

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations


Printing date: May 14, 2018

Revision: May 14, 2018

1 Identification

- **Product identifier**
- **Trade name:** Spal-Pro 2000 Part A
- **Other means of identification:** No other identifiers
- **Recommended use and restriction on use**
- **Recommended use:** Epoxy joint filler
- **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
METZGER/McGUIRE
Mailing Address:
PO Box 2217
Concord, NH 03302
Shipping Address:
807 Route 3-A
Bow, NH 03304
Phone: 603-224-6122
Toll Free: 800-223-6680
Email: info@metzgermcguire.com
- **Emergency telephone number:**
ChemTel Inc.
(800)255-3924 (North America)
+1 (813)248-0585 (International)

2 Hazard(s) identification

- **Classification of the substance or mixture**
Skin Sens. 1 H317 May cause an allergic skin reaction.
- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**

GHS07
- **Signal word:** Warning
- **Hazard statements:**
H317 May cause an allergic skin reaction.
- **Precautionary statements:**
P261 Avoid breathing mist, vapors, or spray.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection.
P302+P352 If on skin: Wash with plenty of soap and water.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P363 Wash contaminated clothing before reuse.

(Cont'd. on page 2)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part A

P501 Dispose of contents/container in accordance with local/regional/national/international regulations. (Cont'd. of page 1)

 · **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

 · **Chemical characterization: Mixtures**

 · **Components:**

106264-79-3	1,3-Benzenediamine, 2(or 4)-methyl-4,6(or 2,6)-bis(methylthio)- ⚠ Acute Tox. 4, H302; Skin Sens. 1, H317	10-20%
5285-60-9	4,4'-methylenebis[N-sec-butylaniline] ⚠ Acute Tox. 4, H302	0-5%
102-60-3	1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol ⚠ Eye Irrit. 2A, H319	0-5%
1333-86-4	Carbon black	0-5%
13463-67-7	titanium dioxide	0-5%
104-19-8	N,N,4-trimethylpiperazine-1-ethylamine ⚠ Acute Tox. 3, H311 ⚠ Skin Corr. 1B, H314; Eye Dam. 1, H318 ⚠ Acute Tox. 4, H302 ⚠ Flam. Liq. 4, H227	<1%

 · **Additional information:**

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret. Non-classification as a carcinogen is based on non-respirable form of product. For the wording of the listed Hazard Statements, refer to section 16.

4 First-aid measures

 · **Description of first aid measures**

- **After inhalation:**
Respiration of particulates is unlikely during normal usage.
Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Do not pull solidified product away from the skin.
Immediately wash with water and soap and rinse thoroughly.
If skin irritation or rash occurs: Get medical advice/attention.
- **After eye contact:**
Remove contact lenses if worn, if possible.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.
- **Most important symptoms and effects, both acute and delayed:**
Headache
Breathing difficulty
Coughing

(Cont'd. on page 3)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part A

(Cont'd. of page 2)

Allergic reactions
 Nausea in case of ingestion.
 Gastric or intestinal disorders when ingested.
 Vomiting.
 Diarrhea.
 Slight irritant effect on eyes.
 Slight irritant effect on skin and mucous membranes.
Indication of any immediate medical attention and special treatment needed:
 Contains 1,3-Benzenediamine, 2(or 4)-methyl-4,6(or 2,6)-bis(methylthio)-. May produce an allergic reaction.
 Treat skin and mucous membrane with antihistamine and corticoid preparations.
 If medical advice is needed, have product container or label at hand.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
 Water fog / haze
 Foam
 Gaseous extinguishing agents
 Fire-extinguishing powder
- **For safety reasons unsuitable extinguishing agents:** Water spray
- **Special hazards arising from the substance or mixture**
 Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:**
 Wear self-contained respiratory protective device.
 Wear fully protective suit.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
 Ensure adequate ventilation.
 Use personal protective equipment as required.
- **Environmental precautions**
 Do not allow to enter sewers/ surface or ground water.
 Inform respective authorities in case of seepage into water course or sewage system.
- **Methods and material for containment and cleaning up**
 Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 Send for recovery or disposal in suitable receptacles.
- **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

(Cont'd. on page 4)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part A

(Cont'd. of page 3)

- **Handling**
- **Precautions for safe handling:**
 Use only in well ventilated areas.
 Avoid contact with the eyes and skin.
 Open and handle receptacle with care.
 Avoid breathing mist, vapors, or spray.
- **Information about protection against explosions and fires:**
 Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:**
 Avoid storage near extreme heat, ignition sources or open flame.
 Store in cool, dry conditions in well sealed receptacles.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Specific end use(s)** No relevant information available.

8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

1333-86-4 Carbon black

PEL (USA)	Long-term value: 3.5 mg/m ³
REL (USA)	Long-term value: 3.5* mg/m ³ *0.1 in presence of PAHs; See Pocket Guide Apps.A+C
TLV (USA)	Long-term value: 3* mg/m ³ *inhalable fraction
EL (Canada)	Long-term value: 3 mg/m ³ IARC 2B
EV (Canada)	Long-term value: 3.5 mg/m ³
LMPE (Mexico)	Long-term value: 3* mg/m ³ A3, *fracción inhalable

13463-67-7 titanium dioxide

PEL (USA)	Long-term value: 15* mg/m ³ *total dust
REL (USA)	See Pocket Guide App. A
TLV (USA)	Long-term value: 10 mg/m ³
EL (Canada)	Long-term value: 10* 3** mg/m ³ *total dust; **respirable fraction; IARC 2B
EV (Canada)	Long-term value: 10 mg/m ³ total dust
LMPE (Mexico)	Long-term value: 10 mg/m ³ A4

- **Exposure controls**
- **General protective and hygienic measures:**
 The usual precautionary measures for handling chemicals should be followed.

(Cont'd. on page 5)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part A

(Cont'd. of page 4)

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.
 Avoid breathing mist, vapors, or spray.

· **Engineering controls:** No relevant information available.

· **Breathing equipment:**

Wear appropriate NIOSH respirator when ventilation is inadequate and occupational exposure limits are exceeded.

· **Protection of hands:**



Protective gloves

· **Eye protection:**



Safety glasses

· **Body protection:** Protective work clothing

· **Limitation and supervision of exposure into the environment**

Avoid release to the environment.

· **Risk management measures** No relevant information available.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **Appearance:**

· **Form:** Liquid
 · **Color:** According to product specification

· **Odor:** Not determined.

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Melting point/Melting range:** Not determined.

· **Boiling point/Boiling range:** Not determined.

· **Flash point:** >93 °C (>199.4 °F)

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

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

· **Decomposition temperature:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits**

· **Lower:** Not determined.

· **Upper:** Not determined.

· **Oxidizing properties:** Not determined.

(Cont'd. on page 6)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part A

(Cont'd. of page 5)

· **Vapor pressure:** Not determined.

· **Density:**
 · **Relative density:** Not determined.
 · **Vapor density:** Not determined.
 · **Evaporation rate:** Not determined.

· **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.
 · **Other information** No relevant information available.

10 Stability and reactivity

· **Reactivity:** No relevant information available.

· **Chemical stability:** Stable under normal temperatures and pressures.

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

· **Possibility of hazardous reactions**

Exothermic polymerization.
 Reacts with oxidizing agents.
 Reacts with strong acids and alkali.
 Reacts with peroxides and other radical forming substances.

· **Conditions to avoid**

Store away from oxidizing agents.

Avoid acids.

Excessive heat.

· **Incompatible materials** Oxidizers, strong bases, strong acids

· **Hazardous decomposition products** Carbon monoxide and carbon dioxide

11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:** Based on available data, the classification criteria are not met.

· **LD/LC50 values that are relevant for classification:**

106264-79-3 1,3-Benzenediamine, 2(or 4)-methyl-4,6(or 2,6)-bis(methylthio)-

Oral	LD50	1515 mg/kg (rat)
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104-19-8 N,N,4-trimethylpiperazine-1-ethylamine

Oral	LD50	1420 mg/kg (rat)
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Dermal	LD50	390 mg/kg (rabbit)
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· **Primary irritant effect:**

(Cont'd. on page 7)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part A

(Cont'd. of page 6)

- **On the skin:** Based on available data, the classification criteria are not met.
- **On the eye:** Based on available data, the classification criteria are not met.
- **Sensitization:** Sensitization possible through skin contact.

IARC (International Agency for Research on Cancer):

1333-86-4	Carbon black	2B
13463-67-7	titanium dioxide	2B

NTP (National Toxicology Program):

None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration):

None of the ingredients are listed.

Probable route(s) of exposure:

- Ingestion.
- Eye contact.
- Skin contact.
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.

Carcinogenicity:

Contains known or suspect carcinogens when inhaled. Product is in non-inhalable form and is nonclassifiable as a carcinogen.

Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure: Based on available data, the classification criteria are not met.

STOT-repeated exposure: Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

12 Ecological information
Toxicity
Aquatic toxicity

Toxic to aquatic life with long lasting effects.

106264-79-3 1,3-Benzenediamine, 2(or 4)-methyl-4,6(or 2,6)-bis(methylthio)-

LC50	16.9 mg/l (Oncorhynchus mykiss)
EC50	1.1 mg/l (daphnia)
ErC50	7.6 mg/l (Pseudokirchneriella subcapitata)

Persistence and degradability No relevant information available.

Bioaccumulative potential: No relevant information available.

Mobility in soil: No relevant information available.

Additional ecological information
General notes: Do not allow product 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 relevant information available.

13 Disposal considerations

(Cont'd. on page 8)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part A

(Cont'd. of page 7)

Waste treatment methods
Recommendation:

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. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

Uncleaned packagings
Recommendation:

Disposal must be made according to official regulations. Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning. Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

14 Transport information
UN-Number

 · DOT Not regulated.
 · ADR, IMDG, IATA UN3082

UN proper shipping name

 · DOT Not regulated.
 · ADR, IMDG, IATA ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,3-Benzenediamine, 2(or 4)-methyl-4,6(or 2,6)-bis(methylthio)-)

Transport hazard class(es)

 · DOT Not regulated.
 · Class

ADR

 · Class 9 (M6)
 · Label 9

IMDG, IATA

 · Class 9
 · Label 9

Packing group

 · DOT Not regulated.
 · ADR, IMDG, IATA III

(Cont'd. on page 9)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part A

(Cont'd. of page 8)

· **Environmental hazards** Product contains environmentally hazardous substances: 1,3-Benzenediamine, 2(or 4)-methyl-4,6(or 2,6)-bis(methylthio)-

· **Marine pollutant:**



Yes

· **Special precautions for user** Warning: Miscellaneous dangerous substances and articles

· **Danger code (Kemler):** 90

· **EMS Number:** F-A,S-F

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:** Not regulated when carried in single or combination packaging containing a net quantity of 5L or less for liquids or 5 kg or less for solids per the following:
ADR: SP 375
IMDG: 2.10.2.7
IATA: special provision A197

· **DOT**

· **Remarks:** Transport labeling is not required for non-bulk single package shipments by motor vehicle, rail car or aircraft. Bulk packaging consists of a maximum capacity of greater than 450L (119 gallons) for a liquid and a maximum net mass greater than 400kg (882 pounds) for a solid.

15 Regulatory information

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

· **United States (USA)**

· **SARA**

· **Section 302 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act)**

All ingredients are listed.

· **Proposition 65 (California)**

(Cont'd. on page 10)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part A

(Cont'd. of page 9)

· **Chemicals known to cause cancer:** Reference to chemical component(s) listed below are based on unbound respirable particles and are not generally applicable to product as supplied.

1333-86-4	Carbon black
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13463-67-7	titanium dioxide
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· **Chemicals known to cause developmental toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

· **IARC (International Agency for Research on Cancer):** Reference to chemical component(s) listed below are based on unbound respirable particles and are not generally applicable to product as supplied.

1333-86-4	Carbon black	2B
-----------	--------------	----

13463-67-7	titanium dioxide	2B
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· **Canadian Domestic Substances List (DSL):**

All ingredients listed on DSL or NDSL.

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.

· **Date of preparation / last revision** May 14, 2018 / -

· **Abbreviations and acronyms:**

ADR: 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

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bio-accumulable, Toxic

vPvB: very Persistent and very Bioaccumulative

OSHA: Occupational Safety & Health Administration

Flam. Liq. 4: Flammable liquids – Category 4

Acute Tox. 4: Acute toxicity – Category 4

Acute Tox. 3: Acute toxicity – Category 3

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

Skin Sens. 1: Skin sensitisation – Category 1

· **Sources**

Website, European Chemicals Agency (echa.europa.eu)

Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)

Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)

(Cont'd. on page 11)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part A

(Cont'd. of page 10)

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6
 Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN:
 978-0-07-176923-5.
 Safety Data Sheets, Individual Manufacturers

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 Tampa, Florida USA 33602-2902
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 Website: www.chemtelinc.com

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

1 Identification

- **Product identifier**
- **Trade name:** Spal-Pro 2000 Part B
- **Other means of identification:** No other identifiers
- **Recommended use and restriction on use**
- **Recommended use:** Industrial uses.
- **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
 METZGER/McGUIRE
 Mailing Address:
 PO Box 2217
 Concord, NH 03302
 Shipping Address:
 807 Route 3-A
 Bow, NH 03304
 Phone: 603-224-6122
 Toll Free: 800-223-6680
 Email: info@metzgermcguire.com
- **Emergency telephone number:**
 ChemTel Inc.
 (800)255-3924 (North America)
 +1 (813)248-0585 (International)

2 Hazard(s) identification

- **Classification of the substance or mixture**
- Acute Tox. 4 H332 Harmful if inhaled.
- Skin Irrit. 2 H315 Causes skin irritation.
- Eye Irrit. 2A H319 Causes serious eye irritation.
- Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Skin Sens. 1 H317 May cause an allergic skin reaction.
- Carc. 2 H351 Suspected of causing cancer.
- STOT SE 3 H335 May cause respiratory irritation.
- STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

Label elements
GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms:


GHS07 GHS08

- **Signal word:** Danger
- **Hazard statements:**

(Cont'd. on page 2)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part B

(Cont'd. of page 1)

- 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:

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe mist/vapors/spray.
- 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.
- P280 Wear protective gloves/protective clothing/eye protection.
- P285 In case of inadequate ventilation wear respiratory protection.
- P302+P352 If on skin: Wash with plenty of soap and water.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P312 Call a poison center/doctor if you feel unwell.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P342+P311 If experiencing respiratory symptoms: Call a poison center/doctor.
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

Chemical characterization: Mixtures

Components:

9016-87-9	diphenylmethanediisocyanate, isomeres and homologues <ul style="list-style-type: none"> ⚠ Resp. Sens. 1, H334; STOT RE 2, H373 ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335 	0-35%
112898-48-3	Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol (3:1), polymer with 1,1'-methylenebis[isocyanatobenzene] <ul style="list-style-type: none"> ⚠ Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373 ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335 	0-35%
26447-40-5	methylenediphenyl diisocyanate <ul style="list-style-type: none"> ⚠ Resp. Sens. 1, H334; STOT RE 2, H373 	0-25%

(Cont'd. on page 3)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part B

(Cont'd. of page 2)

101-68-8	4,4'-methylenediphenyl diisocyanate <ul style="list-style-type: none"> ⚠ Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373 ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335 	0-20%
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Additional information:

For the wording of the listed Hazard Statements, refer to section 16.
 For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.

4 First-aid measures

Description of first aid measures

After inhalation:

Supply fresh air and to be sure to call for a doctor.
 Provide oxygen treatment if affected person has difficulty breathing.
 In case of irregular breathing or respiratory arrest provide artificial respiration.
 In case of unconsciousness place patient stably in side position for transportation.

After skin contact:

Immediately remove any clothing soiled by the product.
 Immediately wash with water and soap and rinse thoroughly.
 If skin irritation continues, consult a doctor.

After eye contact:

Remove contact lenses if worn.
 Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing:

Rinse out mouth and then drink plenty of water.
 Do not induce vomiting; immediately call for medical help.

Most important symptoms and effects, both acute and delayed:

- Asthma attacks
- Headache
- Breathing difficulty
- Coughing
- Allergic reactions
- Irritant to skin and mucous membranes.
- Causes eye irritation.
- May cause respiratory irritation.
- Gastric or intestinal disorders when ingested.
- Nausea in case of ingestion.

Danger:

Danger of impaired breathing.
 Harmful if inhaled.
 May cause damage to organs through prolonged or repeated exposure.
 Suspected of causing cancer.

Indication of any immediate medical attention and special treatment needed:

Contains 4,4'-methylenediphenyl diisocyanate, diphenylmethanediisocyanate, isomeres and homologues, Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol (3:1), polymer with 1,1'-methylenebis[isocyanatobenzene], methylenediphenyl diisocyanate. May produce an allergic reaction.
 Severe allergic skin reaction, bronchial spasms and anaphylactic shock are possible.

(Cont'd. on page 4)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part B

(Cont'd. of page 3)

Medical supervision for at least 48 hours.
 If necessary oxygen respiration treatment.
 Later observation for pneumonia and pulmonary edema.
 Treat skin and mucous membrane with antihistamine and corticoid preparations.
 In cases of irritation to the lungs, initial treatment with cortical steroid inhalants.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray.
- **For safety reasons unsuitable extinguishing agents:** Water stream.
- **Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.
Wear fully protective suit.

6 Accidental release measures

- **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.
Isolate area and prevent access.
- **Environmental precautions**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Methods and material for containment and cleaning up**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Send for recovery or disposal in suitable receptacles.
- **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:**
Avoid splashes or spray in enclosed areas.
Use only in well ventilated areas.
Avoid breathing mist, vapors, or spray.
Avoid contact with the eyes and skin.
- **Information about protection against explosions and fires:**

(Cont'd. on page 5)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part B

(Cont'd. of page 4)

- Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
 - **Requirements to be met by storerooms and 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 oxidizers, strong acids, strong bases.
 - **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Protect from humidity and water.
 - **Specific end use(s)** No relevant information available.

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

101-68-8 4,4'-methylenediphenyl diisocyanate

PEL (USA)	Ceiling limit value: 0.2 mg/m ³ , 0.02 ppm
REL (USA)	Long-term value: 0.05 mg/m ³ , 0.005 ppm Ceiling limit value: 0.2* mg/m ³ , 0.02* ppm *10-min
TLV (USA)	Long-term value: 0.051 mg/m ³ , 0.005 ppm
EL (Canada)	Long-term value: 0.005 ppm Ceiling limit value: 0.01 ppm Skin; S(R)
EV (Canada)	Long-term value: 0.005 ppm Ceiling limit value: 0.02 ppm
LMPE (Mexico)	Long-term value: 0.005 ppm

- **Exposure controls**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
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.
- **Engineering controls:** No relevant information available.
- **Breathing equipment:**



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

- **Protection of hands:**

(Cont'd. on page 6)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part B

(Cont'd. of page 5)



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Eye protection:


Safety glasses

Body protection: Protective work clothing

Limitation and supervision of exposure into the environment

No relevant information available.

9 Physical and chemical properties

Information on basic physical and chemical properties
Appearance:

Form:	Liquid
Color:	According to product specification
Odor:	Characteristic
Odor threshold:	Not determined.

pH-value: Not determined.

Melting point/Melting range: Not determined.

Boiling point/Boiling range: Not determined.

Flash point: >93 °C (>199.4 °F)

Flammability (solid, gaseous): Not applicable.

Auto-ignition temperature: Not determined.

Decomposition temperature: Not determined.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits

Lower: Not determined.

Upper: Not determined.

Oxidizing properties: Not determined.

Vapor pressure: Not determined.

Density:

Relative density: Not determined.

Vapor density: Not determined.

Evaporation rate: Not determined.

Solubility in / Miscibility with

Water: Slowly reacts with water.

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

(Cont'd. on page 7)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part B

(Cont'd. of page 6)

Viscosity

Dynamic: Not determined.

Kinematic: Not determined.

Other information

No relevant information available.

10 Stability and reactivity

Reactivity: No relevant information available.

Chemical stability: Stable under normal temperatures and pressures.

Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

Possibility of hazardous reactions

Toxic fumes may be released if heated above the decomposition point.

Exothermic polymerization.

Reacts with alcohols, amines, aqueous acids and alkalis.

Reacts with strong oxidizing agents.

Conditions to avoid

Moisture.

Excessive heat.

Incompatible materials Oxidizers, strong bases, strong acids

Hazardous decomposition products

Carbon monoxide and carbon dioxide

Nitrogen oxides (NOx)

Isocyanate

Hydrogen cyanide (prussic acid)

11 Toxicological information

Information on toxicological effects
Acute toxicity: Harmful if inhaled.

LD/LC50 values that are 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: May cause sensitisation by inhalation and skin contact.

IARC (International Agency for Research on Cancer):

None of the ingredients are listed.

NTP (National Toxicology Program):

None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration):

None of the ingredients are listed.

(Cont'd. on page 8)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part B

(Cont'd. of page 7)

- **Probable route(s) of exposure:**
Ingestion.
Eye contact.
Skin contact.
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Suspected of causing cancer.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** May cause respiratory irritation.
- **STOT-repeated exposure:** May cause damage to organs through prolonged or repeated exposure.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity** No relevant information available.
- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:**
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 relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
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. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.
- **Uncleaned packagings**
- **Recommendation:**
Disposal must be made according to official regulations. Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning. Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

14 Transport information

· **UN-Number**

(Cont'd. on page 9)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part B

(Cont'd. of page 8)

- **DOT, ADR, IMDG, IATA** Not regulated.
- **UN proper shipping name**
- **DOT, ADR, IMDG, IATA** Not regulated.
- **Transport hazard class(es)**
- **DOT, ADR, IMDG, IATA**
- **Class** Not regulated.
- **Packing group**
- **DOT, ADR, IMDG, IATA** Not regulated.
- **Environmental hazards**
- **Marine pollutant:** No
- **Special precautions for user** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**
- **Section 302 (extremely hazardous substances):**
None of the ingredients are listed.
- **Section 355 (extremely hazardous substances):**
None of the ingredients are listed.
- **Section 313 (Specific toxic chemical listings):**
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 are listed.
- **Chemicals known to cause developmental toxicity for females:**
None of the ingredients are listed.
- **Chemicals known to cause developmental toxicity for males:**
None of the ingredients are listed.
- **Chemicals known to cause developmental toxicity:**
None of the ingredients are listed.
- **EPA (Environmental Protection Agency):**

(Cont'd. on page 10)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: May 14, 2018

Revision: May 14, 2018

Trade name: Spal-Pro 2000 Part B

(Cont'd. of page 9)

101-68-8 | 4,4'-methylenediphenyl diisocyanate

D, CBD

IARC (International Agency for Research on Cancer):

None of the ingredients are listed.

Canadian Domestic Substances List (DSL):

All ingredients are listed.

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.

· **Date of preparation / last revision** May 14, 2018 / -

· **Abbreviations and acronyms:**

ADR: 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

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bio-accumulable, Toxic

vPvB: very Persistent and very Bioaccumulative

OSHA: Occupational Safety & Health Administration

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

Resp. Sens. 1: Respiratory sensitisation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

Carc. 2: Carcinogenicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

· **Sources**

Website, European Chemicals Agency (echa.europa.eu)

Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor_internet/registry/substreg/home/overview/home.do)

Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaassen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

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