be harmful if absorbed through skin. May cause central nervous system effects. Harmful or fatal if swallowed; can enter lungs and cause damage. Vapor explosion hazard. Vapors may travel a long distance; ignition and/or flash back may occur. Evacuate area. Keep upwind of spill. Stay out of low areas. Warn public of downwind explosion hazard. Eliminate ignition sources.

OSHA Hazard Communication Standard

®(TM)*Trademark

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: May cause severe eye irritation. May cause severe corneal injury. Vapor may cause eye irritation experienced as mild discomfort and redness. Vapor may cause lacrimation (tears).

Skin Contact: Prolonged contact may cause moderate skin irritation with local redness. May cause drying and flaking of the skin.

Skin Absorption: Prolonged or widespread skin contact may result in absorption of harmful amounts. Repeated skin contact may result in absorption of harmful amounts. Contains component(s) which have been reported to cause effects on the following organs in animals: Kidney. Bladder. Effects of methanol are the same as observed via oral and inhalation exposure and include CNS depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death.

Skin Sensitization: A component in this mixture has been shown to be a skin sensitizer.

Inhalation: Easily attainable vapor concentrations may cause serious adverse effects, even death.

Excessive exposure may cause irritation to upper respiratory tract (nose and throat). May cause central nervous system effects. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death. Effects may be delayed. Alcohol consumption and exertion may increase the adverse effects of toluene. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. Symptoms may include as tingling, numbness or pain in the extremities.

Ingestion: Swallowing a small amount may cause serious injury; swallowing larger amounts may be fatal. Methanol, a component in this mixture, is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart. Effects may be delayed.

Aspiration hazard: Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

Effects of Repeated Exposure: Contains component(s) which have been reported to cause effects on the following organs in animals: Central nervous system. Excessive exposure may cause neurologic signs and symptoms. Toluene has caused hearing loss in laboratory animals upon exposure to high concentrations. Intentional misuse by deliberately inhaling toluene may cause nervous system damage, hearing loss, liver and kidney effects and death. Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

Birth Defects/Developmental Effects: Methanol has caused birth defects in mice at doses nontoxic to the mother as well as slight behavioral effects in offspring of rats. In laboratory animals, toluene has been toxic to the fetus at doses toxic to the mother; it has caused birth defects in mice when administered orally, but not by inhalation.

3. Composition Information

Component	CAS #	Amount
Toluene	108-88-3	> 45.0 - < 55.0 %
Methanol	67-56-1	> 45.0 - < 55.0 %
(3-Mercaptopropyl)trimethoxysilane	4420-74-0	< 5.0 %

4. First-aid measures

Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Obtain medical attention without delay. Wash clothing before reuse. Properly dispose of contaminated leather items, such as shoes, belts, and watchbands. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Safety shower should be located in immediate work area.

Eye Contact: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist. Eye wash fountain should be located in immediate work area.

Ingestion: Do not induce vomiting. Seek medical attention immediately. If person is fully conscious give 1 cup or 8 ounces (240 ml) of water. If medical advice is delayed and if an adult has swallowed several ounces of chemical, then give 3-4 ounces (1/3-1/2 Cup) (90-120 ml) of hard liquor such as 80 proof whiskey. For children, give proportionally less liquor at a dose of 0.3 ounce (1 1/2 tsp.) (8 ml) liquor for each 10 pounds of body weight, or 2 ml per kg body weight [e.g., 1.2 ounce (2 1/3 tbsp.) for a 40 pound child or 36 ml for an 18 kg child]. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed

In cases where several ounces (60 - 100 ml) have been ingested, consider the use of ethanol and hemodialysis in the treatment. Consult standard literature for details of treatment. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol (Brent, J. et al., New England Journal of Medicine, Feb. 8, 2001, 344:8, p. 424-9): loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Maintain adequate ventilation and oxygenation of the patient. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. Alcohol consumed before or after exposure may increase adverse effects. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Skin contact may aggravate preexisting dermatitis.

5. Fire Fighting Measures

Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Extinguishing Media to Avoid: Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire.

Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Container may vent and/or rupture due to fire. Electrically ground and bond all equipment. Flammable mixtures of this product are readily ignited even by static discharge. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Flammable mixtures may exist within the vapor space of containers at room temperature. Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Avoid accumulation of water. Product may be carried across water surface spreading fire or contacting an ignition source.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. Keep out of sewers. For large spills, warn public of downwind explosion hazard. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Refer to Section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Absorb with materials such as: Cat litter. Sand. Sawdust. Ground and bond all containers and handling equipment. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. Handling and Storage

Handling

General Handling: Keep away from heat, sparks and flame. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Avoid breathing vapor or mist. Wash thoroughly after handling. Keep container closed. Use only with adequate ventilation. No smoking, open flames or sources of ignition in handling and storage area. Ignition sources can include and are not limited to pilot lights, flames, smoking, sparks, heaters, electrical equipment, and static discharges. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Use of non-sparking or explosion-proof equipment may be necessary, depending

upon the type of operation. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Never use air pressure for transferring product. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Storage

Minimize sources of ignition, such as static build-up, heat, spark or flame. Keep container closed. Flammable mixtures may exist within the vapor space of containers at room temperature.

Shelf life: Use within 6 Months Storage temperature: 5 - 35 °C

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Methanol	ACGIH	TWA	200 ppm SKIN, BEI
	ACGIH	STEL	250 ppm SKIN, BEI
	OSHA Table Z-1	PEL	260 mg/m3 200 ppm
Toluene	ACGIH	TWA	20 ppm BEI
	OSHA/Z2	TWA	200 ppm
	OSHA/Z2	Ceiling	300 ppm
	OSHA/Z2	MAX. CONC	500 ppm 10 minutes

A "skin" notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.

It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

A BEI notation following the exposure guideline refers to a guidance value for assessing biological monitoring results as an indicator of the uptake of a substance from all routes of exposures.

Personal Protection

Eye/Face Protection: Use chemical goggles. Eye wash fountain should be located in immediate work area. If exposure causes eye discomfort, use a full-face respirator.

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber, Viton, Polyethylene, Neoprene, Chlorinated polyethylene, Natural rubber ("latex"), Polyvinyl chloride ("PVC" or "vinyl"), Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Nitrile/butadiene rubber ("nitrile" or "NBR"), Polyvinyl alcohol ("PVA"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the Instructions/specifications provided by the glove supplier.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. When respiratory protection is required, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. For emergency conditions, use an approved positive-pressure self-contained

breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

Ingestion: Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face before smoking or eating.

Engineering Controls

Ventilation: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only in enclosed systems or with local exhaust ventilation. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. Lethal concentrations may exist in areas with poor ventilation.

9. Physical and Chemical Properties

Appearance

Physical State

Liquid.

Color

Colorless to yellow

Odor

Characteristic

Odor Threshold

No test data available

pH

No test data available

Melting Point

No test data available

Freezing Point

No test data available

Boiling Point (760 mmHg)

No test data available.

Flash Point - Closed Cup

-3 °C (27 °F) *Setaflash Closed Cup ASTM D3828*

Evaporation Rate (Butyl Acetate = 1)

No test data available

Flammability (solid, gas)

Not applicable to liquids

Flammable Limits In Air

Lower: No test data available

Upper: No test data available

Vapor Pressure

No test data available

Vapor Density (air = 1)

No test data available

Specific Gravity (H₂O = 1)

0.835 *ASTM D1475*

Solubility in water (by weight)

No test data available

Partition coefficient, n-octanol/water (log Pow)

No data available for this product. See Section 12 for individual component data.

Autoignition Temperature

No test data available

Decomposition

No test data available

Temperature

Kinematic Viscosity

No test data available

Explosive properties

no data available

Oxidizing properties

no data available

Molecular Weight

No test data available

Volatile Organic

6.94 lb/gal *EPA Method No. 24* (typical value)

Compounds

Henry's Law Constant (H)

5E+00

10. Stability and Reactivity

Reactivity

No dangerous reaction known under conditions of normal use.

Chemical stability

Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions

Polymerization will not occur.

Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose. Avoid static discharge.

Incompatible Materials: Avoid contact with: Acids. Bases. Oxidizers.

Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials.

11. Toxicological Information

Acute Toxicity

Ingestion

The data presented are for the following material: Methanol. Estimated. Lethal Dose, Human 1 - 8 Ounces

Dermal

The dermal LD50 has not been determined.

Inhalation

The LC50 has not been determined.

Eye damage/eye irritation

May cause severe eye irritation. May cause severe corneal injury. Vapor may cause eye irritation experienced as mild discomfort and redness. Vapor may cause lacrimation (tears).

Skin corrosion/irritation

Prolonged contact may cause moderate skin irritation with local redness. May cause drying and flaking of the skin.

Sensitization

Skin

A component in this mixture has been shown to be a skin sensitizer.

Respiratory

No relevant information found.

Repeated Dose Toxicity

Contains component(s) which have been reported to cause effects on the following organs in animals: Central nervous system. Excessive exposure may cause neurologic signs and symptoms. Toluene has caused hearing loss in laboratory animals upon exposure to high concentrations. Intentional misuse by deliberately inhaling toluene may cause nervous system damage, hearing loss, liver and kidney effects and death. Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

Chronic Toxicity and Carcinogenicity

Contains component(s) which did not cause cancer in laboratory animals.

Developmental Toxicity

Methanol has caused birth defects in mice at doses nontoxic to the mother as well as slight behavioral effects in offspring of rats. In laboratory animals, toluene has been toxic to the fetus at doses toxic to the mother; it has caused birth defects in mice when administered orally, but not by inhalation.

Reproductive Toxicity

Contains component(s) which did not interfere with reproduction in animal studies.

Genetic Toxicology

Contains a component(s) which were negative in in vitro genetic toxicity studies. The majority and most reliable of the many genetic toxicity studies on toluene, both in vitro and in animals, indicate that it is not genetically toxic.

12. Ecological Information

Toxicity

Data for Component: Toluene

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 h: 5.8 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, Daphnia magna (Water flea), static test, 24 h, immobilization: 7 mg/l

Aquatic Plant Toxicity

EbC50, Pseudokirchneriella subcapitata (green algae), biomass growth inhibition, 72 h: 12.5 mg/l

Toxicity to Micro-organisms

IC50; Bacteria, 16 h: 29 mg/l

Aquatic Invertebrates Chronic Toxicity Value

Daphnia magna (Water flea), 21 d, number of offspring, NOEC: 2 mg/l

Toxicity to Soil Dwelling Organisms

LC50, Eisenia fetida (earthworms): 150 - 280 mg/kg

Data for Component: Methanol

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, rainbow trout (Oncorhynchus mykiss), 96 h: 17,000 mg/l

Aquatic Invertebrate Acute Toxicity

LC50, water flea Daphnia magna, 24 h, immobilization: > 10,000 mg/l

Toxicity to Micro-organisms

IC50; activated sludge, 3 h: > 1,000 mg/l

Data for Component: (3-Mercaptopropyl)trimethoxysilane

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, fathead minnow (Pimephales promelas), 96 h: 253 mg/l

Aquatic Invertebrate Acute Toxicity

LC50, water flea Daphnia magna, 48 h, survival: 4.0 mg/l

Toxicity to Micro-organisms

IC50, Not available; bacteria, 16 h: 850 mg/l

Persistence and Degradability

Data for Component: Toluene

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
100 %	14 d	OECD 301C Test	Not applicable

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
5.23E-12 cm ³ /s	2 d	Estimated.

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
53 - 56 %		59 - 80 %	

Theoretical Oxygen Demand: 3.13 mg/mg

Data for Component: Methanol

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
99 %	28 d	OECD 301D Test	pass

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
6.16E-13 cm ³ /s	8 - 18 d	Estimated.

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
72 %		79 %	

Chemical Oxygen Demand: 1.49 mg/mg

Theoretical Oxygen Demand: 1.50 mg/mg

Data for Component: (3-Mercaptopropyl)trimethoxysilane

Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%).

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
4.66E-11 cm ³ /s	0.229 d	Estimated.

Chemical Oxygen Demand: 1.73 mg/mg

Theoretical Oxygen Demand: 1.71 mg/mg

Bioaccumulative potentialData for Component: Toluene

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): 2.73 Measured

Bioconcentration Factor (BCF): 13.2 - 90; fish; Measured

Data for Component: Methanol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): -0.77 Measured

Bioconcentration Factor (BCF): < 10; fish; Measured

Data for Component: (3-Mercaptopropyl)trimethoxysilane

Partition coefficient, n-octanol/water (log Pow): 0.25 Estimated.

Mobility in soilData for Component: Toluene

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient, soil organic carbon/water (Koc): 37 - 178 Estimated.

Henry's Law Constant (H): 6.46E-03 atm*m³/mole; 25 °C Estimated.Data for Component: Methanol

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient, soil organic carbon/water (Koc): 0.44 Estimated.

Henry's Law Constant (H): 4.40E-06 - 6.94E-06 atm*m³/mole; 25 °C MeasuredData for Component: (3-Mercaptopropyl)trimethoxysilane

Partition coefficient, soil organic carbon/water (Koc): 2,577 Estimated.

Henry's Law Constant (H): 5.42E-06 atm*m³/mole Estimated using a bond contribution method.**13. Disposal Considerations**

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

Treatment and disposal methods of used packaging: Empty containers should be recycled or otherwise disposed of by an approved waste management facility. Waste characterizations and

compliance with applicable laws are the responsibility solely of the waste generator. Do not re-use containers for any purpose.

14. Transport Information

DOT Non-Bulk

Proper Shipping Name: FLAMMABLE LIQUID, TOXIC, N.O.S.

Technical Name: METHANOL, TOLUENE

Hazard Class: 3 (6.1) ID Number: UN1992 Packing Group: PG II

DOT Bulk

Proper Shipping Name: FLAMMABLE LIQUID, TOXIC, N.O.S.

Technical Name: METHANOL, TOLUENE

Hazard Class: 3 (6.1) ID Number: UN1992 Packing Group: PG II

IMDG

Proper Shipping Name: FLAMMABLE LIQUID, TOXIC, N.O.S.

Technical Name: METHANOL, TOLUENE

Hazard Class: 3 (6.1) ID Number: UN1992 Packing Group: PG II

EMS Number: F-E,S-D

Marine pollutant.: No

ICAO/IATA

Proper Shipping Name: FLAMMABLE LIQUID, TOXIC, N.O.S.

Technical Name: METHANOL, TOLUENE

Hazard Class: 3 (6.1) ID Number: UN1992 Packing Group: PG II

Cargo Packing Instruction: 364

Passenger Packing Instruction: 352

Additional Information

Reportable quantity: 1,818 lb – TOLUENE, 9,090 lb – METHANOL

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard Yes

Delayed (Chronic) Health Hazard Yes

Fire Hazard Yes

Reactive Hazard No

Sudden Release of Pressure Hazard No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS #	Amount
Methanol	67-56-1	> 45.0 - < 55.0 %
Toluene	108-88-3	> 45.0 - < 55.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Methanol	67-56-1	> 45.0 - < 55.0 %
Toluene	108-88-3	> 45.0 - < 55.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

The following product components are cited in the New Jersey Special Hazardous Substance List:

Component	CAS #	Amount
Methanol	67-56-1	> 45.0 - < 55.0 %
Toluene	108-88-3	> 45.0 - < 55.0 %

US. New Jersey Community Right-To-Know Survey, Table A: NJ Environmental Hazardous Substances [EHS] List (N.J. Admin. Code Title 7 Section 1G-2.1)

The following product components are cited in the New Jersey Environmental Hazardous and Workplace Hazardous Substance Lists:

Component	CAS #	Amount
Methanol	67-56-1	> 45.0 - < 55.0 %
Toluene	108-88-3	> 45.0 - < 55.0 %

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

US. Toxic Substances Control Act

All components of this product are either on the TSCA inventory, are exempt from TSCA inventory Requirements under 40 CFR 720.30, or comply with the PMN Polymer Exemption 40 CFR 723.250.

16. Other Information

Recommended Uses and Restrictions

Identified uses

A primer – For use in automotive applications.

Revision

Identification Number: 50922 / 1001 / Issue Date 10/05/2011 / Version: 12.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight

OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The Information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.



Material Safety Data Sheet

The Dow Chemical Company

Product Name: BETAPRIME(TM) 5500

Issue Date: 2007.03.27
Print Date: 28 Mar 2007

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name
BETAPRIME(TM) 5500

COMPANY IDENTIFICATION
The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
USA

For MSDS updates and Product Information: 800-258-2436

Prepared By: Prepared for use in Canada by EH&S, Product Regulatory
Management Department.
450-652-1029
Revision: 2007.03.27
Print Date: 3/28/2007

Customer Information Number: 800-258-2436

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 989-636-4400
Local Emergency Contact: 519-339-3711

2. Hazards Identification

Emergency Overview

Color: Black
Physical State: Liquid
Odor: Characteristic
Hazards of product:

DANGER! Extremely flammable liquid and vapor - Vapor may cause flash fire.
Causes eye irritation. A component in this mixture has been shown to be a skin sensitizer. May cause central nervous system effects. May cause anesthetic effects.
May cause respiratory tract irritation. May cause skin irritation.

* Indicates a Trademark

Potential Health Effects

Eye Contact: May cause pain disproportionate to the level of irritation to eye tissues. May cause moderate eye irritation. May cause moderate corneal injury. Vapor may cause eye irritation experienced as mild discomfort and redness.

Skin Contact: Prolonged contact may cause moderate skin irritation with local redness. May cause drying and flaking of the skin.

Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Skin Sensitization: A component in this mixture has been shown to be a skin sensitizer. Once an individual is sensitized, reexposure to very small amounts of vapor, mist or liquid isophorone diisocyanate may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

Inhalation: At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated material may cause respiratory irritation and other effects. May cause central nervous system effects. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed. May cause nausea and vomiting. Based on information for component(s): Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. Decreased lung function has been associated with overexposure to isocyanates. This material contains mineral and/or inorganic fillers. There is essentially no potential for Inhalation exposure to these fillers incidental to industrial handling due to the physical state.

Respiratory Sensitization: A component in this mixture may cause an allergic respiratory response. Reexposure to extremely low isocyanate concentrations may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

Ingestion: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

Effects of Repeated Exposure: Contains component(s) which have been reported to cause effects on the following organs in animals: Liver. Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols. Methyl ethyl ketone is probably not neurotoxic in itself but it potentiates the neurotoxicity of methyl-n-butyl ketone and n-hexane. Methyl ethyl ketone has caused liver effects in laboratory animals exposed by inhalation to high concentrations.

Cancer Information: Lung tumors have been observed in laboratory animals exposed to aerosol droplets of MDI/Polymeric MDI (6 mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

Birth Defects/Developmental Effects: Contains component(s) which did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother.

3. Composition/information on ingredients

Component	CAS #	Amount w/w
Methyl ethyl ketone	78-93-3	> 50.0 - < 60.0 %
ALIPHATIC BASED Silylated Polymer P99-533		> 15.0 - < 25.0 %
Carbon black	1333-86-4	> 5.0 - < 15.0 %
Methylenediphenyl diisocyanate, glycerol propoxylated, copolymer	68877-65-6	< 10.0 %
3-Methoxy-1-butyl acetate	4435-53-4	< 10.0 %
1-Isocyanato-3,3,5-trimethyl-5- isocyanatomethylcyclohexane	4098-71-9	< 2.0 %
4,4'-Methylenediphenyl diisocyanate	101-68-8	< 1.0 %

Amounts are presented as percentages by weight.

4. First-aid measures

Eye Contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

Skin Contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or com oil may be more effective than soap and water. This may also apply to other isocyanates. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Notes to Physician: May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Maintain adequate ventilation and oxygenation of the patient. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Medical Conditions Aggravated by Exposure: Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome). Skin contact may aggravate preexisting dermatitis.

5. Fire Fighting Measures

Extinguishing Media: Dry chemical fire extinguishers. Water fog or fine spray. Foam.

Extinguishing Media to Avoid: Do not use direct water stream.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves).

Unusual Fire and Explosion Hazards: None known.

Hazardous Combustion Products: Hazardous combustion by-products may include but are not limited to carbon dioxide and carbon monoxide.

See Section 9 for related Physical Properties

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Contain spilled material if possible. Absorb with materials such as: Cat litter. Sand. Sawdust. Use non-sparking tools in cleanup operations. Ground and bond all containers and handling equipment.

Ignition Sources Removal: Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Ignition sources can include and are not limited to pilot lights, flames, smoking, sparks, heaters, electrical equipment, and static discharges.

Dust Control: Not applicable.

Personal Precautions: Evacuate area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Only trained and properly protected personnel must be involved in clean-up operations.

Inhalation, Skin, Mucous and Eye Contact Prevention: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage

Handling

General Handling: Use with adequate ventilation. Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Do not breathe vapor. Keep container closed. Keep away from heat, sparks and flame. Do not cut or weld container. No smoking, open flames or sources of ignition in handling and storage area.

Storage

Keep container tightly closed and in a well-ventilated place.

Storage temperature:

5 - 35 °C

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Methyl ethyl ketone	OEL (QUE)	TWA	150 mg/m3 50 ppm
	OEL (QUE)	STEL	300 mg/m3 100 ppm
	CAD AB OEL	TWA	590 mg/m3 200 ppm
	CAD AB OEL	STEL	895 mg/m3 300 ppm
	CAD ON OEL	TWA	590 mg/m3 200 ppm
	CAD ON OEL	STEL	885 mg/m3 300 ppm
	ACGIH	TWA	200 ppm BEI
	ACGIH	STEL	300 ppm BEI
	CAD AB OEL	STEL	885 mg/m3 300 ppm
	CAD BC OEL	TWA	50 ppm
	CAD BC OEL	STEL	100 ppm
4,4'-Methylenediphenyl diisocyanate	OEL (QUE)	TWA	0.051 mg/m3 0.005 ppm
			Exposure must be minimized.
	CAD MB OEL	Ceiling	0.02 ppm
	ACGIH	TWA	0.005 ppm
	CAD MB OEL	Ceiling	0.02 ppm
	CAD AB OEL	TWA	0.051 mg/m3 0.005 ppm
	CAD BC OEL	TWA	0.005 ppm SKIN
	CAD BC OEL	CEILING	0.01 ppm SKIN
	CAD ON OEL	TWA	0.2 micromoles/m3
	CAD ON OEL	TWA	0.005 ppm
1-Isocyanato-3,3,5-trimethyl-5-isocyanatomethylcyclohexane	OEL (QUE)	TWA	0.045 mg/m3 0.005 ppm
			Exposure must be minimized.
	CAD AB OEL	TWA	0.045 mg/m3 0.005 ppm

CAD BC OEL	TWA	0.005 ppm	SEN
ACGIH	TWA	0.005 ppm	
CAD ON OEL	TWA	0.005 ppm	0.2 micromoles/m3
CAD ON OEL	Ceiling	0.02 ppm	0.8 micromoles/m3
CAD BC OEL	CEILING	0.01 ppm	SEN

Consult local authorities for recommended exposure limits.

Although some of the fillers used in this product may have exposure guidelines, no exposure would be expected under normal handling conditions because of the physical state of the material.

A BEI notation following the exposure guideline refers to a guidance value for assessing biological monitoring results as an indicator of the uptake of a substance from all routes of exposures.

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.

It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

A "SEN" notation following the exposure guideline refers to the potential to produce sensitization, as confirmed by human or animal data.

Personal Protection

Eye/Face Protection: Use chemical goggles. Eye wash fountain should be located in immediate work area.

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Chlorinated polyethylene. Natural rubber ("latex"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Neoprene. Viton. Avoid gloves made of: Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When atmospheric levels may exceed the exposure guideline, use an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. The odor and irritancy of this material are inadequate to warn of excessive exposure.

9. Physical and Chemical Properties

Physical State

Liquid

Color	Black
Odor	Characteristic
Flash Point - Closed Cup	-10 °C Vendor
Flammable Limits in Air	Lower: No test data available Upper: No test data available
Autoignition Temperature	No test data available
Vapor Pressure	No test data available
Boiling Point (760 mmHg)	No test data available.
Vapor Density (air = 1)	No test data available
Specific Gravity (H2O = 1)	0.95 Vendor
Freezing Point	No test data available
Melting Point	No test data available
Solubility in Water (by weight)	No test data available
pH	No test data available
Dynamic Viscosity	No test data available
Volatile Organic Compounds	4.95 lb/gal EPA Method No. 24 (typical value)

10. Stability and Reactivity

Stability/Instability

Stable under recommended storage conditions. See Storage, Section 7.

Conditions to Avoid: Some components of this product can decompose at elevated temperatures.

Incompatible Materials: Strong oxidizers. Acids.

Hazardous Decomposition Products: Unlikely to be formed under normal industrial use.

Hazardous Polymerization

Will not occur.

11. Toxicological Information

Acute Toxicity

Ingestion

Single dose oral LD50 has not been determined.

Skin Absorption

The LD50 has not been determined.

Sensitization

Skin

A component in this mixture has been shown to be a skin sensitizer. Once an individual is sensitized, reexposure to very small amounts of vapor, mist or liquid isophorone diisocyanate may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

Respiratory

A component in this mixture may cause an allergic respiratory response. Reexposure to extremely low isocyanate concentrations may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

Repeated Dose Toxicity

Contains component(s) which have been reported to cause effects on the following organs in animals: Liver. Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols. Methyl ethyl ketone is probably not neurotoxic in itself but it potentiates the neurotoxicity of methyl-n-butyl ketone and n-hexane. Methyl ethyl ketone has caused liver effects in laboratory animals exposed by inhalation to high concentrations.

Chronic Toxicity and Carcinogenicity

Lung tumors have been observed in laboratory animals exposed to aerosol droplets of MDI/Polymeric MDI (6 mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

Developmental Toxicity

Contains component(s) which did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother.

Reproductive Toxicity

No relevant information found.

Genetic Toxicology

Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative. Contains component(s) which was negative in animal genetic toxicity studies.

Component Toxicology - Methyl ethyl ketone

Skin Absorption	LD50, Rabbit 6,440 - 8,050 mg/kg
Component Toxicology - 4,4' -Methylenediphenyl diisocyanate	
Skin Absorption	LD50, Rabbit > 2,000 mg/kg
Component Toxicology - Methyl ethyl ketone	
Inhalation	LC50, 4 h, Vapor, Rat 11,700 ppm
Component Toxicology - 4,4' -Methylenediphenyl diisocyanate	
Inhalation	LC50, Aerosol, Rat 490 mg/m ³
Component Toxicology - Methyl ethyl ketone	
Ingestion	LD50, Rat 2,657 - 5,554 mg/kg
Component Toxicology - 4,4' -Methylenediphenyl diisocyanate	
Ingestion	LD50, Rat > 10,000 mg/kg

12. Ecological Information**CHEMICAL FATE**

Data for Component: **Methyl ethyl ketone**

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).

Henry's Law Constant (H): 2.44E-5 atm*m³/mole; 25 °C Measured

Partition coefficient, n-octanol/water (log Pow): 0.29 Measured

Partition coefficient, soil organic carbon/water (Koc): 3.8 Estimated

Persistence and Degradability

Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%).

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
1.33E-12 cm ³ /s	8 d	Estimated

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
71 - 76 %	71 - 82 %	71 - 89 %	

Theoretical Oxygen Demand: 2.44 mg/mg

Data for Component: **Carbon black**

Movement & Partitioning

Partitioning from water to n-octanol is not applicable.

Persistence and Degradability

Biodegradation is not applicable.

Data for Component: 1-Isocyanato-3,3,5-trimethyl-5-isocyanatomethylcyclohexane**Movement & Partitioning**

For this family of materials: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Henry's Law Constant (H): 6.57E-05 atm*m3/mole; 25 °C Estimated

Partition coefficient, n-octanol/water (log Pow): 4.75 Estimated

Partition coefficient, soil organic carbon/water (Koc): 36,000 Estimated

Persistence and Degradability

Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions. For this family of materials: In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
8.82E-12 cm ³ /s	1.212 d	Estimated

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method
62 %	28 d	OECD 301E Test

Theoretical Oxygen Demand: 2.59 mg/mg

Data for Component: 4,4'-Methylenediphenyl diisocyanate**Movement & Partitioning**

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Persistence and Degradability

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

ECOTOXICITYData for Component: Methyl ethyl ketone

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, bluegill (*Lepomis macrochirus*): 1,690 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, water flea *Daphnia magna*, immobilization: 5,091 mg/l

Aquatic Plant Toxicity

EC50, alga *Scenedesmus* sp., biomass growth inhibition: 4,300 mg/l

Toxicity to Micro-organisms

EC50; bacteria, Growth inhibition (cell density reduction): > 1,000 mg/l

Data for Component: Carbon black

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, golden orfe (*Leuciscus idus*): > 1,000 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, water flea *Daphnia magna*, immobilization: > 5,600 mg/l

Data for Component: 1-Isocyanato-3,3,5-trimethyl-5-isocyanatomethylcyclohexane

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in most sensitive species tested). For this family of materials: The measured

|| ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species.

Fish Acute & Prolonged Toxicity

|| LC50, golden orfe (*Leuciscus idus*), static, 48 h: 1.8 mg/l

Aquatic Invertebrate Acute Toxicity

|| EC50, water flea *Daphnia magna*, 24 h, immobilization: 84 mg/l

Aquatic Plant Toxicity

|| EC50, alga *Scenedesmus* sp., biomass growth inhibition, 72 h: 119 mg/l

Toxicity to Micro-organisms

|| EC10; bacteria, respiration inhibition, 6 h: 554 mg/l

Data for Component: 4,4'-Methylenediphenyl diisocyanate

|| The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50 >100 mg/L in the most sensitive species tested).

Toxicity to Soil Dwelling Organisms

|| LC50, Earthworm *Eisenia foetida*, adult, 14 d: > 1,000 mg/kg

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DOW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

Treatment and disposal methods of used packaging: Empty containers should be recycled or otherwise disposed of by an approved waste management facility. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Do not re-use containers for any purpose.

14. Transport Information

TDG Small container

Proper Shipping Name: COATING SOLUTION

Hazard Class: 3 ID Number: UN1139 Packing Group: PG II

IMDG

Proper Shipping Name: COATING SOLUTION

Hazard Class: 3 ID Number: UN1139 Packing Group: PG II

EMS Number: F-E,S-

ICAO/IATA

Proper Shipping Name: COATING SOLUTION

Hazard Class: 3 ID Number: UN1139 Packing Group: PG II

15. Regulatory Information

European Inventory of Existing Commercial Chemical Substances (EINECS)

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

US. Toxic Substances Control Act

All components of this product are either on the TSCA Inventory, are exempt from TSCA Inventory Requirements under 40 CFR 720.30, or comply with the PMN Polymer Exemption 40 CFR 723.250.

CEPA - Domestic Substances List (DSL)

This product contains one or more substances which are not listed on the Canadian Domestic Substances List (DSL). Contact your Dow representative for more information.

Hazardous Products Act Information: CPR Compliance

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Hazardous Products Act Information: WHMIS Classification

B2	Flammable Liquid with a Flash Point Less Than 37.8 C
D2A	Possible, Probable or Known Human Carcinogen According to Classifications By IARC or ACGIH
D2B	Skin Sensitizer
D2B	Eye or Skin Irritant

Hazardous Products Act Information: Hazardous Ingredients

This product contains the following ingredients which are Controlled Products and/or are on the Ingredient Disclosure List (Canadian HPA Section 13 and 14).

Component	CAS #	Amount W/W
Methyl ethyl ketone	78-93-3	> 50.0 - < 60.0 %
Carbon black	1333-86-4	> 5.0 - < 15.0 %
4,4' -Methylenediphenyl diisocyanate	101-68-8	> 0.1 - < 1.0 %
1-Isocyanato-3,3,5-trimethyl-5-isocyanatomethylcyclohexane	4098-71-9	> 0.1 - < 5.0 %

16. Other Information

Hazard Rating System

NFPA	Health 2	Fire 3	Reactivity 0
------	-------------	-----------	-----------------

Recommended Uses and Restrictions

A primer — For use in automotive applications.

Revision

Identification Number: 83520 / 0000 / Issue Date 2007.03.27 / Version: 3.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level

HAZ DES	Hazard Designation
VOL/VOL	Volume/Volume

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.



Material Safety Data Sheet

The Dow Chemical Company

Product Name: BETASEAL(TM) 58302N Urethane Sealant

Issue Date: 10/14/2011

Print Date: 30 Mar 2012

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name

BETASEAL™ 58302N Urethane Sealant

COMPANY IDENTIFICATION

The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
United States

Customer Information Number:

800-258-2436

SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact:

989-636-4400

Local Emergency Contact:

989-636-4400

2. Hazards Identification

Emergency Overview

Color: Black

Physical State: Paste

Odor: Solvent

Hazards of product:

WARNING! May cause allergic skin reaction. May cause allergic respiratory reaction. May cause eye irritation. May cause skin irritation. May cause central nervous system effects. May cause respiratory tract irritation. Isolate area. Keep upwind of spill.

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: May cause eye irritation.

Skin Contact: Prolonged contact may cause skin irritation with local redness.

Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

@(TM)*Trademark

Skin Sensitization: Skin contact may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

Inhalation: At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated material may cause respiratory irritation and other effects. May cause central nervous system effects. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. For the minor component(s): Methylenediphenyl diisocyanate (MDI). Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. Alcohol consumption and exertion may increase the adverse effects of toluene. This material contains mineral and/or inorganic fillers. There is essentially no potential for inhalation exposure to these fillers incidental to industrial handling due to the physical state. May cause pulmonary edema (fluid in the lungs.) Decreased lung function has been associated with overexposure to isocyanates. May cause nausea and vomiting.

Respiratory Sensitization: May cause allergic respiratory response. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

Ingestion: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. May cause nausea and vomiting. May cause abdominal discomfort or diarrhea.

Aspiration hazard: Based on physical properties, not likely to be an aspiration hazard.

Effects of Repeated Exposure: Contains component(s) which have been reported to cause effects on the following organs in animals: Liver. Kidney. Central nervous system. Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols. Toluene has caused hearing loss in laboratory animals upon exposure to high concentrations. Intentional misuse by deliberately inhaling toluene may cause nervous system damage, hearing loss, liver and kidney effects and death.

Cancer Information: Contains a phthalate ester which has caused cancer in rats and mice given high dietary doses. The material is considered to be a weak carcinogen in rodents but is not believed to pose a carcinogenic risk to humans at typical use conditions. Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

Birth Defects/Developmental Effects: Contains component(s) which did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother. In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother. Contains component(s) which caused birth defects in laboratory animals only at doses toxic to the mother.

Reproductive Effects: For the phthalate ester(s): In laboratory animals, excessive doses toxic to the parent animals caused decreased weight and survival of offspring.

3. Composition Information

Component	CAS #	Amount
MDI BASED URETHANE POLYMER P93-1485	Not available	> 35.0 - < 45.0 %
Carbon black	1333-86-4	> 20.0 - < 30.0 %
Diisononyl phthalate	28553-12-0	> 15.0 - < 25.0 %
Phthalic acid, di-C8-10-branched alkyl esters, C9-rich	68515-48-0	> 15.0 - < 25.0 %
Calcined clay	66402-68-4	> 5.0 - < 15.0 %
Toluene	108-88-3	< 10.0 %
4,4'-Methylenediphenyl diisocyanate	101-68-8	< 1.0 %
Hexamethylene-1,6-diisocyanate homopolymer	28182-81-2	< 1.0 %

4. First-aid measures

Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin Contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Safety shower should be located in immediate work area.

Eye Contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed

Maintain adequate ventilation and oxygenation of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. Alcohol consumed before or after exposure may increase adverse effects. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

5. Fire Fighting Measures

Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective. Water fog, applied gently may be used as a blanket for fire extinguishment.

Extinguishing Media to Avoid: Do not use direct water stream. May spread fire.

Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide. Combustion products may include trace amounts of: Hydrogen cyanide.

Unusual Fire and Explosion Hazards: Product reacts with water. Reaction may produce heat and/or gases. Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is produced when product burns.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be

moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep upwind of spill. Ventilate area of leak or spill. Refer to Section 7, Handling, for additional precautionary measures. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Vapor explosion hazard. Keep out of sewers. See Section 10 for more specific information. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Cat litter. Sand. Sawdust. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. Handling and Storage

Handling

General Handling: Keep away from heat, sparks and flame. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. No smoking, open flames or sources of ignition in handling and storage area. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Storage

Minimize sources of ignition, such as static build-up, heat, spark or flame. Store in tightly closed, properly vented containers. Protect from atmospheric moisture. Store indoors. Store in a dry place. Do not store product contaminated with water to prevent potential hazardous reaction.

Shelf life: Use within
9 Months

Storage temperature:
10 - 35 °C

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
4,4'-Methylenediphenyl diisocyanate	ACGIH	TWA	0.005 ppm

	OSHA Table Z-1	Celling	0.2 mg/m3	0.02 ppm
Toluene	ACGIH	TWA	20 ppm	BEI
	OSHA/Z2	TWA	200 ppm	
	OSHA/Z2	Celling	300 ppm	
	OSHA/Z2	MAX. CONC	500 ppm	10 minutes

Although some of the fillers used in this product may have exposure guidelines, no exposure would be expected under normal handling conditions because of the physical state of the material. A BEI notation following the exposure guideline refers to a guidance value for assessing biological monitoring results as an indicator of the uptake of a substance from all routes of exposures.

Personal Protection

Eye/Face Protection: Use safety glasses (with side shields).

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber, Chlorinated polyethylene, Polyethylene, Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Neoprene, Nitrile/butadiene rubber ("nitrile" or "NBR"), Polyvinyl chloride ("PVC" or "vinyl"), Viton. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline.

When atmospheric levels may exceed the exposure guideline, use an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. The odor and irritancy of this material are inadequate to warn of excessive exposure.

9. Physical and Chemical Properties

Appearance

Physical State	Paste
Color	Black
Odor	Solvent
Odor Threshold	No test data available
pH	No test data available
Melting Point	No test data available
Freezing Point	No test data available
Boiling Point (760 mmHg)	No test data available.
Flash Point - Closed Cup	Not applicable
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	No
Flammable Limits in Air	Lower: No test data available Upper: No test data available

Vapor Pressure	No test data available
Vapor Density (air = 1)	No test data available
Specific Gravity (H ₂ O = 1)	1.19 ASTM D1475
Solubility in water (by weight)	No test data available
Partition coefficient, n-octanol/water (log Pow)	No test data available
Autoignition Temperature	No test data available
Decomposition Temperature	No test data available
Kinematic Viscosity	Not applicable
Explosive properties	no data available
Oxidizing properties	no data available
Volatile Organic Compounds	0.41 lb/gal EPA Method No. 24 (typical value)

10. Stability and Reactivity

Reactivity

No dangerous reaction known under conditions of normal use.

Chemical stability

Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions

Polymerization will not occur.

Conditions to Avoid: Some components of this product can decompose at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems. Avoid moisture. Material reacts slowly with water, releasing carbon dioxide which can cause pressure buildup and rupture of closed containers. Elevated temperatures accelerate this reaction.

Incompatible Materials: Reaction with water will generate heat. Avoid contact with: Acids. Alcohols. Amines. Water. Ammonia. Bases. Metal compounds. Moist air. Strong oxidizers. Reaction with water will generate carbon dioxide.

Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials. Gases are released during decomposition.

11. Toxicological Information

Acute Toxicity

Ingestion

Single dose oral LD50 has not been determined.

Dermal

The dermal LD50 has not been determined.

Inhalation

The LC50 has not been determined.

Eye damage/eye irritation

May cause eye irritation.

Skin corrosion/irritation

Prolonged contact may cause skin irritation with local redness.

Sensitization

Skin

Skin contact may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

Respiratory

May cause allergic respiratory response. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may

include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

Repeated Dose Toxicity

Contains component(s) which have been reported to cause effects on the following organs in animals: Liver, Kidney, Central nervous system. Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols. Toluene has caused hearing loss in laboratory animals upon exposure to high concentrations. Intentional misuse by deliberately inhaling toluene may cause nervous system damage, hearing loss, liver and kidney effects and death.

Chronic Toxicity and Carcinogenicity

Contains a phthalate ester which has caused cancer in rats and mice given high dietary doses. The material is considered to be a weak carcinogen in rodents but is not believed to pose a carcinogenic risk to humans at typical use conditions. Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI. For the phthalate ester(s): Kidney effects and/or tumors have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans. Liver effects and/or tumors have been observed in rats. These effects are believed to be species specific and unlikely to occur in humans.

Developmental Toxicity

Contains component(s) which did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother. In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother. Contains component(s) which caused birth defects in laboratory animals only at doses toxic to the mother.

Reproductive Toxicity

For the phthalate ester(s): In laboratory animals, excessive doses toxic to the parent animals caused decreased weight and survival of offspring. There were no effects on fertility at any dose. For the phthalate ester component: Minimal effects on reproduction considered secondary to parental toxicity were observed when given to animals at very high dietary doses. A lower dose produced parental toxicity but no reproductive effects. There were no effects on fertility at any dose.

Genetic Toxicology

For the phthalate ester(s): In vitro genetic toxicity studies were negative. Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative. The majority and most reliable of the many genetic toxicity studies on toluene, both in vitro and in animals, indicate that it is not genetically toxic.

12. Ecological Information

Toxicity**Data for Component: MDI BASED URETHANE POLYMER P93-1485**

Not expected to be acutely toxic to aquatic organisms.

Data for Component: Carbon black

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, golden orfe (*Leuciscus idus*), static, 96 h: > 1,000 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, water flea *Daphnia magna*, 24 h, immobilization: > 5,600 mg/l

Data for Component: Diisononyl phthalate

Toxicity to aquatic species occurs at concentrations above material's water solubility.

Data for Component: Phthalic acid, di-C8-10-branched alkyl esters, C9-rich

Toxicity to aquatic species occurs at concentrations above material's water solubility.

Data for Component: Calcined clay

Not expected to be acutely toxic to aquatic organisms.

Data for Component: Toluene

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, *Oncorhynchus mykiss* (rainbow trout), semi-static test, 96 h: 5.8 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, *Daphnia magna* (Water flea), static test, 24 h, Immobilization: 7 mg/l

Aquatic Plant Toxicity

EbC50, *Pseudokirchneriella subcapitata* (green algae), biomass growth inhibition, 72 h: 12.5 mg/l

Toxicity to Micro-organisms

IC50; Bacteria, 16 h: 29 mg/l

Aquatic Invertebrates Chronic Toxicity Value

Daphnia magna (Water flea), 21 d, number of offspring, NOEC: 2 mg/l

Toxicity to Soil Dwelling Organisms

LC50, *Eisenia fetida* (earthworms): 150 - 280 mg/kg

Data for Component: 4,4'-Methylenediphenyl diisocyanate

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

Based on information for a similar material: LC50, *Danio rerio* (zebra fish), static, 96 h: > 1,000 mg/l

Aquatic Invertebrate Acute Toxicity

Based on information for a similar material: EC50, water flea *Daphnia magna*, static, 24 h: > 1,000 mg/l

Aquatic Plant Toxicity

Based on information for a similar material: NOEC, *Scenedesmus subspicatus* (new name: *Desmodesmus subspicatus*), static, Growth rate inhibition, 72 h: 1,640 mg/l

Toxicity to Micro-organisms

Based on information for a similar material: EC50; activated sludge, static, 3 h: > 100 mg/l

Toxicity to Soil Dwelling Organisms

EC50, Earthworm *Eisenia foetida*, adult, 14 d: > 1,000 mg/kg

Data for Component: Hexamethylene-1,6-diisocyanate homopolymer

For the major component(s): Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

NOEC mortality, zebra fish (*Brachydanio rerio*), static, 96 h: > 100 mg/l

Aquatic Invertebrate Acute Toxicity

NOEC, water flea *Daphnia magna*, static, 48 h, immobilization: > 100 mg/l

Aquatic Plant Toxicity

EC50, alga *Scenedesmus* sp., static, biomass growth inhibition, 72 h: > 1,000 mg/l

Toxicity to Micro-organisms

EC50, OECD 209 Test; activated sludge, 3 h: > 1,000 mg/l

Persistence and Degradability**Data for Component: MDI BASED URETHANE POLYMER P93-1485**

Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

Data for Component: Carbon black

Biodegradation is not applicable.

Data for Component: Diisononyl phthalate

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
74 %	28 d	OECD 301C Test	Not applicable
> 99 %	28 d	OECD 302A Test	Not applicable

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
2.34E-11 cm ³ /s	5.487 h	Estimated.

Theoretical Oxygen Demand: 2.64 mg/mg

Data for Component: Phthalic acid, di-C8-10-branched alkyl esters, C9-rich

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
74 %	28 d	OECD 301C Test	Not applicable
> 99 %	28 d	OECD 302A Test	Not applicable

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
2.34E-11 cm ³ /s	5.487 h	Estimated.

Theoretical Oxygen Demand: 2.64 mg/mg

Data for Component: Calcined clay

Biodegradation is not applicable.

Data for Component: Toluene

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
100 %	14 d	OECD 301C Test	Not applicable

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
5.23E-12 cm ³ /s	2 d	Estimated.

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
53 - 56 %		59 - 80 %	

Theoretical Oxygen Demand: 3.13 mg/mg

Data for Component: 4,4'-Methylenediphenyl diisocyanate

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

OECD Biodegradation Tests: Based on information for a similar material:

Biodegradation	Exposure Time	Method	10 Day Window
0 %	28 d	OECD 302C Test	Not applicable

Data for Component: Hexamethylene-1,6-diisocyanate homopolymer

For this family of materials: In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
0 %	28 d	No data available.	fail

Bioaccumulative potential

Data for Component: MDI BASED URETHANE POLYMER P93-1485

Bioaccumulation: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

Data for Component: Carbon black

Bioaccumulation: No data available.

Bioconcentration Factor (BCF): No data available.

Data for Component: Diisononyl phthalate

Bioaccumulation: Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7).

Partition coefficient, n-octanol/water (log Pow): 9.37 Estimated.

Data for Component: Phthalic acid, di-C8-10-branched alkyl esters, C9-rich

Bioaccumulation: Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7).

Partition coefficient, n-octanol/water (log Pow): 9.37 Estimated.

Data for Component: Calcined clay

Bioaccumulation: Partitioning from water to n-octanol is not applicable.

Data for Component: Toluene

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): 2.73 Measured

Bioconcentration Factor (BCF): 13.2 - 90; fish; Measured

Data for Component: 4,4'-Methylenediphenyl diisocyanate

Bioaccumulation: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Data for Component: Hexamethylene-1,6-diisocyanate homopolymer

Bioaccumulation: For this family of materials: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Mobility in soilData for Component: MDI BASED URETHANE POLYMER P93-1485

Mobility in soil: No relevant data found.

Data for Component: Carbon black

Mobility in soil: No relevant data found.

Data for Component: Diisononyl phthalate

Mobility in soil: Expected to be relatively immobile in soil (Koc > 5000).

Partition coefficient, soil organic carbon/water (Koc): > 5,000 Estimated.

Henry's Law Constant (H): 1.49E-06 atm*m3/mole; 25 °C Estimated.

Data for Component: Phthalic acid, di-C8-10-branched alkyl esters, C9-rich

Mobility in soil: Expected to be relatively immobile in soil (Koc > 5000).

Partition coefficient, soil organic carbon/water (Koc): > 5,000 Estimated.

Henry's Law Constant (H): 1.49E-06 atm*m3/mole; 25 °C Estimated.

Data for Component: Calcined clay

Mobility in soil: No relevant data found.

Data for Component: Toluene

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient, soil organic carbon/water (Koc): 37 - 178 Estimated.

Henry's Law Constant (H): 6.46E-03 atm*m3/mole; 25 °C Estimated.

Data for Component: 4,4'-Methylenediphenyl diisocyanate

Mobility in soil: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Data for Component: Hexamethylene-1,6-diisocyanate homopolymer

Mobility in soil: No relevant data found.

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with

applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

Treatment and disposal methods of used packaging: Empty containers should be recycled or otherwise disposed of by an approved waste management facility. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Do not re-use containers for any purpose.

14. Transport Information

DOT Non-Bulk
NOT REGULATED

DOT Bulk

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Technical Name: TOLUENE

Hazard Class: 9 **ID Number:** UN3077 **Packing Group:** PG III

IMDG
NOT REGULATED

ICAO/IATA
NOT REGULATED
Additional Information

Reportable quantity: 10,000 lb – TOLUENE

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	No
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS #	Amount
Toluene	108-88-3	< 10.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:
The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Carbon black	1333-86-4	> 20.0 - < 30.0 %
Diisononyl phthalate	28553-12-0	> 15.0 - < 25.0 %
Phthalic acid, di-C8-10-branched alkyl esters,	68515-48-0	> 15.0 - < 25.0 %
C9-rich		
Toluene	108-88-3	< 10.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

The following product components are cited in the New Jersey Environmental Hazardous and Workplace Hazardous Substance Lists:

Component	CAS #	Amount
Carbon black	1333-86-4	> 20.0 - < 30.0 %
Toluene	108-88-3	< 10.0 %

US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

The following product components are cited in the New Jersey Special Hazardous Substance List:

Component	CAS #	Amount
Carbon black	1333-86-4	> 20.0 - < 30.0 %
Toluene	108-88-3	< 10.0 %

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

All components of this product are either on the TSCA Inventory, are exempt from TSCA Inventory Requirements under 40 CFR 720.30, or comply with the PMN Polymer Exemption 40 CFR 723.250.

16. Other Information

Recommended Uses and Restrictions

Identified uses

A urethane adhesive -- For use in automotive applications.

Revision

Identification Number: 51010 / 1001 / Issue Date 10/14/2011 / Version: 17.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit

STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The Information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The Information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 4X Ink
SYNONYMS: 4X Water Removable Ink, Water Removable Ink
COLORS: All dye colors except black

SUPPLIER: Specialty Ink Company, Inc.
ADDRESS: 20 Dunton Avenue
Deer Park, NY 11729

EMERGENCY PHONE: 800-688-4005 - VEOLIA
OTHER CALLS 631-586-3666
FAX PHONE: 631-586-3874

PREPARED BY: Keith Werwa

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS NO.</u>	<u>% VOL</u>	<u>SARA 313 Reportable</u>	<u>Exposure Limit ACGIH-TLV</u>	<u>Exposure Limit OSHA PEL</u>
Cellosolve Solvent	110-80-5	10-15	Yes	5 ppm	200 ppm
Water	7732-18-5	75-80			

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Do not get in eyes, on skin or clothing. Do not breathe vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

ROUTES OF ENTRY: Dermal contact. Eye contact. Inhalation. Ingestion.

POTENTIAL ACUTE HEALTH EFFECTS

EYES: Irritation to eyes

SKIN: Irritation to skin

INGESTION: May cause nausea and or vomiting

INHALATION: May be toxic by inhalation. Irritation to the respiratory system.

SECTION 4: FIRST AID MEASURES

EYES: Affected individual should remove contact lens, if present. In case of contact with eyes, rinse immediately with plenty of water or saline solution. Get medical attention if irritation occurs.

SKIN: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation occurs.

INGESTION: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately

INHALATION: If inhaled, remove to fresh air. Get medical attention if symptoms appear. If exposed person is not breathing, give artificial respiration or oxygen applied by trained personnel.

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR, UPPER: 9.5
(% BY VOLUME) LOWER: 6.5

FLASH POINT: 110 F
METHOD USED: Closed cup

AUTOIGNITION TEMPERATURE: 455 F

NFPA HAZARD CLASSIFICATION

HEALTH: 1

FLAMMABILITY: 2

REACTIVITY: 0

HMIS HAZARD CLASSIFICATION

HEALTH: 1

FLAMMABILITY: 2

REACTIVITY: 0

PROTECTION: B

EXTINGUISHING MEDIA: Carbon dioxide. Dry chemical. Alcohol Foam. Water spray. Water in ink will stop fire after flash

SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should wear appropriate protective equipment and self contained breathing apparatus (SCBA) with a full facepiece operated in positive pressure mode.

SECTION 5 NOTES: Avoid heat, sparks and open flame. Slightly flammable to flammable in presence of heat. Use an extinguishing agent suitable for surrounding fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Remove sources of ignition. Ventilate.

ENVIRONMENTAL PRECAUTIONS: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

METHODS FOR CLEANING UP:

Small spill and leak: Absorb with an inert material and place in an appropriate waste disposal container.

Large spill and leak: Contain and cover spill with an absorbent material. Collect and dispose in chemical waste drum. Use appropriate containment to avoid environmental contamination. Place spilled material in an appropriate container for disposal.

SECTION 7: HANDLING AND STORAGE

HANDLING: Do not ingest. Do not get in eyes, on skin or on clothing. Keep container closed. Use only with adequate ventilation. Do not breathe vapor or mist. Wash thoroughly after handling.

STORAGE: Keep container tightly closed. Keep container in a cool, well ventilated area.

STORAGE TEMPERATURE: 50-80 F

SHELF LIFE: Dye based ink - 12 months from date of manufacture. Pigment based ink - 9 months from date of manufacture

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location

PERSONAL PROTECTION:

RESPIRATORY PROTECTION: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

EYE PROTECTION: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

SKIN PROTECTION: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

PERSONAL PROTECTION IN CASE OF LARGE SPILL: Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

EXPOSURE GUIDELINES: See section 2

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE AND APPEARANCE: Liquid

ODOR: Mild

BOILING POINT: 212 F

MELTING POINT: -148 F

VAPOR PRESSURE (mmHg): 4

VAPOR DENSITY (AIR = 1): 3.1

SPECIFIC GRAVITY (H₂O = 1): 1.021

REACTIVITY IN WATER: None

SOLUBILITY IN WATER: Complete

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID (STABILITY): Heat, sparks and open flame

INCOMPATIBILITY (MATERIAL TO AVOID): Strong oxidizing agents

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Burning may produce CO and CO₂

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID (POLYMERIZATION): None

SECTION 11: TOXICOLOGICAL INFORMATION

CELLOSOLVE SOLVENT TOXICOLOGICAL INFORMATION: Oral rat LD₅₀: 2125 mg/kg; inhalation rat LC₅₀: 2000 ppm/7H; irritation eye rabbit, standard Draize: 50 mg moderate; skin rabbit, standard Draize: 500 mg open mild; Investigated as a tumorigen, mutagen, reproductive effector. In laboratory animals, this compound has caused both birth defects and damage to the reproductive system. Exposure to this compound has also caused decreased sperm counts in humans.

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL TOXICITY

CELLOSOLVE SOLVENT:

The LC₅₀/96-hour values for fish are over 100 mg/l. This material is not expected to be toxic to aquatic life.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. The user of this material has the responsibility to dispose of container and unused contents in accordance with federal, state and local requirements.

SECTION 14: TRANSPORT INFORMATION

Refer to the following when using the below information and reshipping Inks and Thinners:

FLASH POINT 73 - 149 (HAZARDOUS BY GROUND IN 5 GALLON CONTAINER)
FLASHPOINT UNDER 73 (HAZARDOUS BY GROUND IN QUART OR LARGER CONTAINER)
AND FLASHPOINT 149 OR UNDER (HAZARDOUS BY AIR IN ANY UNIT OF MEASURE)

If size deems shipment hazardous, below markings are required

U.S. DEPARTMENT OF TRANSPORTATION (LAND, D.O.T.)

PROPER SHIPPING NAME: Printing Ink

HAZARD CLASS: 3

ID NUMBER: 1210

PACKING GROUP: III

WATER TRANSPORTATION (WATER, I.M.O.)

PROPER SHIPPING NAME: Combustible Liquid
HAZARD CLASS: 3
ID NUMBER: 1993
PACKING GROUP: III

AIR TRANSPORTATION (AIR, I.C.A.O.)
PROPER SHIPPING NAME: Printing Ink
HAZARD CLASS: 3
ID NUMBER: 1210
PACKING GROUP: III

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

TSCA (TOXIC SUBSTANCE CONTROL ACT):

Cellosolve Solvent 110-80-5

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): Contains no chemicals subject to CERCLA

311/312 HAZARD CATEGORIES: "Fire Hazard", "Immediate Acute Health Hazard", "Flammable Liquid"

313 REPORTABLE INGREDIENTS:

Cellosolve Solvent is subject to reporting requirements of SARA Title III, Section 313 of the Emergency Planning Community Right to Know Act of 1986 and of 40 CFR 372. This product is in compliance with the EPA TSCA inventory.

STATE REGULATIONS: California Safe Drinking Water Act (Prop 65) Listing: "WARNING: This product contains a chemical known to the State of California to cause cancer and/or birth defects or other reproductive harm"

SECTION 16: OTHER INFORMATION

OTHER INFORMATION: The hazards listed on this MSDS are taken from the MSDS for each of the ingredients in this mixture. In most cases, the maximum form of hazard is represented here. The TLV's represent the conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect. It must be remembered that each individual reacts differently and some may experience discomfort while others do not. This MSDS is presented so that each individual will have the information to deal safely with the use of this product. All material's TSCA listed.

PREPARATION INFORMATION: Prepared by Specialty Ink Company, Inc.
DATE PREPARED: January 12, 2009

DISCLAIMER: As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim all liability for any use of this material. Information contained herein is given in good faith and is believed to be true and accurate. All statements or suggestions are made without any warranty, expressed or implied, regarding the accuracy of the information, the hazards connected with the use of the material or results to be obtained from the use thereof.

EMANUEL, DONNA

From: Horner, Robert G [Robert.Horner@nsg.com]
Sent: Wednesday, August 08, 2012 11:46 AM
To: EMANUEL, DONNA; Russ, Joseph D
Cc: PARSONS, LEE; County, Johnson; Chastain, Gregory W; Rygalski, Pamela A; Hethcote, Penelope J
Subject: RE: NSG Group (Formerly Pikington North)

Ms. Emanuel,

This is to acknowledge the receipt of your e-mail and attached documentation.

Kind Regards,

Bob Horner
NSG – Franklin
Operations Manager
317-401-0010

From: EMANUEL, DONNA [<mailto:DEMANUEL@idem.IN.gov>]
Sent: Wednesday, August 08, 2012 11:35 AM
To: Russ, Joseph D; Horner, Robert G
Cc: PARSONS, LEE; County, Johnson
Subject: NSG Group (Formerly Pikington North)

To Mr. Ross and Mr. Horner,

Attached you will find the inspection report the Mr. Lee Parson did at your facility on July 12. Once you are in receipt of this email with the attached document would you please reply back to me to let you know that you have received it.

Also, Mr. Parson ask that I attached the following to this email.

Thank you

Donna Emanuel, Administrative Assistant
IDEM/Office of Land Quality - Compliance Branch
Mail Code: 66-20 (1368)
100 North Senate Avenue
Indianapolis, Indiana 46204
demanuel@idem.in.gov
(317) 234-6923
(317) 234-0428 - Fax

<http://nsg.com/disclaimer>