

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Urethane Pavoc 321 part A (clear)
PRODUCT CODES: 321A

MANUFACTURER: Chargar Corp
STREET ADDRESS: 299 Welton Street
CITY, STATE, ZIP: Hamden, CT 06517

Chemical Name or Class: Polyester polyol solution

SECTION 2: HAZARDS IDENTIFICATION**Hazard Overview**

GHS Classification: Flammable liquid category 3, Specific target organ toxicity – single exposure category 3, Acute oral toxicity category 4, Skin corrosion/irritation category 2, Serious eye irritation category 2A, Acute toxicity inhalation category 4, Acute hazard to aquatic environment category 3

GHS Label Elements and Precautionary Statements:

Label Elements: Flame, Exclamation Mark

Hazard Statements:

Warning: Flammable liquid and vapor.

Warning: May cause respiratory irritation

Warning: Harmful if swallowed

Warning: Causes skin irritation

Warning: Causes serious eye irritation

Warning: Harmful if inhaled

Harmful to aquatic life.

Precautionary statements:

P102 Keep out of reach of children.

P103 Read label before use

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting/.../equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray

P271 Use only outdoors or in a well-ventilated area.

P264 Wash hands thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

Response

P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P370 + P378 In case of fire: Use Foam, alcohol foam, CO2, dry chemical, water fog for extinction.

P304 + P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.

P312 If Inhaled, Call a POISON CENTER or doctor/physician if you feel unwell.

P301 + P312 IF SWALLOWED: call a POISON CENTER or doctor/physician IF you feel unwell.

P330 Rinse mouth.

P302 + P352 IF ON SKIN: wash with plenty of soap and water.

P333 + P313 IF SKIN irritation or rash occurs: Get medical advice/attention.

P362 + P364 Take off contaminated clothing and wash it before reuse.

P305 + P351 + P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 IF eye irritation persists: Get medical advice/attention.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

P233 Keep container tightly closed.

Disposal:

P501 Dispose of contents/container to a waste disposal facility in accordance with local, state, federal or international laws

HMIS HAZARD CLASSIFICATION

HEALTH: 2

FLAMMIBILITY: 3

REACTIVITY: 0

PERSONAL PROTECTIVE EQUIPMENT: G

POTENTIAL HEALTH EFFECTS**EYES:**

May cause corneal damage if left untreated which is slow to heal but usually reversible.

SKIN:

May cause irritation or allergic response. May cause defatting, dryness, cracking, rash or redness or dermatitis.

SKIN ABSORPTION:

Solvents can penetrate the skin causing effects similar to those for acute inhalation symptoms.

SAFETY DATA SHEET

PRODUCT CODE: 321

INGESTION:

Can cause irritation to the digestive tract including sore throat, abdominal pain, nausea, vomiting and diarrhea. Vomiting may Cause Aspiration of solvents resulting in chemical pneumonitis.

INHALATION health risks and symptoms of exposure:

Solvent vapors are irritating to the eyes, nose and throat and respiratory tract resulting in dryness of the throat and tightness in the chest. Other symptoms include headache, nausea, narcosis, fatigue and loss of appetite.

HEALTH HAZARDS (ACUTE AND CHRONIC):

Chronic Exposure to organic solvents has been associated with various neurotoxic effects including brain damage, nervous system damage or death. Prolonged vapor contact may cause conjunctivitis. Chronic inhalation may also include loss of memory, loss of intellectual ability and loss of coordination. Corneal damage is possible but usually reversible. Repeated Exposure to solvents can cause anemia, liver abnormalities, kidney damage or cardiac abnormalities.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Respiratory conditions or other allergic response.

CARCINOGENICITY

OSHA: NO NTP: NO IARC: yes

ADDITIONAL CARCINOGENICITY INFORMATION:

May Contain Ethyl Benzene (IARC possible carcinogen)

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OSHA STEL</u>	<u>WEIGHT %</u>
Propylene Glycol Monomethyl Ether Acetate	108-65-6	50ppm	none	10-30	
Saturated Polyester Polyol (non-hazardous)	unknown	none	none	30-60	
Polyester Polyol	67815-82-1	none	none	none	3-7
Siloxanes and silicones, di-me reactions products with silica (non-hazardous)	67762-90-7	none	none	none	0.1-1
siloxanes and silicones, di-methyl (non-hazardous)	63148-62-9	none	none	none	0.1-1
*Xylene	1330-20-7	100 ppm	100 ppm	150 ppm	<0.5
2,6-Dimethyl-4-Heptanone	108-83-8	25 ppm	25 ppm	none	0.1-1
*Ethyl benzene	100-41-4	100 ppm	100 ppm	125 ppm	<0.5
polyalkylene glycol	9038-95-3	none	none	none	0.1-1
4,6-dimethyl-2-heptanone	19549-80-5	none	none	none	0.1-1
Dibutyltin Dilurate	77-58-7	0.1mg / m3	0.1mg / m3	0.1mg / m3	0.1-1
Cellulose Acetate Butyrate	9004-36-8	none	none	none	0.1-1
Methyl N-Amyl Ketone	110-43-0	100 ppm	50 ppm	none	10-30
Ethyl 3-Ethoxypropionate	763-69-9	none	none	none	10-30
Additive	NJTSRN 800963-5023	none	none	none	0.1-1
Light stabilizer	Trade Secret	none	none	none	0.1-1
Benzotriazole Derivative, Branched Ester	Trade Secret	none	none	none	0.1-1

SECTION 3 NOTES: *Indicates toxic chemical(s) subject to reporting requirements of section 313 of Title III and of 40 CFR 372. All components are on the TSCA list. Xylene Stel= 150PPM (ACGIH) Methyl N-Amyl Ketone Stel (ACGIH)= 100PPM. Ethyl 3-Ethoxypropionate: USA country specific exposure limits have not been established or are not applicable. Chemical company exposure limit (TLV) 50ppm and (STEL) 100ppm are recommended. Canada, Ontario OEL (Ministry of Labor – Control of Exposure) TWA 50ppm.

Note: Ingredients listed without percentages, the percentages are considered a trade secret.

SECTION 4 FIRST AID MEASURES

EYES:

Flush eyes with water for at least fifteen minutes and consult a physician.

SKIN:

Wash affected area with soap and water and remove contaminated clothing promptly.

INGESTION:

Do not induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician.

INHALATION:

Remove victim to fresh air area and administer oxygen if necessary. Consult a physician if necessary.

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR, (% BY VOLUME) **UPPER:** not available
LOWER: not available

FLASH POINT: 100F

METHOD USED:

Seta Flash

EXTINGUISHING MEDIA:

Foam, alcohol foam, CO2, dry chemical, water fog.

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PRODUCT CODE: 321

SPECIAL FIRE FIGHTING PROCEDURES:

Do not enter confined fire area without full bunker gear including a positive pressure NIOSH approved self-contained breathing apparatus. Cool all fire exposed containers with water. Minimize contact with material.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Closed containers may explode when exposed to extreme heat. Solvent vapors may be heavier than air. Under conditions of stagnant air, vapors may build up and travel along the ground to an ignition source which can result in flash back to the source of the vapors. Toxic vapors could be evolved from the combustion of this material.

SECTION 6: RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Remove all sources of ignition and ventilate the area. Wear appropriate protective equipment such as vapor cartridge or air supplied respirator when necessary. Dike and absorb the material with absorbent such as clay and place in disposal containers.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Store in cool dry area. Seal all partially used containers. Wash with soap and water before eating, drinking, smoking or using the toilet facilities. Mixed materials contain the hazards of all the components, therefore, read the MSDS's of all the components prior to using the material. Properly label all containers.

OTHER PRECAUTIONS:

Avoid all skin contact. Avoid breathing vapors generated from the material. Observe conditions of good general hygiene and safe working practices. Contaminated leather articles cannot be cleaned and must be discarded if contaminated with this product. Wash all contaminated clothing prior to the reuse thereof. Supply appropriate ventilation or engineering controls prior to using this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION:

Use a NIOSH approved respirator as required to prevent over-exposure to vapor in accordance with 29 CFR 1910.134. Use a positive pressure respirator when airborne concentrations are not known or if exceeding TLV's or if working in a confined space. Always consider the hazards from all components in the mixed material state.

VENTILATION :

Exhaust ventilation sufficient to keep the airborne concentrations of the solvents and other hazardous materials below the toxic level concentrations.

PROTECTIVE GLOVES:

Impervious gloves – neoprene or rubber.

EYE PROTECTION:

Splash goggles or glasses with side shields. If the environment warrants, a full face shield should be employed.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Wear body covering clothing and other coverings as necessary such as an apron and appropriate footwear to avoid contact.

WORK HYGIENIC PRACTICES:

Observe good general hygienic practices.

SEE SECTION THREE FOR OCCPATONAL EXPOSURE LIMIT VALUES.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: low viscosity liquid with ketone solvent odor.

BOILING POINT OR RANGE: 279 to 329F

VAPOR DENSITY (AIR = 1): not available

SPECIFIC GRAVITY (H₂O = 1): 1.0

EVAPORATION RATE: not available

SOLUBILITY IN WATER: negligible

Odor Threshold: N/A

pH: N/A

Melting point/freezing point: N/A

Vapor Pressure: N/A

Auto Ignition Temperature: N/A

Partition Coefficient: n-octanol/water: N/A

Decomposition Temperature: N/A

SECTION 10: STABILITY AND REACTIVITY

STABILITY:

stable

CONDITIONS TO AVOID (STABILITY):

Avoid excessive heat or open flames. This material should not be mixed with phosphorous containing material or oxidizers.

INCOMPATIBILITY (MATERIAL TO AVOID):

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Can react Vigorously with strong oxidizing agents and phosphorous containing materials.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:

carbon monoxide and carbon dioxide.

HAZARDOUS POLYMERIZATION:

Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

No data for the product itself.

Component data:

Component Propylene Glycol Monomethyl Ether Acetate CAS# 108-65-6: LD50 Oral (rat) 8,532 mg/kg. LD50 Dermal (rabbit) >5000 mg/kg. LC0 Inhalation 6 hr (rat = 4345 ppm. Eye irritation, slightly Irritating. Dermal: non-sensitizer (guinea pig, maximization test). Repeated Dose Toxicity: 14 days, inhalation – NOAEL: 300ppm, LOAEL: 1000ppm (rat. Mutagenicity in vitro: Ames – negative (salmonella typhimurium, metabolic activation; with/without) Developmental Toxicity/Teratogenicity: Rat, female, inhalation, 6hrs/day 7 days a week; NOAEL (teratogenicity) . 4000 ppm – No Teratogenic effects observed at doses tested.

Component Polyester Polyol CAS# 67815-82-1: LD50 Oral (rat) > 2500 mg/kg. Skin Irritation (rabbit) time 8 hr – slightly irritating.

Component CAS# 9038-95-3: Acute oral toxicity LD50 = 5370 mg/kg (rat); Acute dermal toxicity LD50 = 21000 mg/kg (rabbit); Acute inhalation toxicity LC50 = 4670 ppm (rat); Skin irritation – slight irritation (rabbit); Eye irritation – mild irritation (rabbit)

Component CAS# 108-83-6: Acute oral toxicity LD50 = 5800 mg/kg (rat); Acute dermal toxicity LD50 = 16000 mg/kg (rabbit); Acute inhalation toxicity LC50 = 2000 ppm (rat); Skin irritation – slight irritation (rabbit); Eye irritation – mild eye irritation (rabbit)

Component Xylene: Inhalation LC50 26800ppm, Skin LD50 2000 mg/kg, Ingestion LD50 4.3 g/kg. Exposure may effect skin, eye, liver, kidney, nervous system, respiratory system and lungs. High concentrations may lead to nervous system effects. Repeated overexposure has produced toxic effects in developing and young laboratory animals. Xylene may contain ethyl benzene. Ethyl benzene has shown limited evidence of a carcinogenic effect.

Component Dibutyltin Dilurate CAS# 77-58-7: ACUTE ORAL TOX (LD50,RAT) 3200.00 MG/KG. ACUTE DERMAL TOX (LD50,RABBIT) >2000 MG/KG (NO DEATHS). ACUTE INHAL TOX (LC50, RAT) >8.10 MG/L/1 HR. AMES TEST: NEG (ACTIVATED & NONACTIVATED) INDUST CHEMS SUC H AS THIS MATL W/ACUTE TOX VALUES SHOWN & WHOSE VAPS/MISTS ARE NOT LIKELY TO BE ENCOUNTERED BY HUMANS WHEN USED IN ANY REASONABLY FORESEEABLE MANNER WOULD NOT REQ TOXIC LBL ACCORD TO U.S. DOMESTIC & I NTERNATIONAL TRANSPORT REQS. IRRIT EFTS DAT: SEV IRRITANT TO EYES OF RABBIT. MOD IRRITANT TO SKIN OF RABBIT.

Component Cellulose Acetate Butyrate Ester CAS# 9004-36-8: Oral LD-50: (Rat): > 3,200 mg/kg (highest dose tested). Dermal LD-50: (Guinea Pig): > 1,000 mg/kg (highest dose tested). Skin Corrosion: (Guinea Pig, 24 h): slight. Skin sensitization: not a sensitizer.

Component CAS# 110-43-0: Oral LD 50 (rat): 1600 mg/kg; Oral LD50 (mouse) 730 mg/kg; Inhalation LC50 (rat) 2000-4000 ppm, 4 hr. Dermal LD50 (rabbit) 10206 mg/kg; Dermal LD50 (guinea pig) >16200 mg/kg; Skin irritation (Rabbit) – slight to moderate; Eye irritation (rabbit) slight; Skin sensitization (human) none

Component 763-69-9: Acute oral toxicity LD50 = 5000 mg/kg (rat); acute dermal toxicity LD50 = 10000 mg/kg (rabbit). Component is a skin irritant.

Component additive NJTSRN 800963-5023: Acute oral toxicity: LD50 rat>8,000,000 mg/kg; skin irritation rabbit – no skin irritation

Component(s) Light stabilizer CAS# Trade Secret and Benzotriazole Derivative, Branched Ester CAS# Trade Secret: Acute oral toxicity:LD50 / oral / rat: > 2,000 mg/kg (Based on components). Skin irritation: Not expected to be a skin irritant. (based on known component information). Eye irritation: Not expected to be an eye irritant. (Based on components). Skin irritation: Not expected to be a skin irritant. (based on known component information). Eye irritation: Not expected to be an eye irritant. (Based on components). Skin Sensitization: Not expected to cause sensitization. (based on known component information). Subchronic Toxicity: Information on: Benzotriazole Derivative, Branched Ester

In a 14-day study, rats were administered the active ingredient at 0, 10, 100, or 1,000 mg/kg by gavage. The 100 and 1,000 mg/kg dose levels were found to cause elevated serum liver enzyme levels and enlarged livers. The no observable effect level (NOEL) was 10 mg/kg. In a 28-day study, rats were administered the active ingredient at 0, 2, 50, and 500 mg/kg by gavage. No treatment-related clinical or neurological signs of toxicity or mortalities were recorded. Treatment-related effects, including mild anemia and toxic effects in the liver, were seen. Slight activity of the thyroid gland was also recorded and considered a secondary response to the effects in the liver. The no observable effect level (NOEL) was 2 mg/kg. Information on: Decanedioic acid, bis(2,2,6,6-tetramethyl-4-piperidinyl)ester, reaction products with tert-Bu hydroperoxide and octane In a 28-day study, rats were administered daily oral doses of 10, 100 or 1000 mg/kg/day. Males only in the 1000 mg/kg dose group exhibited a reversible, minor effect on prothrombin time, as well as effects on

The formation and development of blood cells in the liver that were not totally reversed by the two-week recovery period. The no observable effect level (NOEL) was determined as 100 mg/kg in the males and 1000 mg/kg in the females. piperidinyl)ester, reaction products with tert-Bu hydroperoxide and octane Information on: Decanedioic acid, bis(2,2,6,6-tetramethyl-4- piperidinyl)ester, reaction products with tert-Bu hydroperoxide and octane. Genetic toxicity: Non-mutagenic (based on composition).

SECTION 12: ECOLOGICAL INFORMATION

No data for the product itself.

Component data:

Component Propylene Glycol Monomethyl Ether Acetate CAS# 108-65-6: Biodegradation: aerobic, 100%, exposure time: 8 days. Acute and Prolonged Toxicity to fish LC50: 161 mg/l (fathead minnow), 96 hr. Acute Toxicity to Aquatic Invertebrates: EC50: 408 mg/l (water flea), 48 hr.

Component Xylene: Acute Toxicity: Fish: Toxic 1 < LCECIC50 < 10mg/l, Aquatic Invertabrates: Toxic 1 < LC/EC/IC50 <10mg/l, Algae: Toxic 1 < LC/EC/IC50 <10 mg/l. Mobility – floats on water. If it enters the soil it will be highly mobile and may contaminate groundwater. Oxidises rapidly by photo-chemical reactions in air.

Component CAS# 110-43-0: BOD-5: 1770 mg/kg; BOD-20: 2000 mg/kg; COD: 2420 mg/kg. Acute Aquatic Effects: 96 hr LC50 (fathead minnow) 131 mg/l and 48 hr EC50 (daphnia) >90 mg/l (highest concentration tested)

Component 763-69-9: Possibly hazardous short term degradation products are not likely, however long term degradation products may arise. The product itself and its products of degradation are not toxic.

SECTION 13: WASTE DISPOSAL

WASTE DISPOSAL METHOD:

Dispose of the material in a waste disposal site in accordance with local, state, and federal laws. Empty containers should be handled with care due to product residue and possible vapor from organic solvents. Never use a gas or electric torch to cut the drums.

SECTION 14: Transport Information

DOT: UN1993, FLAMMABLE LIQUID N.O.S. (CONTAINS XYLENE, ETHYL BENZENE), 3, PG III

IMO/IMDG: UN1993, FLAMMABLE LIQUID N.O.S. (CONTAINS XYLENE, ETHYL BENZENE), 3, PG III

SECTION 15: REGULATORY INFORMATION

No data for the product itself.

Component data:

Component Saturated Polyester Polyol (non-hazardous): Europe Inventory: Component is listed or exempted. Canada Inventory: Component is listed or exempted. Canadian NPRI not required. United States Inventory: Component is listed (TSCA 8b) or exempted.

Component Propylene Glycol Monomethyl Ether Acetate CAS# 108-65-6: Listed on TSCA and DSL Component listed on the Pennsylvania, New Jersey and Massachusetts Right to know lists.

Component Polyester Polyol CAS# 67815-82-1: : Listed on TSCA and DSL Component listed on the Pennsylvania, New Jersey and Massachusetts Right to know lists.

Component Siloxanes and silicones, di-me reactions products with silica: Included on TSCA, EINECS, MITI, ACOIN, and Canadian DSL inventory or lists.

Component siloxanes and silicones, di-methyl: Included on TSCA, EINECS, MITI, ACOIN, and Canadian DSL inventory or lists.

Component CAS# 108-83-6: Pennsylvania, Massachusetts and New Jersey Right to Know, (On TSCA, DSL lists)

Component CAS# 9038-95-3 Pennsylvania and New Jersey Right to know (On TSCA, DSL Lists)

Component Xylene:Xylene contains EPCRA section 313 chemicals subject to the reporting requirements of the emergency planning and community right to know act of 1968. (Maximum wt % for components of xylene are: M-Xylene CAS# 108-38-3 is 46%, P-Xylene CAS# 106-42-3 is 20%, Ethyl Benzene CAS# 100-41-4 is 19%, O-Xylene CAS# 95-47-6 is 16%.. Xylene and its components are on the California Proposition 65 list for developmental toxicity, Reproductive toxicity and carcinogen list. Ingredients are on the TSCA list, DSL Canada, AICS, China, EINECS, ENCS, Korea, New Zealand, Philippines inventory lists and on the Massachusetts, New Jersey, Pennsylvania right to know lists Ethyl Benzene a component of xylene has been designated by IARC as a possible carcinogen to humans based on increased tumor incidence in laboratory animals. risk phrases R10 Flammable R20/21 Harmful by inhalation and in contact with skin, R38 irritating to skin, S25 Avoid contact with eyes.

Component Dibutyltin Dilurate CAS# 77-58-7: Sara Title III Information: TOXIC SUBSTANCES CONTROL ACT (TSCA): ALL COMPONENTS ARE INCL IN EPA TOXIC SUBSTANCES CTL ACT (TSCA) CHEM SUBSTANCE INVENTORY. OSHA HAZARD COMMUNICATION STD (29CFR1910.1200) HAZARD CLASS(ES): IRRITANT.KIDNEY TOXIN. EPA SARA TITLE III SECTION 312 (40CFR370) HAZARD CLASS. IMMED HLTH HAZARD. EPA SARA TITLE III 313 (40CFR372) TOXIC CHEMICALS "DE MINIMIS" LEVEL ARE NONE. Federal Regulatory Information: CANADA DSL-INCL ON INVENTORY. HAZARD CLASSIFICATION-CLASS D DIVISION 2B..(EEC). EINECS /ELINCS MASTER INVENTORY-INCLUDED ON INVENTORY. EEC SYMBOL-HARMFUL (XN). EEC RISK (R) PHRASES-IRRITATING TO EYES & SKIN (R36/38). HARMFUL BY INHAL (R20). EEC SFTY PHRASES-IN CASE OF CONT W/EYES, RINSE IMMED W/PLENTY OF WATER & SEEK MED ADVICE (S26). AUSTRALIA-AICS-INCLUDED ON INVENTORY. State Regulatory Information: STATE REGS: PROPOSITION 65 SUBSTANCES (COMPONENT(S) KNOWN TO STATE OF CALIFORNIA TO CAUSE CANCER AND/OR REPRODUCTIVE TOXICITY & SUBJECT TO WARNING & DISCHARGE REQUIREMENTS UNDER "SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986"):NONE.

Component Cellulose Acetate Butyrate Ester CAS# 9004-36-8: WHMIS (Canada) Status: noncontrolled, OSHA: nonhazardous, TSCA (US Toxic Substances Control Act): This product is listed on the TSCA inventory. Any impurities present in this product are exempt from listing. DSL (Canadian Domestic Substances List) and CEPA (Canadian Environmental Protection Act): This product is listed on the DSL. Any impurities present in this product are exempt from listing. AICS / NICNAS (Australian Inventory of Chemical Substances and National Industrial Chemicals Notification and Assessment Scheme): This product is listed on AICS or otherwise complies with NICNAS. MITI (Japanese Handbook of Existing and New Chemical Substances): This product is listed in the Handbook or has been approved in Japan by new substance notification. ECL (Korean Toxic Substances Control Act): This product is listed on the Korean inventory or otherwise complies with the Korean Toxic Substances Control Act. Philippines Inventory (PICCS) : This product is listed on the Philippine Inventory or otherwise complies with PICCS. Inventory of Existing Chemical Substances in China: All components are listed on the Inventory of Existing Chemicals Substances in China (IECSC) or are covered under a polymer exemption.

Component CAS# 110-43-0: On DSL and TSCA, EINECS, AICS, MITI and ECL lists.

Component 763-69-9: is on the TSCA EINECS and DSL Lists

Component additive NJTSRN 800963-5023: on TSCA List. Not a California Prop 65 chemical

Component(s) Light stabilizer CAS# Trade Secret and Benzotriazole Derivative, Branched Ester CAS# Trade Secret:

Canada: Domestic Substances List (DSL): All components either exempt or listed on the DSL. This material does not contain any hazardous components that are reportable according to WHMIS criteria. US: Toxic Substances Control Act (TSCA): All component(s) comprising this product are either exempt or listed on the TSCA inventory

SECTION 16: OTHER INFORMATION

DISCLAIMER: The information Contained herein is based on the data available and is believed to be accurate, However, the manufacturer makes no warranty expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. Accordingly, we assume no responsibility for injury from the use of this product.

SAFETY DATA SHEET

PRODUCT CODE: 321

N/A = Not Available
See Section 1 for date of preparation

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Urethane 321 part B (clear)
PRODUCT CODES: 321B

MANUFACTURER: Chargar Corp
STREET ADDRESS: 299 Welton Street
CITY, STATE, ZIP: Hamden, CT 06517

Chemical Name or Class: isocyanate/solvent mixture

SECTION 2: HAZARDS IDENTIFICATION

Hazard Overview

GHS Classification: Flammable liquid category 3, Specific target organ toxicity single exposure category 3, Specific target organ toxicity following repeated exposure category 2, Respiratory sensitization category 1B, Skin corrosion/irritation category 2, skin sensitizer category 1B, Serious eye irritation category 2B, Acute toxicity inhalation category 4, Acute hazard to aquatic environment category 3, Chronic hazards to aquatic environment category 3

SAFETY DATA SHEET

PRODUCT CODE: 321

GHS Label Elements and Precautionary Statements:

Label Elements: Flame, Health Hazard Exclamation Mark

Hazard Statements:

Warning: Flammable liquid and vapor

Warning: May cause respiratory irritation

Warning: May cause damage to organs (auditory) through prolonged or repeated exposure

Danger: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Warning: Causes skin irritation

Warning: May cause an allergic skin reaction

Warning: Causes serious eye irritation

Warning: Harmful if inhaled

Harmful to aquatic life

Harmful to aquatic life with long lasting effects

Precautionary statements:

P102 Keep out of reach of children.

P103 Read label before use

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting/.../equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P271 Use only outdoors or in a well-ventilated area.

P260 Do not breathe dust/fume/gas/mist/vapours/spray

P284 Wear respiratory protection

P264 Wash hands thoroughly after handling.

P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Wear protective gloves and clothing to prevent skin contact.

P273 Avoid release to the environment.

Response

P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P370 + P378 In case of fire: Use Foam, alcohol foam, CO2, dry chemical for extinction.

P304 + P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.

P312 If inhaled, Call a POISON CENTER or doctor/physician if you feel unwell.

P314 Get medical advice/attention if you feel unwell

P302 + P352 IF ON SKIN: wash with plenty of soap and water

P312 Call a POISON CENTER or doctor/physician if you feel unwell

P361+P364 Take off immediately all contaminated clothing and wash it before reuse

P304 + P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.

P342 + P311 IF experiencing respiratory symptoms: call a POISON CENTER or doctor/physician.

P333 + P313 IF SKIN irritation or rash occurs: Get medical advice/attention.

P305 + P351 + P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 IF eye irritation persists: Get medical advice/attention.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

P233 Keep container tightly closed.

Disposal:

P501 Dispose of contents/container to a waste disposal facility in accordance with local, state, federal or international laws

HMIS HAZARD CLASSIFICATION

HEALTH: 2

FLAMMIBILITY: 3

REACTIVITY: 1

PERSONAL PROTECTIVE EQUIPMENT: G

POTENTIAL HEALTH EFFECTS

EYES:

Can cause severe irritation, redness, tearing or blurred vision as well as corneal opacity and conjunctivitis.

SKIN:

May cause irritation, defatting, and dermatitis.

SKIN ABSORPTION:

Can cause reddening, swelling, rash, scaling or blistering. Overexposure may cause sensitization resulting in reaction to contact of small amounts.

INGESTION:

Can cause gastrointestinal irritation, nausea, vomiting, diarrhea. Aspiration of material into the lungs can cause chemical pneumonitis which can be fatal. Can cause corrosive action to mucous membranes and digestive tracts.

INHALATION health risks and symptoms of exposure:

Can cause nausea and respiratory irritation, dizziness, weakness, fatigue, nausea, headache, and possible unconsciousness. Burning sensation to mucous membranes, shortness of breath and flu like symptoms may occur.

HEALTH HAZARDS (ACUTE AND CHRONIC):

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Can cause sensitization by exposure through contact or high concentrations of vapor. Over-exposure to this material can cause cardiac abnormalities. Overexposure can possibly cause anemia. Liver abnormalities, kidney damage or eye damage. May cause asthma or other respiratory disorders, bronchitis, emphysema, hyperactivity and eczema.

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

Acute skin Contact: Isocyanates react with the skin protein and moisture and can cause irritation. Symptoms of skin irritation may be reddening, swelling, rash, scaling, or blistering. Some persons may develop skin sensitization from skin contact. Cured material is difficult to remove.

Chronic Skin contact: Prolonged contact with the isocyanate can cause reddening, swelling, rash, scaling, or blistering. In those who have developed a skin sensitization, these symptoms can develop as a result of contact with very small amounts of liquid material or even as a result of vapor-only exposure.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Respiratory conditions or other allergic response.

CARCINOGENICITY

OSHA: NO NTP: NO IARC: YES

Product may contain ethyl benzene as a component of xylene (IARC 2B)

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OSHA STEL</u>	<u>WEIGHT %</u>
Hopolymer of HDI	28182-81-2	1 mg/m3	NONE	NONE	60-100
*Xylene	1330-20-7	100 PPM	100 PPM	150 PPM	12
*Ethyl benzene (as a component of xylene)	100-41-4	100ppm	100ppm	125ppm	<2%
n-Butyl Acetate	123-86-4	150 PPM	150 PPM	200 PPM	7-13
*Hexamethylene Diisocyanate (HDI)	822-06-0	NONE	.005 PPM	NONE	<1%

*Indicates toxic chemical (s) subject to the reporting requirements of section 313 Title III and of 40 CFR 372. XYLENE ACGIH STEL= 150PPM.

Note: Ingredients listed without percentages, the percentages are considered a trade secret.

SECTION 4: FIRST AID MEASURES

EYES:

Flush eyes with water for at least fifteen minutes and consult a physician.

SKIN:

For extreme exposure use a safety shower immediately. Wash affected area with soap and water and remove contaminated clothing promptly.

INGESTION:

Do not induce vomiting. Keep person warm and consult a physician immediately. Give 1-2 cups of milk or water to drink.

INHALATION:

Remove victim to fresh air area and administer oxygen if necessary. Obtain medical assistance, asthmatic type symptoms may occur immediately or be delayed for several hours. Treatment is symptomatic.

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR,
(% BY VOLUME)

UPPER: not available
LOWER: not available

FLASH POINT: 91F

METHOD USED:

Seta Flash

EXTINGUISHING MEDIA:

Foam, alcohol foam, CO2, dry chemical

SPECIAL FIRE FIGHTING PROCEDURES:

Do not enter confined fire area without full bunker gear including a positive pressure NIOSH approved self-contained breathing apparatus. Presence of solvents in product may require grounding. Remove all sources of ignition.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

If fire occurs, solvents may produce excessive pressure. Sealed drums may rupture and ignite. Vapors are heavier than air and may travel along the ground and ignite by any source of ignition. During a fire, HDI vapors and other toxic gasses may be evolved. Containers may burst if contaminated with water. Vapor flashback to source is possible.

SECTION 6: RELEASE MEASURES

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STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Wear respirator and protective clothing. Remove all sources of ignitions. Remove excess with spark proof equipment, and the remainder with an absorbent such as clay and place in disposal containers. Contained air respirator may be necessary.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Store in cool dry place, seal all partially used containers. Wash with soap and water before eating, drinking, smoking, or using the toilet facilities. Mixed materials contain the hazards of all the components, therefore, read the MSDS's of all the components prior to using material. Properly label all containers. Keep material away from all sources of ignition.

OTHER PRECAUTIONS:

Avoid all skin contact. Avoid breathing vapors generated from the material. Observe conditions of good general hygiene and safe working practices. Contaminated leather articles cannot be cleaned and must be discarded if contaminated with this product. Wash all contaminated clothing prior to the reuse thereof. Wear appropriate safety equipment and respirator at all times when ventilation is not sufficient to control vapors. Observe OSHA regulations for respirator use (29 CFR 1910.134). When spraying material avoid exposure to all mists generated by using air supplied respirator.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION:

Use a NIOSH approved respirator as required to prevent over-exposure to vapor in accordance with 29 CFR 1910.134. Engineering or administrative measures should be taken to reduce the risk and exposure. Use a positive pressure supplied air respirator when exceeding TLV's or if HDI Monomer concentrations exceed acceptable limits or when spraying material.

VENTILATION :

Exhaust ventilation sufficient to keep airborne concentrations of HDI below their TLV and MGL maximum. Refer to Patty's Industrial Hygiene and Toxicology- Volume 1 (3rd edition) Chapter 17 and Volume III (1st edition) Chapter 3 for details.

PROTECTIVE GLOVES:

Impervious gloves – neoprene or rubber.

EYE PROTECTION:

Splash goggles or glasses with side shields. Do not wear contact lenses when using this product.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Wear body covering clothing and other coverings as necessary such as an apron and appropriate footwear to avoid contact.

WORK HYGIENIC PRACTICES:

Observe good general hygienic practices.

SEE SECTION THREE FOR OCCPATIONAL EXPOSURE LIMIT VALUES.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Pale yellow liquids with solvent odor

BOILING POINT OR RANGE: 279 ° F

VAPOR DENSITY (AIR = 1): not available

SPECIFIC GRAVITY (H₂O = 1): 1.1

EVAPORATION RATE: not available

SOLUBILITY IN WATER: negligible

Odor Threshold: N/A

pH: N/A

Melting point/freezing point: N/A

Vapor Pressure: N/A

Auto Ignition Temperature: N/A

Partition Coefficient: n-octanol/water: N/A

Decomposition Temperature: N/A

SECTION 10: STABILITY AND REACTIVITY

STABILITY:

stable

CONDITIONS TO AVOID (STABILITY):

Avoid excessive heat or open flames as well as all sources of ignition such as sparks, heaters, static discharges, etc.

INCOMPATIBILITY (MATERIAL TO AVOID):

Avoid water, amines, strong bases, alcohols, metal compounds, and surface active compounds.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:

May form toxic chemicals, carbon dioxide carbon monoxide, oxides of nitrogen, HCN and HDI.

HAZARDOUS POLYMERIZATION:

Moisture or materials that react with isocyanates and temperatures above 400 degrees F may cause polymerization.

SECTION 11: TOXICOLOGICAL INFORMATION

Product: Acute Oral Toxicity LD50 >5000 mg/kg (rat) (estimated value)
Acute Inhalation Toxicity LC50 390-453 mg/m³, 4h (rat)
Acute Dermal Toxicity LD50 >5000 mg/kg (rabbit)
Skin Irritation, rabbit, Draize, slightly irritating
Eye Irritation, rabbit, Draize, slightly irritating
Sensitization: Dermal – Sensitizer (Guinea Pig, Maximization Test). Dermal – Non-Sensitizer (Guinea Pig, Buehler).
Sensitization Inhalation – Non-sensitizer (Guinea Pig)
Repeated Dose Toxicity: 3 wks, inhalation NOAEL: 3.7-4.3 mg/m³ (rat)
Repeated Dose Toxicity: 90 d, inhalation NOAEL: 3.3-3.4 mg/m³ (rat)
Repeated Dose toxicity: Irritation to lungs and nasal cavity
Mutagenicity: Genetic Toxicity in Vitro, Ames: negative (salmonella typhimurium, metabolic Activation: with/without)
COMPONENT n-Butyl Acetate: Acute oral LD50 > 5000 mg/kg (rat), Acute Inhalation Toxicity: LC50 > 23.4 mg/l, 4hh (rat), Acute Dermal Toxicity LD50 > 5000 mg/kg (rabbit), Skin Irritation Guinea pig Acute Dermal Irritation exposure time 24h – Non-irritating, Skin Irritation Human patch test exposure time 48h – Non-irritating, Eye Irritation rabbit Draize exposure time 24h – slightly irritating, Sensitization dermal – non-sensitizing (guinea pig, human – maximization test). Repeated Dose Toxicity – 13 weeks inhalation NOAEL: 500 ppm (rat). Mutagenicity Genetic Toxicity in Vitro: Ames negative (Salmonella typhimurium, Metabolic Activation: with/without).
COMPONENT Xylene: Inhalation LC50 26800ppm, Skin LD50 2000 mg/kg, Ingestion LD50 4.3 g/kg. Exposure may effect skin, eye, liver, kidney, nervous system, respiratory system and lungs. High concentrations may lead to nervous system effects. Repeated overexposure has produced toxic effects in developing and young laboratory animals. Aspiration into lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal. Xylene may contain ethyl benzene. Ethyl benzene has shown limited evidence of a carcinogenic effect.
COMPONENT Ethyl Benzene: Acute Oral toxicity LD50: ca. 3500 mg/kg (rat); Acute inhalation LC50: 17.2 mg/l 4h (rat); Acute Dermal Toxicity: 17,800 mg/kg (rabbit); Skin Irritation rabbit Draize exposure time 24h – slightly irritating. Eye Irritation rabbit Draize – severely irritating. Sensitization dermal (human patch test) non-sensitizer. Repeated Dose toxicity 28 days inhalation NOAEL: 3.4 mg/l (rabbit). Mutagenicity Genetic Toxicity in Vitro: Ames: Negative (salmonella typhimurium, metabolic activation with/without). Carcinogenicity: Ethyl benzene was tested by inhalation exposure in mice and rats. In mice, there was an increased incidence of lung adenomas in males and liver adenomas in females. In male rats, there was an increased incidence of renal tubule adenomas and carcinomas. Two Studies of workers potentially exposed to ethyl benzene in a production plant and a styrene polymerization plant, showed no excess cancer incidence and no excess cancer mortality during a 15 year follow-up. Toxicity to Reproduction/Fertility: Inhalation (monkey, male) Reproductive effects have been observed in animal studies, In a generation study, inhalation (rat/female) NOAEL (parental): 100ppm NOAEL (F2): 100ppm. Developmental Toxicity/Teratogenicity rat, female, inhalation, gestation, daily, NOAEL (teratogenicity): 100ppm (maternal): 100ppm. Teratogenic effects seen only with maternal toxicity., Fetotoxicity seen only with maternal toxicity. Rabbit, female, inhalation, gestation, daily, NOAEL (teratogenicity) < 1000 mg/m³, NOAEL (maternal) < 1000 mg/m³.

SECTION 12: ECOLOGICAL INFORMATION

COMPONENT Homopolymer of HDI: Biodegradation: 0%, Exposure time: 28 days, not readily biodegradable. Acute and Prolonged Toxicity to fish LC0 > 100 mg/l (zebra fish, 96 h). Acute toxicity to aquatic invertebrates: EC0 > 100 mg/l (water flea, 48 h). Toxicity to aquatic plants EC50 > 1000 mg/l (green algae, 72 h). Toxicity to Microorganisms: EC50 > 1000 mg/l (activated sludge microorganisms, 3 h).
COMPONENT n-Butyl Acetate: Biodegradation: aerobic, 98%, exposure time 28 days. Biochemical oxygen demand (BOD) 1020 mg/g. Chemical Oxygen demand (COD) 2,320 mg/g. Bioaccumulation: ca. 4-14 BCF. Acute and Prolonged Toxicity to Fish LC50: 18 mg/l (fathead minnow, 96 h). Acute Toxicity to Aquatic Invertebrate EC50: 72.8 mg/l (water flea, 48 h). Toxicity to aquatic plants EC50: 670 mg/l, end point: growth (Cryptomonad, 48 h). Toxicity to Microorganisms EC50: 959 mg/l (Pseudomonas putida, 48 h).
COMPONENT Xylene: Acute Toxicity: Fish: Toxic 1 < LC/EC/IC50 < 10mg/l, Aquatic Invertebrates: Toxic 1 < LC/EC/IC50 < 10mg/l, Algae: Toxic 1 < LC/EC/IC50 < 10 mg/l. Mobility – floats on water. If it enters the soil it will be highly mobile and may contaminate groundwater. Oxidises rapidly by photo-chemical reactions in air.
COMPONENT Ethyl Benzene: Biodegradation, Aerobic, 50%, Exposure time 28 days. Biochemical Oxygen demand (BOD) 5 days, 2.8% and 35 days, 1780 mg/g. Bioaccumulation: Cyprinus carpio (Carp), 15 BCF. Acute and Prolonged Toxicity to Fish LC50: 12.1 mg/l (fathead minnow, 96 h). Acute Toxicity to Aquatic Invertebrates EC50: 1.8-2.9 mg/l (water flea, 48 h). Toxicity to Aquatic Plants EC50: 4.6 mg/l (green algae, 72 h). Toxicity to microorganisms EC50: 130 mg/l (activated sludge microorganisms, 48 hr).

SECTION 13: WASTE DISPOSAL**WASTE DISPOSAL METHOD:**

Dispose of the material in a waste disposal site in accordance with local, state, and federal laws.

SECTION 14: Transport Information

DOT: UN1993, FLAMMABLE LIQUID N.O.S. (CONTAINS XYLENE, BUTYL ACETATE), 3, PG III

IMO/IMDG: UN1993, FLAMMABLE LIQUID N.O.S. (CONTAINS XYLENE, BUTYL ACETATE), 3, PG III

SECTION 15: REGULATORY INFORMATION

Product: OSHA HAZCOM STANDARD RATING: Hazardous. All components on TSCA
Massachusetts, New York, Pennsylvania Right to Know list includes the following components: Homopolymer of HDI CAS# 28182-81-2 @ 60-100%; n-Butyl Acetate CAS# 123-86-4 @ 10-20%; Xylene CAS# 1330-20-7 @ 7-13%; Ethyl Benzene CAS# 100-41-4 @ 1-5%. Massachusetts, New York, Pennsylvania Special hazardous Substance includes the following components: n-Butyl Acetate CAS# 123-86-4 @ 10-20%; Xylene CAS# 1330-20-7 @ 7-13%; Ethyl Benzene CAS# 100-41-4 @ 1-5%; hexamethylene diisocyanate (HDI) CAS# 822-06-0 @ <0.6%.
California Prop 65: This product contains chemicals known to the State of California to be carcinogenic: Ethyl Benzene CAS# 100-41-4 @ 1-5%.

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US EPA CERCLA Hazardous Substances (40 CFR 302): n-butyl acetate reportable quantity 5000 lbs
US EPA CERCLA Hazardous Substances (40 CFR 302): Xylene reportable quantity 100 lbs.
US EPA CERCLA Hazardous Substances (40 CFR 302): Ethyl Benzene reportable quantity 1000 lbs.
US EPA Emergency Planning and Community Right to Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.5) components, Xylene and Ethyl Benzene.

SECTION 16: OTHER INFORMATION

DISCLAIMER: The information Contained herein is based on the data available and is believed to be accurate, However, the manufacturer makes no warranty expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. Accordingly, we assume no responsibility for injury from the use of this product.

N/A = Not Available

See Section 1 for date of preparation