PREFERRED SOLUTIONS, INC.

SAFETY DATA SHEET
Staycell ONE STEP® 502 A-Isocyanate

Prepared in accordance with the United States Hazard Communication Standard: 29 CFR 1910.1200 (2012) **Issue Date: 10/01/2020**

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name: Staycell ONE STEP® 502, A-ISOCYANATE

Supplier:
Preferred Solutions, Inc.
7819 Broadview Road
Cleveland, OH 44131
Tel: 800-522-4522
Fax: 216-642-1166

Emergency Telephone Number: PERS (US): 24 hours/7 days
800-633-8253 Domestic
801-629-0667 International

2. HAZARDS IDENTIFICATION

GHS-US classification:

Specific Target Organ Toxicity – Single Exposure (Respiratory System) – Category 3
Specific Target Organ Toxicity – Repeated Exposure (Respiratory Tract) – Category 1
Skin Irritation – Category 2
Eye Irritation – Category 2B
Respiratory Sensitizer (Solid/Liquid) – Category 1
Skin Sensitizer – Category 1
Carcinogenicity – Category 2
Acute Toxicity (Inhalation) – Category 4

Pictograms:

GHS08

GHS07

Signal Word
Danger

Hazard Statements - Health:
H332 - Harmful if inhaled.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 - May cause an allergic skin reaction.

H351 - Suspected of causing cancer.
H335 - May cause respiratory irritation.
H373 - May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements - General:
P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.
P103 - Read label before use.

Precautionary Statements - Prevention:
P284 - In case of inadequate ventilation wear respiratory protection.
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P264 - Wash thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 – Do not breathe dust/fume/gas/mist/spray.
P233 – Keep container tightly closed.

Precautionary Statements - Response:
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy To do. Continue rinsing.
P342 + P311 - IF EXPERIENCING RESPIRATORY SYMPTOMS: Call a POISON CENTER/doctor.
P304 + P340 - IF IHHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P312 - Call a POISON CENTER/doctor if you feel unwell.
P362 + P364 - Take off contaminated clothing. Wash contaminated clothing before reuse.
P308 + P313 - If exposed or concerned: Get medical attention/advice.
P332 + P313 - If skin irritation occurs: Get medical attention/advice.
P333 + P313 - If skin irritation or rash occurs: Get medical attention/advice.
P337 + P313 - If eye irritation persists: Get medical attention/advice.
P321 - Specific treatment (see Section 4 of this SDS).
P314 - Get medical attention/advice if you feel unwell.

Precautionary Statements - Storage:
P405 - Store locked up.
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.

Precautionary Statements - Disposal:
P501 - Dispose of contents/container to an approved waste disposal plant.

3. COMPOSTION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	% Content
Polymeric Diphenylmethane Diisocyanate (pMDI)	9016-87-9	40-50%
4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8	25-35%
2,4'-Diphenylmethane Diisocyanate (MDI)	5873-54-1	1-5%
2,2'-Diphenylmethane Diisocyanate	2536-05-2	0.1-1%
Flame Retardant		5-20%

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4. FIRST AID MEASURES

General Information:
Symptoms of exposure may occur after several hours; therefore medical observation for at least 48 hours after exposure. First Aid responders should pay attention to self-protection and use the recommended protective clothing. If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Eyes:
In case of contact, hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

Skin:
Remove contaminated clothing and shoes. Wash clothing before reuse. Wash affected areas with soap and water. Get medical attention immediately if irritation (redness, rash, blistering) develops and persists.

Ingestion:
DO NOT INDUCE VOMITING UNLESS DIRECTED TO DO SO BY MEDICAL PERSONNEL. Never give anything by mouth to an unconscious victim. Get medical attention immediately.

Inhalation:
Remove the person from the contaminated area to fresh air. If breathing is difficult, give oxygen. Do not allow victim to move about unnecessarily. Symptoms of pulmonary edema or asthmatic symptoms may develop and may be immediate or delayed up to several hours. Get medical attention immediately.

Information for Doctor:
Symptomatic treatment and supportive therapy as indicated. Following severe exposure the patient should be kept under medical review for at least 48 hours.

Most important symptoms and effects, both acute and delayed:
Eye Contact: Adverse symptoms may include the following: pain or irritation, watering, redness
Inhalation: Adverse symptoms may include: Respiratory tract irritation, coughing, wheezing and breathing difficulties, asthma.
Skin Contact: Adverse symptoms may include the following: irritation, redness.
Ingestion: No specific data

Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:
Dry chemical powder, Carbon dioxide (CO2), foam, water fog or fine spray. Alcohol resistant foams are preferred for large fires. Use water spray to cool fire exposed containers.

Unsuitable extinguishing agents:
Water may be used if no other media is available and then in copious quantities. Reaction between water and hot isocyanate may be vigorous. Prevent washings from entering water courses.

Special hazards arising from the substance or mixture:
In a fire or if heated, a pressure increase will occur and the container may burst. Combustion products may include carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbons and HCN.

Advice for firefighters:
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk without suitable training. Stay up-wind and keep out of low areas where gases (fumes) can accumulate.

Protective equipment:
Firefighters should wear NFPA compliant structural firefighting protective equipment, including self-contained breathing apparatus and helmet, hood, boots, and gloves. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. If material is spilled or released and exposure likely, evacuate area and fight fire from a safe distance or a protected location.

Additional information:
Due to reaction of water producing CO2 gas, a hazardous build-up of pressure could result if contaminated containers are re-sealed. Containers may burst if overheated.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:
No action shall be taken involving any personal risk without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions:
Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up:
Absorb isocyanate with suitable absorbent material: Dirt, Vermiculite, Sand, Clay.
Ensure adequate ventilation.
Contain spilled material if possible. Shovel into open container. Do not make container pressure tight. Move container to a well-ventilated area (outside). Spill area can be decontaminated with the following recommended decontamination solution: Mixture of 90 % water, 8 % concentrated ammonia, 2 % detergent. Add about 10 parts of decontamination solution per part of isocyanate, with mixing. Allow substance to evaporate. See Section 13 for additional information.

Reference to other sections:
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7. HANDLING AND STORAGE

Handling:
Precautions for safe handling:
Ensure good ventilation/exhaustion at the workplace.
Avoid contact with eyes and prolonged or repeated contact with skin.
Wash thoroughly after handling.

Information about protection against explosions and fires:
No special measures required.

Conditions for safe storage, including any incompatibilities:
Requirements to be met by storerooms and receptacles:
No special requirements.

Information about storage in one common storage facility:
Store in a dry place. Protect from atmospheric moisture. Do not store near water – contaminated product can result in potentially hazardous reaction.

Further information about storage conditions:
Keep receptacle tightly sealed.

Storage period: 6 months
Storage temperature: 50° to 75°F.

Specific end use(s):
See technical data sheet for details

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters:

4,4'-Diphenylmethane Diisocyanate (MDI) (CAS No. 101-68-8)	
ACGIH	*TWA: 0.005 ppm*
ACGIH	*STEL: 0.07 ppm*

Additional information:
The lists that were valid during the creation were used as basis.

Exposure controls
Personal protective equipment

General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Wash contaminated clothing before reuse.
Ensure that eyewash stations and safety showers are close to the workstation area.

Breathing equipment:
In case of brief exposure at low atmospheric levels, use an approved air-purifying respirator equipped with an organic vapor sorbent and particle filter. In case of intensive or longer exposure, use a positive pressure air-supplying respirator (air line or self-contained breathing apparatus).

Protection of hands:
The 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.

Material of gloves:
Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and microorganisms. Examples of preferred glove barrier materials include: Butyl rubber, Polyethylene, EVAL, Neoprene, Nitrile, Viton. When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher is recommended.

Penetration time of glove material:
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye Protection:
Tightly sealed chemical goggles consistent with EN 166 or equivalent. Wear a face-shield which allows use of chemical goggles or wear full-face respirator to protect face and eyes when there is any likelihood of splashes.

Body Protection:
Personal protective clothing 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. Safety glasses with side shields or goggles recommended. If there is a potential for splashing, use full face shield over safety glasses or goggles.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
General Information
Appearance:
Form: Fluid
Color: Amber
Odor: Characteristic
Odor Threshold: Not determined
pH-value: Not determined
Change in condition:
Melting point/melting range: Undetermined
Boiling point/boiling range: Undetermined
Flash Point: 218 °C (424 °F)
Flammability (solid, gaseous): Not applicable
Decomposition Temperature: Not determined
Auto Ignition: Product is not self-igniting
Danger of Explosion: Product does not present and explosion hazard
Explosion Limits:
Lower: Not determined
Upper: Not determined
Vapor Pressure: Not determined
Density: 10.67 lb/gal
Specific Gravity: 1.28
Vapor Density: Heavier than air
Evaporation Rate: Slower than ether
Solubility in / Miscibility with Water: Not miscible or difficult to mix
Partition coefficient (n-octanol/water): Not determined

10. STABILITY AND REACTIVITY

Reactivity:
Diisocyanates react with many materials and the rate of reaction increases with temperature as well as increased contact; these reactions can be violent. Contact is increased by stirring or if the other material mixes with the diisocyanate. Diisocyanates are not soluable in water and sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat.

Chemical Stability:
This product is stable at recommended storage conditions (See Section 7).

Thermal Decomposition/Conditions to be Avoided:
No decomposition if used according to specifications.

Possibility of Hazardous Reactions:
Can occur. Exposure to elevated temperatures can cause product to decompose and generate gas. This can cause pressure build-up and/or rupturing of closed containers. Polymerization can be catalyzed by: Strong bases and water.

Conditions To Avoid:
Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid. Avoid moisture. Material reacts slowly with water, releasing carbon dioxide which can cause pressure build-up and rupture of closed containers. Elevated temperatures accelerate this reaction.

Incompatible Materials:
Water, alcohols, amines, bases and acids

Hazardous Decomposition Products:
Combustion products include: carbon oxides (CO, CO2), nitrogen oxides (NO, NO2, etc.), hydrocarbons and HCN.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity

Polymeric Diphenylmethane Diisocyanate (pMDI) (CAS No. 9016-87-9)	
Oral	*LD50 >10,000 mg/kg (rat)*
Dermal	*LD50 >9,400 mg/kg (rabbit)*
Inhalative	*LC50/4h 0.49 mg/l (rat)*
4,4'-Diphenylmethane Diisocyanate (MDI) (CAS No. 101-68-8)	
Oral	*LD50 9,200 mg/kg (rat)*
2,4'-Diphenylmethane Diisocyanate (MDI) (CAS No. 26447-40-5)	
Oral	*LD50 >7,400 mg/kg (rat)*
Dermal	*LD50 >6,200 mg/kg (rabbit)*
Inhalative	*LC50/4h 0.49 mg/l (rat)*

Primary Irritant Effect:
On the skin: Irritant to skin and mucous membranes.
In the eyes: Irritating effect.

Sensitization:
Sensitization possible through inhalation.
Sensitization possible through skin contact.

Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant
May cause damage to organs through prolonged or repeated exposure if inhaled. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenic categories

IARC (International Agency for Research on Cancer)	
9016-87-9	*Polymeric Diphenylmethane Diisocyanate (pMDI)*
101-68-8	4,4'-Diphenylmethane Diisocyanate (MDI)
NTP (National Toxicology Program)	
None of the ingredients are listed.	
OSHA-Ca (Occupational Safety & Health Administration)	
None of the ingredients are listed.	

12. ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity:	
Polymeric Diphenylmethane Diisocyanate (pMDI) (CAS No. 9016-87-9)	
EC50 (static)	*>1,000 mg/kg (daphnia)*
4,4'-Diphenylmethane Diisocyanate (MDI) (CAS No. 101-68-8)	
EC50 (static)	*>1,000 mg/kg (daphnia)*

Persistance and degradability:
No further relevant information available.

Behavior in environmental systems
Bioaccumulative potential:
No further relevant information available.
Mobility in soil:
No further relevant information available.

Additional ecological information
General notes:
Water hazard class 1 (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Results of PBT and vPvB assessment:
PBT: Not applicable
vPvB: Not applicable
Other Adverse Effects:
No further relevant information available.

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods
Recommendation:
The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of all federal, state and local environmental protections and waste disposal regulations. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Uncleaned Packagings
Recommendation:
Disposal must be made according to official regulations.

14. TRANSPORT INFORMATION

U.S. DOT Information:
Not regulated

IMDG Information:
Not regulated

IATA Information:
Not regulated

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical Name	CAS Number	SARA 313 – Threshold Values %
Polymeric Diphenylmethane Diisocyanate (pMDI)	9016-87-9	1.0
4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8	1.0
2,4'-Diphenylmethane Diisocyanate (MDI)	5873-54-1	1.0

SARA 311/312 Hazard Categories:

Acute health hazard: Yes
Chronic health hazard: Yes
Fire hazard: No
Sudden release of pressure hazard: No
Reactive hazard: No

CWA – Clean Water Act: This product does not contain any subtances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and CFR 122.42).

CERCLA: This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical Name	CAS Number	CERCLA/SARA RQ	Reportable Quantity (RQ)
4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8	-	5,000 LB

U.S. State Regulations

California Proposition 65: This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations:

Chemical Name	CAS Number	New Jersey	Massachusetts	Pennsylvania
Polymeric Diphenylmethane Diisocyanate (pMDI)	9016-87-9	X	-	-
4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8	X	X	X
2,4'-Diphenylmethane Diisocyanate (MDI)	5873-54-1	X	-	-

16. OTHER INFORMATION

NFPA Hazard Codes:

Health Hazards: 3 Flammability: 1 Instability: 1 Physical and Chemical Properties: -

HMIS III Rating:

Health Hazards: 3 Flammability: 1 Physical Hazards: 1 Personal Protection: X

Department Issuing SDS:

Preferred Solutions, Inc. Product Stewardship

Date of Preparation/Last Revision:

06/01/2015

PREFERRED SOLUTIONS, INC.

SAFETY DATA SHEET
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Abbreviations and Acronyms:
IMDG: International Maritime Code of Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygenists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service
NFPA: National Fire Protection Agency (USA)
HMIS: Hazardous Materials Identification System (USA)
CSR: Chemical Safety Report
SDS: Safety Data Sheet
MSDS: Material Safety Data Sheet
PBT: Persistent, Bioaccumulative and Toxic Substances
STEL: Short-Term Exposure Limit
TLV: Threshold Limit Value
TWA: Time Weighted average
vPvB: Very Persistent and Very Bioaccumulative
LC50: Lethal Concentration, 50 percent
LD50: Lethal Dose, 50 percent

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