Safety Data Sheet

Nu-Calgon

Printing date 02.05.2014 Revision: 02.05.2014

1 Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Trade name: Nu-Foam 4293-04, 4293-75**
· **Article number:** EHS 9885
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

· **Application of the substance / the mixture** Sealant

· **1.3 Details of the supplier of the Safety Data Sheet**
· **Supplier:**
Nu Calgon
2008 Altom Court
St. Louis, MO 63146
Phone: 800-554-5499

· **1.4 Emergency telephone number:**
ChemTel Inc.
(800)255-3924, +1 (813)248-0585

2 Hazards identification

· **2.1 Classification of the substance or mixture**
·.
The following Hazard Statements are applicable only to the general GHS regulations and not the specific CLP regulation: H222.

H222: Extremely flammable aerosol.

.

health hazard

Resp. Sens. 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
STOT RE 2	H373	May cause damage to organs through prolonged or repeated exposure.

Acute Tox. 4	H332	Harmful if inhaled.
Skin Irrit. 2	H315	Causes skin irritation.
Eye Irrit. 2	H319	Causes serious eye irritation.
Skin Sens. 1	H317	May cause an allergic skin reaction.

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STOT SE 3 H335 May cause respiratory irritation.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

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· **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
Warning! Pressurized container.

· **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.
The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

· **2.2 Label elements**

.

· **Hazard-determining components of labelling:**
diphenylmethanediisocyanate,isomeres and homologues
4,4'-methylenediphenyl diisocyanate

· **Hazard statements**

.

The following Hazard Statements are applicable only to the general GHS regulations and not the specific CLP regulation: H222.
H222: Extremely flammable aerosol.
H332 Harmful if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

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H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P251 Pressurized container: Do not pierce or burn, even after use.
P211 Do not spray on an open flame or other ignition source.
P280 Wear protective gloves / eye protection.
P260 Do not breathe mist/vapours/spray.
P314 Get medical advice/attention if you feel unwell.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

· **Additional information:**
Contains isocyanates. May produce an allergic reaction.
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.
Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking.
Buildup of explosive mixtures possible without sufficient ventilation.

· **Hazard description:**

· **WHMIS-symbols:**
A - Compressed gas
B5 - Flammable aerosol
D2A - Very toxic material causing other toxic effects

· **NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 4
Reactivity = 1

· **HMIS-ratings (scale 0 - 4)**

Health = *2
Fire = 4
Reactivity = 1

* - Indicates a long term health hazard from repeated or prolonged exposures.

· **HMIS Long Term Health Hazard Substances**	
9016-87-9	diphenylmethanediisocyanate,isomeres and homologues
101-68-8	4,4'-methylenediphenyl diisocyanate

· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.

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· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **3.2 Mixtures**
· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 9016-87-9	diphenylmethanediisocyanate,isomeres and homologues Resp. Sens. 1, H334; STOT RE 2, H373 Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	20-40%
CAS: 101-68-8 EINECS: 202-966-0 Index number: 615-005-00-9	4,4'-methylenediphenyl diisocyanate Resp. Sens. 1, H334; STOT RE 2, H373 Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	10-20%
CAS: 13674-84-5	tris(2-chlorisopropyl)-phosphate R52/53	10-20%
CAS: 115-10-6 EINECS: 204-065-8 Index number: 603-019-00-8	dimethyl ether Flam. Gas 1, H220 Press. Gas, H280	5-10%
CAS: 72-28-5	Isobutane Flam. Gas 1, H220	1-5%
CAS: 74-98-6 EINECS: 200-827-9 Index number: 601-003-00-5	propane Flam. Gas 1, H220 Press. Gas, H280	1-5%

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

· **4.1 Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Take affected persons out into the fresh air.
· **After inhalation:**
Supply fresh air; consult doctor in case of complaints.

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Provide oxygen treatment if affected person has difficulty breathing.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
Do not pull solidified product off the skin.
If skin irritation continues, consult a doctor.
· **After eye contact:**
Immediately remove contact lenses if possible.
Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
· **4.2 Most important symptoms and effects, both acute and delayed**
Asthma attacks
Headache
Breathing difficulty
Allergic reactions
Coughing
Nausea
Gastric or intestinal disorders when ingested.
Irritant to skin and mucous membranes.
Irritant to eyes.
Dizziness
Disorientation
· **Hazards**
Danger of impaired breathing.
Danger of disturbed cardiac rhythm.
Danger of pulmonary oedema.
Danger of pneumonia.
Danger of convulsion.
· **4.3 Indication of any immediate medical attention and special treatment needed**
Severe allergic skin reaction, bronchial spasms and anaphylactic shock are possible.
Treat skin and mucous membrane with antihistamine and corticoid preparations.
In cases of irritation to the lungs, initial treatment with cortical steroid inhalants.
Monitor circulation.
If necessary oxygen respiration treatment.
Medical supervision for at least 48 hours.
Contains isocyanates. May produce an allergic reaction.

5 Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:**
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Water in flooding quantities.
· **For safety reasons unsuitable extinguishing agents:** None.
· **5.2 Special hazards arising from the substance or mixture**
Danger of receptacles bursting because of high vapour pressure when heated.

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During heating or in case of fire poisonous gases are produced.

· **5.3 Advice for firefighters**

· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.

· **Additional information**
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
Eliminate all ignition sources if safe to do so.
Cool endangered receptacles with water spray.

6 Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Use respiratory protective device against the effects of fumes/dust/aerosol.
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources.
Protect from heat.
Isolate area and prevent access.
Keep people at a distance and stay on the windward side.

· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:**
Allow to solidify. Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
Dispose contaminated material as waste according to item 13.

· **6.4 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

· **7.1 Precautions for safe handling**
Keep away from heat and direct sunlight.
Use only in well ventilated areas.

· **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Keep respiratory protective device available.
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C, i.e. electric lights. Do not pierce or burn, even after use.
Do not spray onto a naked flame or any incandescent material.
Emergency cooling must be available in case of nearby fire.

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· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Observe official regulations on storing packagings with pressurized containers.
Provide ventilation for receptacles.
Avoid storage near extreme heat, ignition sources or open flame.
· **Information about storage in one common storage facility:**
Store away from foodstuffs.
Store away from oxidizing agents.
· **Further information about storage conditions:**
Protect from heat and direct sunlight.
Store in a cool place. Heat will increase pressure and may lead to the receptacle bursting.
· **7.3 Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**	
101-68-8 4,4'-methylenediphenyl diisocyanate	
PEL (USA)	Ceiling limit: 0,2 mg/m³, 0,02 ppm
REL (USA)	Long-term value: 0,05 mg/m³, 0,005 ppm Ceiling limit: 0,2* mg/m³, 0,02* ppm *10-min
TLV (USA)	Long-term value: 0,051 mg/m³, 0,005 ppm
EL (Canada)	Short-term value: C 0,01 ppm Long-term value: 0,005 ppm Skin; S
EV (Canada)	Long-term value: 0,005 ppm
115-10-6 dimethyl ether	
IOELV (EU)	Long-term value: 1920 mg/m³, 1000 ppm
WEEL (USA)	Long-term value: 1000 ppm
EL (Canada)	Long-term value: 1000 ppm
72-28-5 Isobutane	
REL (USA)	Long-term value: 1900 mg/m³, 800 ppm
TLV (USA)	Short-term value: 2370 mg/m³, 1000 ppm
EL (Canada)	Short-term value: 750 ppm Long-term value: 600 ppm
EV (Canada)	Long-term value: 800 ppm
74-98-6 propane	
PEL (USA)	Long-term value: 1800 mg/m³, 1000 ppm

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REL (USA)	Long-term value: 1800 mg/m³, 1000 ppm
TLV (USA)	refer to Appendix F: minimal oxygen content
EL (Canada)	Long-term value: 1000 ppm
EV (Canada)	Long-term value: 1,000 ppm

· **DNELs** No further relevant information available.
· **PNECs** No further relevant information available.
· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.
Clean skin thoroughly immediately after handling the product.
· **Respiratory protection:**

Combined Organic Vapor and Particulate Respirator is recommended for use during all processing activities.

· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **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:**

Safety glasses

· **Body protection:** Protective work clothing
· **Limitation and supervision of exposure into the environment**
No further relevant information available.

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· **Risk management measures**
See Section 7 for additional information.
No further relevant information available.

9 Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**
Form: Aerosol
Colour: Amber coloured
· **Odour:** Light
Petroleum-like
· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**
Melting point/Melting range: Not Determined.
Boiling point/Boiling range: -44 °F / -42 °C (propellant)

· **Flash point:** -155 °F / -104 °C (propellant)

· **Flammability (solid, gaseous):** Not applicable.

· **Auto/Self-ignition temperature:** Not determined.

· **Decomposition temperature:** Not determined.

· **Self-igniting:** Product is not self-igniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/ vapour mixtures are possible.

· **Explosion limits:**
Lower: Not determined.
Upper: Not determined.

· **Vapour pressure:** Not determined.

· **Density at 20 °C:** 1,01 g/cm³
· **Relative density** Not determined.
· **Vapour density** Not determined.
· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with water:** Not miscible or difficult to mix.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**
Dynamic: Not determined.
Kinematic: Not determined.

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· **Solvent content:**
VOC (US EPA Method 24) 155 g/l
· **9.2 Other information** No further relevant information available.

10 Stability and reactivity

· **10.1 Reactivity**
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
· **10.3 Possibility of hazardous reactions**
Develops readily flammable gases/fumes.
Flammable.
Reacts with oxidizing agents.
Can form explosive mixtures in air if heated above flash point and/or when sprayed or atomised.
Danger of receptacles bursting because of high vapour pressure when heated.
Contact with acids releases toxic gases.
Toxic fumes may be released if heated above the decomposition point.
· **10.4 Conditions to avoid**
Keep ignition sources away - Do not smoke.
Store away from oxidizing agents.
· **10.5 Incompatible materials:** No further relevant information available.
· **10.6 Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Nitrogen oxides (NOx)
Hydrogen cyanide (prussic acid)
Phosphorus oxides (e.g. P2O5)

11 Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values relevant for classification:**		
101-68-8 4,4'-methylenediphenyl diisocyanate		
Oral	LD50	2200 mg/kg (mouse)

· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** Irritating effect.
· **Sensitization:**
Sensitization possible through inhalation.
Sensitization possible through skin contact.
· **Subacute to chronic toxicity:**
Inhalation of concentrated vapours as well as oral intake will lead to anaesthesia-like conditions and headache, dizziness, etc.

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· **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Harmful
Irritant
Danger through skin adsorption.
Toxic and/or corrosive effects may be delayed up to 24 hours.
In addition to local irritant manifestations, there is a narcotic effect when inhaling high concentrations, with high danger of central respiratory arrest.
· **Acute effects (acute toxicity, irritation and corrosivity):** Vapours have narcotic effect.
· **Repeated dose toxicity:**
May cause damage to organs through prolonged or repeated exposure.
Repeated exposures may result in skin and/or respiratory sensitivity.

12 Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Avoid transfer into the environment.
Harmful to aquatic organisms
This statement was deduced from products with a similar structure or composition.
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

13 Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
Can be disposed of with household garbage after solidification following consultation with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.
· **Uncleaned packaging:**
· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **14.1 UN-Number**
· **DOT, ADR, IMDG, IATA** UN1950

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· **14.2 UN proper shipping name**

Limited Quantity for packages less than 30 kg (66 lb) and inner packagings less than 1 L (0.3 gal).

· **DOT**	Aerosols, flammable
· **ADR**	1950 AEROSOLS, flammable
· **IMDG, IATA**	AEROSOLS, flammable

· **14.3 Transport hazard class(es)**

· **DOT**

· **Class**	2.1
· **Label**	2.1

· **ADR**

· **Class**	2 5F Gases.
· **Label**	2.1

· **IMDG, IATA**

· **Class**	2.1
· **Label**	2.1
· **14.4 Packing group**	
· **DOT, ADR, IMDG, IATA**	Not Regulated
· **14.5 Environmental hazards:**	
· **Marine pollutant:**	No
· **14.6 Special precautions for user**	Warning: Gases.
· **Danger code (Kemler):**	-
· **EMS Number:**	F-D,S-U
· **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.

· **Transport/Additional information:**

· **ADR**	
· **Limited quantities (LQ)**	1L
· **Transport category**	2
· **Tunnel restriction code**	D

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· **UN "Model Regulation":** UN1950, AEROSOLS, flammable, 2.1

15 Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **United States (USA)**
· **SARA**

· **Section 355 (extremely hazardous substances):**	
None of the ingredients is listed.	
· **Section 313 (Specific toxic chemical listings):**	
9016-87-9	diphenylmethanediisocyanate,isomeres and homologues
101-68-8	4,4'-methylenediphenyl diisocyanate
· **TSCA (Toxic Substances Control Act):**	
All ingredients are listed.	

· **Proposition 65 (California):**

· **Chemicals known to cause cancer:**	
None of the ingredients is listed.	
· **Chemicals known to cause reproductive toxicity for females:**	
None of the ingredients is listed.	
· **Chemicals known to cause reproductive toxicity for males:**	
None of the ingredients is listed.	
· **Chemicals known to cause developmental toxicity:**	
None of the ingredients is listed.	

· **Carcinogenic Categories**

· **EPA (Environmental Protection Agency)**		
9016-87-9	diphenylmethanediisocyanate,isomeres and homologues	CBD
101-68-8	4,4'-methylenediphenyl diisocyanate	D, CBD
· **IARC (International Agency for Research on Cancer)**		
9016-87-9	diphenylmethanediisocyanate,isomeres and homologues	3
101-68-8	4,4'-methylenediphenyl diisocyanate	3
· **TLV (Threshold Limit Value established by ACGIH)**		
None of the ingredients is listed.		
· **NIOSH-Ca (National Institute for Occupational Safety and Health)**		
None of the ingredients is listed.		

· **Canada**

· **Canadian Domestic Substances List (DSL)**	
All ingredients are listed.	
· **Canadian Ingredient Disclosure list (limit 0.1%)**	
101-68-8	4,4'-methylenediphenyl diisocyanate

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· **Canadian Ingredient Disclosure list (limit 1%)**

None of the ingredients is listed.

· **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients is listed.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

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

· **Relevant phrases**

H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

R12 Extremely flammable.
R20 Harmful by inhalation.
R36/37/38 Irritating to eyes, respiratory system and skin.
R42/43 May cause sensitisation by inhalation and skin contact.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Flam. Gas 1: Flammable gases, Hazard Category 1
Flam. Aerosol 1: Flammable aerosols, Hazard Category 1
Press. Gas: Gases under pressure: Compressed gas

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Acute Tox. 4: Acute toxicity, Hazard Category 4
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3

· **Sources**

SDS Prepared by:
ChemTel Inc.
1305 North Florida Avenue
Tampa, Florida USA 33602-2902
Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573
Website: www.chemtelinc.com

Nu-Calgon Wholesaler, Inc.

MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Name	Phone Number		CHEMTREC	
Nu-Calgon Wholesaler, Inc.	(314) 469-7000 / (800) 554-5499		(800) 424-9300	
Street Address	**City**	**State**	**Postal Code**	**Last Update**
2008 Altom Court	St. Louis	MO	63146-4151	3/27/07
Product Name	**Product Number**	**Product Use**		**EPA Registration #**
Nu-Foam	4293	Insulating Sealant		N/A

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	% By Wt.	CAS Number	TLV	PEL
Polymethylene polyphenylene isoeyanate	10-30	9016-87-9	No Data.	No Data.
Methylene bisphenyl isocyanatc (MDI)	10-30	101-68-8	.005ppm	0.02 ppm
Flame Retardant	10-30	Proprietary	No Data.	No Data.
Polyol blend	10-30	Proprietary	No Data.	No Data.
Isobutane	5-10	75-28-5	1000 ppm	No Data.
Methylenediphenyl diisocyanate	1-5	26447-40-5	No Data.	No Data.
Propane	1-5	74-98-6	1000 ppm	1000 ppm
Dimethyl ether	1-5	115-10-6	No Data.	No Data.

SECTION 3 – HAZARD IDENTIFICATION

Emergency Overview: Flammable gas. Harmful by inhalation, in eontact with skin and if swallowed. Irritating to eyes, respiratory system and skin. May produee an allergic reaction Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates. May cause drowsiness and dizziness. May cause adverse cardiovascular effects.

Potential Health Effects

Eyes: Irritating to eyes. Risk of serious damage to eyes.

Skin: Harmful in contact with skin. Will bond to skin. May cause sensitization by skin eontact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Ingestion: May be harmful if swallowed. May cause additioual affects as listed under "Inhalation". Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Product may curc in the gastrointestinal traet and form an obstrnction. May eanse adverse cardiac effects, blood disturbances, and metabolic acidosis.

Inhalation: Harmful by inhalation. Irritating to respiratory system. May cause allergic respiratory reaction. Intentional misuse by dcliberately concentrating and inhaling contents may bc harmful or fatal. Inhalation of vapors in high concentration may cause shortness of breath (lung edema). May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Chronic Exposure: Repeated or prolonged exposure may cause central nervous system damage. Intentional misuse by deliberately concentrating and inhaling contents may bc harmful or fatal. Chronie hydrocarbon abuse has been associated with irregular heart rhythms and potential cardiae arrest. Repeated or prolonged contact causes sensitization, asthma and eczemas.

Carcinogenicity: There are no known carcinogenic chemicals in this product.

Medical Conditions Aggravated be Exposure: Allergies. Skin disorders. Respiratory disorders. Central nervous system. Preexisting eye disorders. Kidney disorders. Liver disorders. Interactions with Other Chemieals: Irritants. Sensitizers. Epoxies. Use of alcoholic beverages may enhance toxic effects.

SECTION 4 – FIRST AID MEASURES

Eyes: Call a physician immediately. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing.

Skin: Wash skin with soap and water. If symptoms persist, eall a physician.

Ingestiou: Call a physician or Poison Control Center immediately. May produce an allergie reaction. Do not induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person.

Inhalation: Move victim to fresh air. Apply artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.

SECTION 5 – FIREFIGHTING MEASURES

Flash Point: -104°C / -155°F

Autoignition Temp: No Data.°C / No Data.°F

Hazardous Products of Combustion: No Data.

Flammable Limits in Air: No Data.

Extinguishing Media: Use extinguishing agent suitable for type of surrounding fire. Dry chemical or CO2. Water spray, fog or regular foam. Move containers from fire area if you ean do it without risk. Damaged cylinders should be handled only by specialists.

Fire and Explosion Hazards: Containers may explode when heated. Sensitivity to mechanical impact None/ Sensitivity to static discharge Yes. Specifie Hazards Arising from the Chemical: Some may burn but none ignite readily. Ruptured cylinders may rockct.

Special Firefighting Procedures: Wear self-contained breathing apparatus and protective suit.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spill or Leak: Personal Precautions: Do not touch or walk through spilled material. Stop leak if you can do it without risk.
Methods for Containment: If possible, turn leaking containers so that gas escapes rather than liquid. Allow substance to evaporate.
Methods for Cleaning Up: Do not direct water at spill or source of leak.
Other Information: Ventilate the area.

SECTION 7 – HANDLING AND STORAGE

Handling Procedures and Equipment: Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Take neccssary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition. Use only in an area containing flame proof equipment. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Avoid breathing vapors or mists. Contents under pressure. Do not puncture or incinerate cans. Do not stick pin or any other sharp object into opening on top of can.

Storage Requirements: Keep containers tightly closed in a cool, well-ventilated place. Keep out of the reach of children. Keep at temperatures below 48.8 °C / 120 °F.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in aeeordanee with current local regulations.

Eye Protection: Safety glasses with side-shields.

Protective Clothing: Impervious gloves. Lightweight protective clothing.

Exposure Guidelines:

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Methylene bisphenyl isocyanate (MDI)	TWA: 0.005 ppm	Ceiling: 0.02 ppm Ceiling: 0.2 mg/m3	75 mg/m3
Isobutane	TWA: 1000 ppm	N/A	N/A
Propane	TWA: 1000 ppm	TWA: 1000 ppm	2100 ppm

Specific Engineering Controls (such as ventilation, enclosed process): Showers, Eyewash stations, Ventilation systems. Hygiene Measures When using, do not eat, drink or smoke.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Liquid Aerosol	**Freezing Point**: No Data.°C/No Data.°F	**% Volatile by Weight**: No Data.%
Color: Amber	**Vapor Density [air =1]**: No Data.	**Evaporation Rate**: No Data.
Odor: hydrocarbon-like	**Vapor Pressure**: No Data.	**Specific Gravity**: 1.01
Boiling Point: -42°C/-44°F	**Solubility in Water**: Not Compatible	**pH (concentrate)**: No Data.

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability: Stable under recommended storage conditions

Hazardous Polymerization: Hazardous polymerization does not occur.

Incompatibilities: Water. Alcohols. Strong bases. Strong oxidizing agents. Finely powdered metals.

Reactive Conditions to avoid: Keep away from open flames, hot surfaces and sources of ignition. Temperatures above 48.8 °C / 120 °F.

Decomposition Products: Carbon monoxide (CO), Carbon dioxide (CO2), Nitrogen oxides (NOx), Hydrogen cyanide.

SECTION 11 – TOXICOLOGICAL INFORMATION

Hazardous Ingredients	CAS #	EINECS #	LD 50 of Ingredient (Specify Species)	LC50 of Ingredient (Specify Species)
Polymethylene polyphenylene isocyanate			Oral: 49 g/kg (Rat) Dermal: 9400 mg/kg (Rabbit)	490 mg/m3 (Rat) 4 h
Methylene bisphenyl isocyanate (MDI)			Oral: 9200 mg/kg (Rat)	No Data.
Flame Retardant			Oral: 500 mg/kg (Rat) Oral: 1230 mg/kg (Rabbit) Dermal: 5000 mg/kg (Rat)	5 mg/L (Rat) 4 h
Polyol blend			Oral: 64 mL/kg (Rat) Dermal: 20 mL/kg (Rabbit)	No Data.
Isobutane			No Data.	658 mg/L (Rat) 4 h
Methylenediphenyl diisocyanate			Dermal: 6200 mg/kg (Rabbit)	0.369 mg/L (Rat) 4 h
Propane			Dermal: 658 mg/kg (Rat)	No Data.
Dimethyl ether			No Data.	308.5 mg/L (Rat) 4 h

Chronic Toxicity: Repeated or prolonged exposure may cause central nervous system damage. Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal. Chronic hydrocarbon abuse has been associated with irregular heart rhythms and potential cardiac arrest. Repeated or prolonged contact causes sensitization, asthma and eczemas.
Reproductive Toxicity: This product does not contain any known or suspected reproductive hazards
Target Organ Effects: Central nervous system (CNS), Eyes, Respiratory system, Immune system, Skin, Cardiovascular system.
Endocrine Disruptor Information: This product does not contain any known or suspected endocrine disruptors

SECTION 12 – ECOLOGICAL INFORMATION

Hazardous Ingredients	Aquatic Toxicity Data
Flame Retardant	Toxicity to Algae: EC50 = 4 mg/L 96 h EC50 = 45 mg/L 72 h Microtox: EC50 = 295 mg/L 30 min Daphnia Magna (Water Flea): EC50 = 63 mg/L 48 h
Methylenediphenyl diisocyanate	Toxicity to Algae: EC50 = 3230 mg/L 96 h Daphnia Magna (Water Flea): EC50 > 1000 mg/L 24 h
	Chemical Name — Log Pow Flame Retardant — 2.59 Isobutane — 2.88 Propane — 2.3 Dimethyl ether — -0.18

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal: Should not be released into the environment. Dispose of in accordance with local regulations. Allow foam to cure before disposal.
Contaminated Packaging: Dispose of in accordance with local regulations. US EPA Waste Number D001

SECTION 14 – TRANSPORTATION INFORMATION

Special Shipping Information: No Data.

Purview	Proper Shipping Name	UN Number	Packing Group	Hazard Class
DOT (Land)	Consumer commodity	No Data.	No Data.	ORM-D
IMO (Water)	Aerosols	UN1950	No Data.	2
ICAO (Air)	Aerosols	UN1950	No Data.	2.1

SECTION 15 – REGULATORY INFORMATION

WHMIS Classification: (Workplaee Hazardous Material Information System)	A Compressed gases B5 Flammable aerosol D2A Very toxic materials
SARA Title III: (Superfund Amendments & Reauthorization Act)	Acute Health Hazard Yes/ Chronic Health Hazard Yes/ Fire Hazard Yes/ Sudden Release of Pressure Hazard Yes/ Reactive Hazard No

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values
Polymethylene polyphenylene isocyanate	9016-87-9	10-30	1.0
Methylene bisphenyl isocyanate (MDI)	101-68-8	10-30	1.0
Methylenediphenyl diisocyanate	26447-40-5	1-5	1.0

OSHA: (Occupational Safety & Health Administration)	No Data.
TSCA: (Toxic Substance Control Aet)	Complies
VOC: (volatile Organic Compounds)	EPA VOC (g/l) 155; EPA VOC (lb/gal) 1.29
CPR: (Canadian Controlled Products Regulations)	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations.
EINECS: (European Inventory of Existing Commereial Chemical Substances)	Complies
DSL / NDSL: (Canadian Domestic Substance List)(Non-Domestic Snbstanee List)	No Data.
CERCLA: (Comprehensive Response Compensation & Liability Act)	No Data.
IDL: (Canadian Ingredient Disclosure List)	No Data.
NFPA (HMIS) Rating: (Hazardous Materials Identification System)	Health Hazard 2* Flammability 4 Stability 1 Personal Precantions B

SECTION 16 – OTHER INFORMATION

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Methylene bisphenyl isocyanate (MDI)	X	X	X	X	X
Dimethyl ether	X	X	X		X
Propane	X	X	X		X
Isobutane	X	X	X		

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