

CHO-BOND® 2165 Part B

SDS No: PHC-061 EU

SDS Revision Date (dd/mm/yyyy): 18/11/2015

Page 1 of 15

SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended.

SECTION 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier : **CHO-BOND® 2165 Part B**
Product Code(s) : 50-01-2165-0000; 50-02-2165-0000; 50-04-2165-0000; 50-05-2165-0000
SDS No. : PHC-061 EU

1.2 Relevant identified uses of the substance or mixture and uses advised against
: Conductive, solvent-based, fluoropolymer sealant.
No restrictions on use known.

1.3 Details of the supplier of the safety data sheet:

Parker Hannifin France

SAS-Etablissement de Saint Ouen l'Aumone-PA du vert
Galant-6/8 avenue du Vert
Galant-95310 Saint Ouen l'Aumone-France

Chomerics Europe
Parker Hannifin Ltd., Seal Group
Unit 6 Century Point
Halifax Road, High Wycombe
Bucks, HP12 3SL
United Kingdom

E-Mail: parker.france@parker.com
Website: www.parkerfrance.fr

Telephone : +33 (01) 34 32 39 00 (France); +44 (0) 1494 455 400 (UK)

1.4 Emergency Telephone Number
: 001-352-323-3500 (INFOTRAC - U.S.)

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Clear yellow liquid. Solvent odour.

Most important hazards:

Flammable liquid and vapour. May be ignited by open flame.

Harmful if inhaled. Causes skin irritation. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Occupational exposure to the substance or mixture may cause adverse effects. For further information, please refer to section 11 of the SDS.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. See Section 12 for more environmental information.

This mixture is classified as hazardous in accordance with Regulation (EC) No 1272/2008. Classification:

- Flammable liquid - Category 3; H226
- Acute toxicity (Inhalation) - Category 4; H332
- Skin corrosion/irritation - Category 2; H315
- Skin sensitization - Category 1; H317
- Respiratory sensitization - Category 1; H334
- Specific target organ toxicity, single exposure - Category 3; H335

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SDS No: PHC-061 EU

SDS Revision Date (dd/mm/yyyy): 18/11/2015

Page 2 of 15

SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended.

2.2 Label elements

Hazard pictogram(s)



Hazardous components which must be listed on the label: Hexamethylene diisocyanate, oligomers; Xylene; Hexamethylene diisocyanate.

Signal word:

DANGER!

Hazard statements:

H226 - Flammable liquid and vapour.

H332 - Harmful if inhaled.

H315 - Causes skin irritation.

H317 - May cause an allergic skin reaction.

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 - May cause respiratory irritation.

Precautionary statements:

P210 - Keep away from heat, sparks and open flame. - No smoking.

P261 - Avoid breathing vapours.

P280 - Wear protective gloves and eye/face protection.

P284 - Wear respiratory protection.

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

P370 + P378 - In case of fire: Use carbon dioxide, dry sand, dry chemical or alcohol-resistant foam to extinguish.

P403 + P233 - Store in a well-ventilated area. Keep container tightly closed.

P501 - Dispose of contents/container in accordance with local regulation.

2.3 Other hazards

Other hazards which do not result in classification:

Polymerization may occur at elevated temperatures in the presence of: tertiary amines; Alkalies. May react with water.

Burning produces obnoxious and toxic fumes. May cause mild eye irritation. Causes brown discolouration of the skin. May cause gastrointestinal irritation. Prolonged overexposure may cause slight kidney effects, such as increased organ weight.

PBT assessment:

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical nature - Mixture of: Isocyanates; Solvent.

The following substances shall be indicated according to legislation:

SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended.

Chemical name	CAS #	EC No.	Concentration	CLP Classification
Hexamethylene diisocyanate, oligomers	28182-81-2	500-060-2	60.0 - 100.0	Acute Tox. 4; H332 Skin Sens. 1; H317 STOT SE 3; H335 (self classified)
n-Butyl acetate	123-86-4	204-658-1	10.0 - 20.0	Flam. Liq. 3; H226 STOT SE 3; H336 EUH066
Xylene	1330-20-7	215-535-7	7.0 - 13.0	Flam. Liq. 3; H226 *Acute Tox. 4; H312 *Acute Tox. 4; H332 Skin Irrit. 2; H315
Hexamethylene diisocyanate	822-06-0	212-485-8	≤ 0.6	**Acute Tox. 1; H330 **Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335

Note:

*The above CLP Acute toxicity Classifications for the following chemicals are 'Minimum Classifications':

**The classifications listed are in addition to those appearing in Annex VI of Regulation (EC) No. 1272/2008.

For the full text of the H phrases not mentioned in this Section or in Section 2, see Section 16.

SECTION 4. FIRST-AID MEASURES

4.1 Description of first aid measures

- Ingestion* : Do not induce vomiting. Never give anything by mouth to a person who is unconscious or is having convulsions. When symptoms persist or in all cases of doubt, seek medical advice.
- Inhalation* : If inhaled: Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
- Skin contact* : If on skin: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
- Eye contact* : Rinse immediately with plenty of water, also under the eyelids. When symptoms persist or in all cases of doubt, seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed

- : Harmful if inhaled. Symptoms may include eye and nose irritation, dry or sore throat, runny nose, shortness of breath and wheezing. Coughing with chest pain or tightness may also occur. Higher concentrations could cause inflammation of the lung tissue (chemical pneumonitis), chemical bronchitis with severe asthma-like wheezing, severe coughing spasms and accumulation of fluid in the lungs (pulmonary edema). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.
- Causes skin irritation. Contact may cause redness, swelling and a painful sensation. May cause severe skin sensitization with allergic contact dermatitis symptoms such as swelling, rash and eczema.
- May cause allergic respiratory reaction (sensitization) with asthmatic symptoms such as wheezing and chest tightness.
- May cause mild eye irritation. Symptoms may include stinging and tearing.
- Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion of larger amounts may cause defects to the central nervous system (e.g. dizziness, headache). Causes brown discolouration of the skin.
- Prolonged overexposure may cause slight kidney effects, such as increased organ weight.

SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended.

4.3 Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically. Contains isocyanates. See information supplied by the manufacturer. Symptoms of poisoning may not appear for several hours. Keep under medical supervision for at least 48 hours.

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

- : Carbon dioxide (CO₂); Dry chemical; Alcohol resistant foam.

Unsuitable extinguishing media

- : May react with water. Do not use water if possible.

5.2 Special hazards arising from the substance or mixture

- : Flammable liquid and vapour. May be ignited by open flame. May react with water, generating heat. Polymerization may occur at elevated temperatures in the presence of: tertiary amines; Alkalies. The pressure in sealed containers can increase under the influence of heat. Burning produces obnoxious and toxic fumes. In the event of fire the following can be released: Carbon oxides; Hydrogen cyanide (hydrocyanic acid); Nitrogen oxides (NO_x); Aldehydes.

5.3 Advice for firefighters

Protective equipment for fire-fighters

- : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not get water inside containers. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

- : Keep people away from and upwind of spill/leak. Restrict access to area until completion of clean-up. Wear appropriate protective equipment.

6.2 Environmental precautions

- : Avoid release to the environment. Prevent product from entering drains, sewers, waterways and soil. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

6.3 Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. For spilled liquids: absorb spill with inert, non-combustible material such as sand, then place into suitable containers. Do not use combustible absorbents, such as sawdust. Pick up and transfer to properly labeled containers. Move containers to safe, well-ventilated area. Contaminated absorbent material may pose the same hazards as the spilled product. Contact the proper local authorities.

6.4 Reference to other sections

- : Refer to protective measures listed in sections 7 and 8. Refer to Section 13 for disposal of contaminated material.

SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

- : Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates. Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is being used. Use only outdoors or in a well-ventilated area. Wear suitable protective equipment during handling. Wear protective gloves and eye/face protection. Wear respiratory protection. Avoid breathing vapours. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and open flame. - No smoking. Ground/Bond container and receiving equipment. Use explosion-proof electrical and ventilating equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep away from incompatibles. Keep containers tightly closed when not in use. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

7.2 Conditions for safe storage, including any incompatibilities

- : Store in cool/well-ventilated place. Store locked up. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area. Do not store near any incompatible materials (see Section 10). Keep containers dry and tightly closed to avoid moisture absorption and contamination.

7.3 Specific end use(s)

- : Coating. Electronics industry

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters

<u>Exposure Limits:</u>			
<u>Chemical Name</u>	<u>Exposure Limits</u>	<u>Type</u>	<u>Notes</u>
Hexamethylene diisocyanate	0.01 ppm (0.075 mg/m ³) (TWA) 0.02 ppm (0.15 mg/m ³) (STEL)	France (OEL)	Respiratory sensitiser
	0.005 ppm (0.035 mg/m ³) (ceiling factor 2, exposure factor 1) (TWA)	Germany (OEL)	Respiratory sensitiser
	0.035 mg/m ³ (TWA) 0.035 mg/m ³ (STEL)	Hungary (OEL)	Sensitiser
	0.04 mg/m ³ (TWA) 0.08 mg/m ³ (STEL)	Poland (OEL)	None.
	0.005 ppm (0.035 mg/m ³) (TWA)	Spain (OEL)	Sensitiser
	Hexamethylene diisocyanate, oligomers	0.01 ppm (0.075 mg/m ³) (TWA) 0.02 ppm (0.15 mg/m ³) (STEL)	France (OEL)
n-Butyl acetate	150 ppm (720 mg/m ³) (TWA) 200 ppm (960 mg/m ³) (STEL)	Finland (OEL)	None.
	150 ppm (710 mg/m ³) (TWA) 200 ppm (940 mg/m ³) (STEL)	France (OEL)	None.
	950 mg/m ³ (TWA) 950 mg/m ³ (STEL)	Hungary (OEL)	N/Av None.

SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended.

	200 mg/m ³ (TWA) 950 mg/m ³ (STEL)	Poland (OEL)	None.
	150 ppm (724 mg/m ³) (TWA) 200 ppm (965 mg/m ³) (STEL)	Spain (OEL)	None.
	150 ppm (724 mg/m ³) (TWA) 200 ppm (966 mg/m ³) (STEL)	The United Kingdom (The United Kingdom (WELs))	None.
Xylene	50 ppm (221 mg/m ³) (TWA) 100 ppm (442 mg/m ³) (STEL)	European Union (OEL)	Possibility of significant uptake through the skin
	50 ppm (220 mg/m ³) (TWA) 100 ppm (440 mg/m ³) (STEL)	Finland (OEL)	Potential for cutaneous absorption
	50 ppm (221 mg/m ³) (TWA) 100 ppm (442 mg/m ³) (STEL)	France (OEL)	Risk of cutaneous absorption
	100 ppm (440 mg/m ³) (exposure factor 2) (TWA)	Germany (OEL)	Skin notation
	221 mg/m ³ (TWA) 442 mg/m ³ (STEL)	Hungary (OEL)	Potential for cutaneous absorption
	50 ppm (221 mg/m ³) (TWA) 100 ppm (442 mg/m ³) (STEL)	Italy (OEL)	Skin - Potential for cutaneous absorption
	100 mg/m ³ (TWA)	Poland (OEL)	Skin notation
	50 ppm (221 mg/m ³) (TWA) 100 ppm (442 mg/m ³) (STEL)	Spain (OEL)	Skin - Potential for cutaneous absorption
50 ppm (220 mg/m ³) (TWA) 100 ppm (441 mg/m ³) (STEL)	The United Kingdom (The United Kingdom (WELs))	Potential for cutaneous absorption	

SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended.

Biological Exposure Indices:

France. *Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065)*

Xylene (CAS # 1330-20-7)

1500 mg/g Creatinine, Determinant: Methylhippuric acid, Specimen: Urine

Finland. *HTP-arvot, App 2., Biological Limit Values, (BRA/BGV), Social Affairs and Ministry of Health*

Xylene (CAS # 1330-20-7)

5 mmol/L, Determinant: Methylhippuric acid, Specimen: Urine

Germany. *TRGS 903, BAT List (Biological Limit Values)*

Xylene (CAS # 1330-20-7)

1.5 mg/L, Determinant: Xylene, Specimen: Blood

2000 mg/L, Determinant: Methylhippuric(tolur-) acid, Specimen: Urine

Hexamethylene diisocyanate (CAS # 822-06-0)

15 µg/g, Determinant: Hexamethylene diamine (after hydrolysis, measured as µg/g Creatinine), Specimen: Urine

Hungary. *Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices*

Xylene (CAS # 1330-20-7)

1500 mg/g Creatinine, Determinant: Methylhippuric acid, Specimen: Urine

860 µmol/mmol Creatinine, Determinant: Methylhippuric acid, Specimen: Urine

Spain. *Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4*

Xylene (CAS # 1330-20-7)

1 g/g Creatinine, Determinant: Methylhippuric acid, Specimen: Urine

UK. *EH40 Biological Monitoring Guidance Values (BMGVs)*

Xylene (CAS # 1330-20-7)

650 mmol/mol Creatinine, Determinant: Methylhippuric acid, Specimen: Urine

Derived No Effect Level (DNEL): No information available.

Predicted No Effect Concentration (PNEC): No information available.

8.2 Exposure controls

Ventilation and engineering measures

- : Use only outdoors or in a well-ventilated area. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection

- : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used. Advice should be sought from respiratory protection specialists.

Skin protection

- : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it. Where extensive exposure to product is possible, use resistant coveralls, apron and boots to prevent contact.

Eye / face protection

- : Wear eye/face protection. Chemical splash goggles are recommended. A full face shield may also be necessary. See also EN 166.

Other protective equipment

- : Ensure that eyewash stations and safety showers are close to the workstation location. Other equipment may be required depending on workplace standards.

General hygiene considerations

- : Avoid breathing vapours. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice. Contaminated work clothing must not be allowed out of the workplace.

SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	: Clear yellow liquid.
Odour	: solvent
Odour threshold	: No information available.
pH	: No information available.
Flash point	: 32.8°C
Flashpoint (Method)	: closed cup
Lower flammable limit (% by vol.)	: 1% (Xylene)
Upper flammable limit (% by vol.)	: 7% (Xylene)
Flammability (solid, gas)	: Not applicable.
Auto-ignition temperature	: No information available.
Decomposition temperature	: No information available.
Oxidizing properties	: None known.
Explosive properties	: Not explosive
Initial boiling point and boiling range	: No information available.
Melting/Freezing point	: No information available.
Relative density	: 1.06
Solubility in water	: Negligible. May react with water.
Other solubility(ies)	: No information available.
Vapour pressure	: No information available.
Vapour density	: No information available.
Partition coefficient: n-octanol/water	: No information available.
Viscosity	: No information available.
Evaporation rate (BuAe = 1)	: No information available.

9.2 Other Information

Volatiles (% by weight)	: 25%
Volatile organic Compounds (VOC's)	: 286 g/L
Other physical/chemical comments	: No additional information.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity	: May react with water.
10.2 Chemical stability	: Stable under normal conditions.
10.3 Possibility of hazardous reactions	: Reacts slowly with water below 50°C (122°F), releasing heat, large amounts of carbon dioxide and polyureas. Polymerization may occur at elevated temperatures in the presence of: tertiary amines; Alkalies.

SAFETY DATA SHEET

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- 10.4 Conditions to avoid** : Direct sources of heat. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials. Avoid excessive moisture.
- 10.5 Incompatible materials**
- : Strong oxidizing agents; Strong acids; Strong bases; Water; Amines; Alcohols; Metal compounds (e.g. Organotins).
- 10.6 Hazardous decomposition products**
- : Hexamethylene diamine.
Burning produces obnoxious and toxic fumes. In the event of fire the following can be released: Carbon oxides; Hydrogen cyanide (hydrocyanic acid); Aldehydes; Nitrogen oxides (NO_x).

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological effects:

- Acute toxicity** : This mixture is classified as hazardous in accordance with Regulation (EC) No 1272/2008.
Classification:
Acute toxicity - Category 4. Harmful if inhaled.
- Skin corrosion/Irritation** : This mixture is classified as hazardous in accordance with Regulation (EC) No 1272/2008.
Classification:
Skin corrosion/irritation - Category 2. Causes skin irritation.
- Serious eye damage/irritation**
- : According to the classification criteria of the European Union, the product is not considered as being an eye irritant.
- Respiratory or skin sensitisation**
- : This mixture is classified as hazardous in accordance with Regulation (EC) No 1272/2008.
Classification:
Respiratory sensitization - Category 1. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic respiratory reaction (sensitization) with asthmatic symptoms such as wheezing and chest tightness.
Skin sensitization - Category 1. May cause an allergic skin reaction.
May cause severe skin sensitization with allergic contact dermatitis symptoms such as swelling, rash and eczema.
- Germ cell mutagenicity** : Contains no ingredient listed as a mutagen.
- Carcinogenicity** : Contains no ingredient listed as a carcinogen.
- Reproductive toxicity** : Contains no ingredient listed as toxic to reproduction.
- STOT-single exposure** : This mixture is classified as hazardous in accordance with Regulation (EC) No 1272/2008.
Classification:
Specific target organ toxicity, single exposure - Category 3. May cause respiratory irritation.
- STOT-repeated exposure** : According to the classification criteria of the European Union, this product is not expected to cause target organ toxicity through repeated exposures.
- Aspiration hazard** : According to the classification criteria of the European Union, this product is not considered as being an aspiration hazard to humans.
- Toxicological data** : No data is available on the product itself. The calculated ATE values for this mixture are:
ATE dermal = 7857 mg/kg
ATE inhalation (mists) = 7.7 mg/L/4H
ATE inhalation (vapours) = 16.4 mg/L/4H
- See below for individual ingredient acute toxicity data.

SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Hexamethylene diisocyanate, oligomers	4.625 mg/L (mist)	> 2000 mg/kg (No mortality)	> 2500 mg/kg (No mortality)
n-Butyl acetate	> 6867 ppm (32.6 mg/L) (vapour) 1.802 mg/L (aerosol)	10 700 mg/kg	> 5000 mg/kg
Xylene	6350 ppm (27.6 mg/L) (vapours)	3253 mg/kg	12 180 mg/kg
Hexamethylene diisocyanate	18 ppm (0.124 mg/L) (vapour)	745 mg/kg	600 mg/kg

- Routes of exposure** : Eye contact; Skin contact; Skin Absorption; Inhalation; Ingestion
- Effects of acute exposure** : *Inhalation*: Harmful if inhaled. Symptoms may include eye and nose irritation, dry or sore throat, runny nose, shortness of breath and wheezing. Coughing with chest pain or tightness may also occur. Higher concentrations could cause inflammation of the lung tissue (chemical pneumonitis), chemical bronchitis with severe asthma-like wheezing, severe coughing spasms and accumulation of fluid in the lungs (pulmonary edema). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.
- Skin contact*: Causes skin irritation. Contact may cause redness, swelling and a painful sensation.
- Eye contact*: May cause mild eye irritation. Symptoms may include stinging and tearing.
- Ingestion*: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion of larger amounts may cause defects to the central nervous system (e.g. dizziness, headache).

Potential Chronic Health Effects

- : Causes brown discolouration of the skin.

Other important hazards

- : None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

- 12.1 Toxicity** : No data is available on the product itself. Should not be released into the environment.
 See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC50 / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Hexamethylene diisocyanate, oligomers	28182-81-2	≥ 100 mg/L (Zebra fish)	No information available.	None.
n-Butyl acetate	123-86-4	18 mg/L (Fathead minnow)	No information available.	None.
Xylene	1330-20-7	8.2 mg/L (Rainbow trout)	No information available.	None.
Hexamethylene diisocyanate	822-06-0	> 82.8 mg/L (Zebra fish)	No information available.	None.

SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Hexamethylene diisocyanate, oligomers	28182-81-2	127 mg/L (Daphnia magna)	No information available.	None.
n-Butyl acetate	123-86-4	44 mg/L (Daphnia magna)	23 mg/L (Read-across)	None.
Xylene	1330-20-7	3.2 - 9.56 mg/L (Daphnia magna)	No information available.	None.
Hexamethylene diisocyanate	822-06-0	> 89.1 mg/L (Daphnia magna)	No information available.	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Hexamethylene diisocyanate, oligomers	28182-81-2	> 1000 mg/L/72hr (Green algae)	No information available.	None.
n-Butyl acetate	123-86-4	675 mg/L/72hr (Green algae)	200 mg/L/72hr	None.
Xylene	1330-20-7	3.2 - 4.9 mg/L/72hr (Green algae)	No information available.	None.
Hexamethylene diisocyanate	822-06-0	> 77.4 mg/L/72hr (Green algae)	11.7 mg/L/72hr	None.

12.2 Persistence and degradability

- : The product itself has not been tested. Not expected to be rapidly biodegradable. Will react with water to produce inert and non-biodegradable solids.
The following ingredients are considered to be readily biodegradable: Xylene; n-Butyl acetate.

12.3 Bioaccumulation potential

- : The product itself has not been tested. See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Hexamethylene diisocyanate, oligomers (CAS 28182-81-2)	6.11 (calculated)	367.7
n-Butyl acetate (CAS 123-86-4)	2.3	15.3
Xylene (CAS 1330-20-7)	3.12 - 3.2	50 - 58
Hexamethylene diisocyanate (CAS 822-06-0)	3 (calculated)	58 (calculated)

- ### 12.4 Mobility in soil
- : The product itself has not been tested.

12.5 Results of PBT and vPvB assessment

- : This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

12.6 Other Adverse Environmental effects

- : No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SAFETY DATA SHEET




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SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods:

- Handling for Disposal** : Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8. This material and its container must be disposed of in a safe way.
- Methods of Disposal** : Empty containers may contain hazardous residues. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken for local recycling or waste disposal. Dispose of in accordance with the European Directives on waste and hazardous waste. Waste must be classified and labelled prior to recycling or disposal. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	14.1 UN Number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing Group	Label
ADR/RID	UN1866	RESIN SOLUTION	3	III	
EU ADR/RID Classification Code	F1 - Flammable liquids having a flash-point of or below 60 °C				
EU ADR / RID Hazard Identification Number	30 - flammable liquid (flash-point between 23 °C and 60 °C, inclusive) or flammable liquid or solid in the molten state with a flash-point above 60 °C, heated to a temperature equal to or above its flash-point, or self-heating liquid.				
ADR/RID Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass.				
ICAO/IATA	UN1866	Resin solution	3	III	
ICAO/IATA Additional information	Refer to the appropriate Packing Instruction, prior to shipping this material. Review all State and Operator Variations, prior to shipping this material.				
IMDG	UN1866	RESIN SOLUTION	3	III	
IMDG Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass.				

14.5 Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See Section 12 for more environmental information.

14.6 Special precautions for user

- : Appropriate advice on safety must accompany the package. Keep away from heat, sparks and open flame. - No smoking. Keep containers dry and tightly closed to avoid moisture absorption and contamination.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- : Not applicable.

SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended.

SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- : Classification according to Regulation (EC) No. 1272/2008 on the classification of hazardous mixtures.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended:

None of the components are specifically listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use, as amended:

None of the components are specifically listed.

Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances:

None.

Directive 98/24/EC on the protection of the health and safety of workers from risks related to chemical agents at work:

Hexamethylene diisocyanate, oligomers (CAS # 28182-81-2)

n-Butyl acetate (CAS # 123-86-4)

Xylene (CAS # 1330-20-7)

Hexamethylene diisocyanate (CAS # 822-06-0)

Directive 94/33/EC on the protection of young people at work:

Hexamethylene diisocyanate, oligomers (CAS # 28182-81-2)

Hexamethylene diisocyanate (CAS # 822-06-0)

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended [including Regulation (EU) 2015/830].

Follow national regulation for work with chemical agents.

German legislation on water endangering substances VwVwS - Water contaminating class (Germany): 2 (self classified)

15.2 Chemical safety assessment

- : A chemical safety assessment has not been carried out by the Manufacturer of this product.

SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended.

SECTION 16. OTHER INFORMATION

- Legend** : ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE: Acute Toxicity Estimate
CAS: Chemical Abstract Services
CLP: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
EC: European Community
EC50: Effective Concentration 50%.
EEC: European Economic Community
EN: European Standard
ERG: Emergency Response Guidebook
EU: European Union
HSDB: Hazardous Substances Data Bank
IATA: International Air Transport Association
IBC: Intermediate Bulk Container
IMDG: International Maritime Dangerous Goods
LC: Lethal Concentration
LD: Lethal Dose
NOEC: No observable effect concentration
OEL: National occupational exposure limits
PEL: Permissible exposure limit
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail
RTECS: Registry of Toxic Effects of Chemical Substances
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
TWA: Time Weighted Average
WEL: Workplace Exposure Limit
- Information Source** : 1. Material Safety Data Sheet from manufacturer.
2. Canadian Centre for Occupational Health and Safety, CCIInfoWeb Databases, 2015 (Chempendium, RTECs, HSDB, INCHEM).
3. European Chemicals Agency, Classification Legislation, 2015.
4. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2015
- Preparation Date (dd/mm/yyyy)** : 12/08/2015
- Reviewed Date SDS (dd/mm/yyyy)** : 18/11/2015
- Revision No.** : 2
- Revision Information** : Minor formatting change.
- H-Phrases (Full text)** : H226 - Flammable liquid and vapour.
H302 - Harmful if swallowed.
H312 - Harmful in contact with skin.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H330 - Fatal if inhaled.
H332 - Harmful if inhaled.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 - May cause respiratory irritation.
H336 - May cause drowsiness or dizziness.
EUH066 - Repeated exposure may cause skin dryness or cracking.
- Other special considerations for handling** : Provide adequate information, instruction and training for operators.

CHO-BOND® 2165 Part B

SDS No: PHC-061 EU

SDS Revision Date (dd/mm/yyyy): 18/11/2015

Page 15 of 15

SAFETY DATA SHEET

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006, as amended.

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