

**Material Safety Data Sheet**

acc. to ISO/DIS 11014

MERECO

Printing date 08/26/2005

Version 1

Reviewed on 08/26/2005

1 Identification of substance

- **Trade name:** **Metrethane 4701 Activator**
- **Application of the substance / the preparation** Hardening agent / Curing agent
- **Manufacturer/Supplier:** Mereco Division
Metachem Resins Corporation
1505 Main Street
West Warwick, RI 02893
USA Phone +1 / 401 / 822-9300
- **Information department:** Technical department.
- **Emergency information:** Telephone: (401) 822-9300

2 Composition/Data on components

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· Components:	
polyol	Xi; R 36/38
Diglycidyl Ether Bisphenol-A epoxy resin	Xi, N; R 36/38-43-51/53
Flame retardant	Xn; R 20/21/22
Additive	Xn, N; R 22-37/38-40-51/53

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

This material is a blend of liquid curing agents and mineral or ceramic powders. The powders do not pose airborne hazards to the user of this formulated product because they are completely encapsulated in the liquid materials. If one of the specific powdered ingredients is hazardous in accordance with Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 it is identified in section 15 of the MSDS (SARA Section 313).

3 Hazards identification

- **Hazard description:** Xn Harmful
- **Information pertaining to particular dangers for man and environment:** The product has to be labelled due to the calculation procedure of international guidelines.
R 36/38 Irritating to eyes and skin.
R 40 Limited evidence of a carcinogenic effect.
R 43 May cause sensitisation by skin contact.

(Contd. on page 2)

— USA —

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/26/2005

Version 1

Reviewed on 08/26/2005

Trade name: Metrethane 4701 Activator

(Contd. from page 1)

R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Contains epoxy constituents. See information supplied by the manufacturer.

- **Classification system:** The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0 - 4)**
 - Health = 2
 - Fire = 0
 - Reactivity = 0
- **HMS-ratings (scale 0 - 4)**
 - Health = *2
 - Fire = 0
 - Reactivity = 0

4 First aid measures

- **After inhalation:** Supply fresh air. For added safety, call a doctor.
In case of unconsciousness place patient in a stable side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.

5 Fire fighting measures

- **Suitable extinguishing agents:** CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Person-related safety precautions:** Mouth respiratory protective device.
- **Measures for environmental protection:** Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:** Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

— USA —

(Contd. on page 3)

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/26/2005

Version 1

Reviewed on 08/26/2005

Trade name: Metrethane 4701 Activator

(Contd. from page 2)

7 Handling and storage

- **Handling:**

- **Information for safe handling:**

Store in cool, dry place in tightly closed receptacles.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
Use only in well ventilated areas.

- **Information about protection against explosions and fires:**

The product forms flammable fumes when heated.

- **Storage:**

- **Requirements to be met by storerooms and receptacles:**

No special requirements.

- **Information about storage in one common storage facility:**

Not required.

- **Further information about storage conditions:**

Keep receptacle tightly sealed.
Protect from humidity and water.
This product is hygroscopic.

8 Exposure controls and personal protection

- **Additional information about design of technical systems:**

No further data; see item 7.

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

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- **Additional information:**

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

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

- **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device.
In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

- **Protection of hands:**

Protective gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material is based on consideration of the penetration times, rates of diffusion and the degradation of the material.

(Contd. on page 4)

— USA —

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/26/2005

Version 1

Reviewed on 08/26/2005

Trade name: Metrethane 4701 Activator

(Contd. from page 3)

- **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 penetration time has to be determined by the glove manufacturer and has to be observed.
 - **Eye protection:** Tightly sealed goggles
-

9 Physical and chemical properties

· General Information	
· Form:	Liquid
· Color:	Black
· Odor:	Mild
· Change in condition	
· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	201°C
· Flash point:	217°C
· Auto igniting:	Product is not self-igniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Density at 20°C:	1.60 g/cm ³
· Solubility in / Miscibility with	
· Water:	Not miscible or difficult to mix.
· Solvent content:	
· Organic solvents:	0.0 %

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
 - **Dangerous reactions** Reacts with alkali, amines and strong acids.
Reacts with oxidizing agents.
 - **Dangerous products of decomposition:** Flammable gases/vapors
Irritant gases/vapors
Tetrahydrofuran
-

— USA —

(Contd. on page 5)

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/26/2005

Version 1

Reviewed on 08/26/2005

Trade name: Metrethane 4701 Activator

(Contd. from page 4)

11 Toxicological information

· **Acute toxicity:**

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

115-96-8 tris(2-chloroethyl) phosphate		
Oral	LD50	1230 mg/kg (rat)

· **Primary irritant effect:**

· **on the skin:**

Irritant to skin and mucous membranes.

· **on the eye:**

Irritating effect.

· **Sensitization:**

Sensitization possible through skin contact.

· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

12 Ecological information

· **Ecotoxicological effects:**

· **Remark:**

Harmful to fish

· **General notes:**

Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
Harmful to aquatic organisms

13 Disposal considerations

· **Product:**

· **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**

· **Recommendation:**

Disposal must be made according to official regulations.

14 Transport information

· **DOT regulations:**

· **Hazard class:**

-

Not Regulated

· **Proper shipping name (technical name):** Not Regulated

· **Land transport ADR/RID (cross-border):**

· **ADR/RID class:**

-

Not Regulated

· **Maritime transport IMDG:**

· **IMDG Class:**

-

Not Regulated

(Contd. on page 6)

— USA —

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/26/2005

Version 1

Reviewed on 08/26/2005

Trade name: Metrethane 4701 Activator

(Contd. from page 5)

· Marine pollutant:	No
· Air transport ICAO-TI and IATA-DGR:	-
· ICAO/IATA Class:	Not Regulated

15 Regulations

· Sara

· Section 355 (extremely hazardous substances):	
None of the ingredients is listed.	

· Section 313 (Specific toxic chemical listings):		
1163-19-5	bis(pentabromophenyl) ether	10-20%

· Sections 311/312 (Specific hazard chemical listings):	
115-96-8	tris(2-chloroethyl) phosphate

· Sections 311/312 Hazard Categorizations:			
115-96-8	tris(2-chloroethyl) phosphate	A, C = Acute, Chronic health hazards	3-10%

· TSCA (Toxic Substances Control Act):	
All ingredients are listed.	

· Proposition 65

· Chemicals known to cause cancer:		
115-96-8	tris(2-chloroethyl) phosphate	3-10%

· Chemicals known to cause reproductive toxicity:	
None of the ingredients is listed.	

· Carcinogenicity categories

· EPA (Environmental Protection Agency)	
None of the ingredients is listed.	

· IARC (International Agency for Research on Cancer)			
1163-19-5	bis(pentabromophenyl) ether	3	10-20%
115-96-8	tris(2-chloroethyl) phosphate	3	3-10%
1333-86-4	Carbon black	2B	<0,5%

· NTP (National Toxicology Program)	
None of the ingredients is listed.	

· TLV (Threshold Limit Value established by ACGIH)	
None of the ingredients is listed.	

· MAK (German Maximum Workplace Concentration)			
1333-86-4	Carbon black	3	<0,5%

· NIOSH-Ca (National Institute for Occupational Safety and Health)		
1333-86-4	Carbon black	<0,5%

(Contd. on page 7)

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/26/2005

Version 1

Reviewed on 08/26/2005

Trade name: Metrethane 4701 Activator

(Contd. from page 6)

· OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

- **Product related hazard informations:** The product has been classified and marked in accordance with directives on hazardous materials.
- **Hazard symbols:** Xn Harmful
- **Hazard-determining components of labelling:** Diglycidyl ether Bisphenol-A epoxy resin tris(2-chloroethyl) phosphate
- **Risk phrases:**
 - 36/38 Irritating to eyes and skin.
 - 40 Limited evidence of a carcinogenic effect.
 - 43 May cause sensitisation by skin contact.
 - 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **Safety phrases:**
 - 9 Keep container in a well-ventilated place.
 - 23 Do not breathe gas/fumes/vapour/spray.
 - 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 - 28 After contact with skin, wash immediately with plenty of ... (to be specified by the manufacturer).
 - 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 - 60 This material and its container must be disposed of as hazardous waste.
 - 61 Avoid release to the environment. Refer to special instructions/safety data sheets.
- **Special labeling of certain preparations:** Contains epoxy constituents. See information supplied by the manufacturer.

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 R-phrases**
 - 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
 - 22 Harmful if swallowed.
 - 36/38 Irritating to eyes and skin.
 - 37/38 Irritating to respiratory system and skin.
 - 40 Limited evidence of a carcinogenic effect.
 - 43 May cause sensitisation by skin contact.
 - 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **Department issuing MSDS:** Technical department.
- **Contact:** Dr. John F. Plummer

**Material Safety Data Sheet**

acc. to ISO/DIS 11014

MERECO

Printing date 08/26/2005

Version 1

Reviewed on 08/26/2005

1 Identification of substance

- **Trade name:** **Metrethane 4701 Base**
- **Application of the substance / the preparation** Isocyanate resin
- **Manufacturer/Supplier:** Mereco Division
Metachem Resins Corporation
1505 Main Street
West Warwick, RI 02893
USA Phone +1 / 401 / 822-9300
- **Information department:** Technical department.
- **Emergency information:** Telephone: (401) 822-9300

2 Composition/Data on components

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· Components:		
9016-87-9	diphenylmethanediisocyanate, isomers and homologues	Xn; R 20/22-36/37/38-42/43
101-68-8	4,4'-methylenediphenyl diisocyanate	Xn; R 20/22-36/37/38-42/43
26447-40-5	methylenediphenyl diisocyanate (2,2'; 2,4)	Xn; R 20/22-36/37/38-42/43

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

3 Hazards identification

- **Hazard description:** Xn Harmful
- **Information pertaining to particular dangers for man and environment:**

The product has to be labelled due to the calculation procedure of international guidelines.
Contact with skin and inhalation of aerosols/ vapours of the preparation should be avoided.
R 20/22 Harmful by inhalation and if swallowed.
R 36/37/38 Irritating to eyes, respiratory system and skin.
R 42/43 May cause sensitisation by inhalation and skin contact.
Contains isocyanates. See information supplied by the manufacturer.
- **Classification system:** The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 1
Reactivity = 1

(Contd. on page 2)

— USA —

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/26/2005

Version 1

Reviewed on 08/26/2005

Trade name: Metrethane 4701 Base

(Contd. from page 1)

· **HMIS-ratings (scale 0 - 4)**

Health	= *3
Fire	= 1
Reactivity	= 1

4 First aid measures

- **General information:** Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident. Seek immediate medical advice.
 - **After inhalation:** Supply fresh air. For added safety, call a doctor. In case of unconsciousness place patient in a stable side position for transportation.
 - **After skin contact:** Immediately wash with water and soap and rinse thoroughly. If skin irritation continues, consult a doctor.
 - **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
 - **After swallowing:** Immediately call a doctor. Induce vomiting, if person is conscious. Seek medical help.
 - **Information for doctor:**
 - **The following symptoms may occur:** Breathing difficulty
Nausea
-

5 Fire fighting measures

- **Suitable extinguishing agents:** CO₂, sand, extinguishing powder. Do not use water. Foam
 - **For safety reasons unsuitable extinguishing agents:** Water
 - **Special hazards caused by the material, its products of combustion or resulting gases:** Formation of toxic gases is possible during heating or in case of fire.
 - **Protective equipment:** Mouth respiratory protective device.
 - **Additional information:** Cool endangered receptacles with water spray.
-

6 Accidental release measures

- **Person-related safety precautions:** Mouth respiratory protective device.
- **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:** Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose contaminated material as waste according to item 13.

(Contd. on page 3)

— USA —

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/26/2005

Version 1

Reviewed on 08/26/2005

Trade name: Metrethane 4701 Base

(Contd. from page 2)

 Ensure adequate ventilation.

7 Handling and storage

- **Handling:**

- **Information for safe handling:**

Store in cool, dry place in tightly closed receptacles.
 Ensure good ventilation/exhaustion at the workplace.
 Prevent formation of aerosols.
 Use only in well ventilated areas.

- **Information about protection against explosions and fires:**

Protect from heat.
 Emergency cooling must be available in case of nearby fire.

- **Storage:**

- **Requirements to be met by storerooms and receptacles:**

No special requirements.

- **Information about storage in one common storage facility:**

Not required.

- **Further information about storage conditions:**

Keep receptacle tightly sealed.
 Protect from humidity and water.
 Store in a cool place. Heat will increase pressure and may lead to the receptacle bursting.

8 Exposure controls and personal protection

- **Additional information about**

design of technical systems: No further data; see item 7.

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

9016-87-9 diphenylmethanediisocyanate, isomers and homologues	
TLV	(as inhalable aerosols)
101-68-8 4,4'-methylenediphenyl diisocyanate	
PEL	Short-term value: C 0.2 mg/m ³ , C 0.02 ppm
REL	Short-term value: C 0.2* mg/m ³ , C 0.02* ppm Long-term value: 0.05 mg/m ³ , 0.005 ppm *10-min

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

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.
 Immediately remove all soiled and contaminated clothing.
 Wash hands before breaks and at the end of work.
 Avoid contact with the eyes and skin.

(Contd. on page 4)

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/26/2005

Version 1

Reviewed on 08/26/2005

Trade name: Metrethane 4701 Base

(Contd. from page 3)

- **Breathing equipment:** In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
 - **Protection of hands:** Protective gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material is based on consideration of the penetration times, rates of diffusion and the degradation of the material.
 - **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 penetration time has to be determined by the glove manufacturer and has to be observed.
 - **Eye protection:** Tightly sealed goggles
-

9 Physical and chemical properties

· General Information	
· Form:	Liquid
· Color:	Dark brown
· Odor:	Mild
· Change in condition	
· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	190°C
· Flash point:	111°C
· Ignition temperature:	400.0°C
· Auto igniting:	Product is not self-igniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
· Lower:	0.4 Vol %
· Vapor pressure at 20°C:	0.0 hPa
· Density at 20°C:	1.24 g/cm ³
· Solubility in / Miscibility with	
· Water:	Hydrolized.

(Contd. on page 5)

— USA —

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/26/2005

Version 1

Reviewed on 08/26/2005

Trade name: Metrethane 4701 Base

(Contd. from page 4)

- | | |
|----------------------------|-------|
| · Solvent content: | |
| · Organic solvents: | 0.0 % |

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Dangerous reactions**
 - Reacts with water.
 - Reacts with amines.
- **Dangerous products of decomposition:**
 - Nitrogen oxides
 - Isocyanate
 - Irritant gases/vapors (possible HCN)

11 Toxicological information

- **Acute toxicity:**

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

101-68-8 4,4'-methylenediphenyl diisocyanate		
Oral	LD50	2200 mg/kg (mouse) > 10.000 mg/kg (rat)
Dermal	LD50	> 6200 mg/kg (rabbit)

- **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.
- **Additional toxicological information:** The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant

12 Ecological information

- **General notes:** Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

13 Disposal considerations

- **Product:**
- **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

(Contd. on page 6)

— USA —

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/26/2005

Version 1

Reviewed on 08/26/2005

Trade name: Metrethane 4701 Base

(Contd. from page 5)

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· DOT regulations:	
· Hazard class:	- Not Regulated
· Proper shipping name (technical name):	Not Regulated
· Land transport ADR/RID (cross-border):	
· ADR/RID class:	- Not Regulated
· Maritime transport IMDG:	
· IMDG Class:	- Not Regulated
· Marine pollutant:	No
· Air transport ICAO-TI and IATA-DGR:	
· ICAO/IATA Class:	- Not Regulated

15 Regulations

- **Sara**

· Section 355 (extremely hazardous substances):
None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):	
9016-87-9 diphenylmethanediisocyanate, isomers and homologues	20-50%
101-68-8 4,4'-methylenediphenyl diisocyanate	20-50%

· Sections 311/312 (Specific hazard chemical listings):
All ingredients are listed.

· Sections 311/312 Hazard Categorizations:		
9016-87-9 diphenylmethanediisocyanate, isomers and homologues	A = Acute; C = Chronic (health hazards)	20-50%
101-68-8 4,4'-methylenediphenyl diisocyanate	A = Acute; C = Chronic (health hazards)	20-50%
26447-40-5 methylenediphenyl diisocyanate (2,2'; 2,4)	A = Acute; C = Chronic (health hazards)	10-20%

· TSCA (Toxic Substances Control Act):
All ingredients are listed.

- **Proposition 65**

· Chemicals known to cause cancer:
None of the ingredients is listed.

(Contd. on page 7)

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/26/2005

Version 1

Reviewed on 08/26/2005

Trade name: Metrethane 4701 Base

(Contd. from page 6)

· Chemicals known to cause reproductive toxicity:		
None of the ingredients is listed.		
· Carcinogenicity categories		
· EPA (Environmental Protection Agency)		
9016-87-9	diphenylmethanediisocyanate, isomers and homologues	D;CBD
101-68-8	4,4'-methylenediphenyl diisocyanate	CBD;D
· IARC (International Agency for Research on Cancer)		
9016-87-9	diphenylmethanediisocyanate, isomers and homologues	3 20-50%
101-68-8	4,4'-methylenediphenyl diisocyanate	3 20-50%
· NTP (National Toxicology Program)		
None of the ingredients is listed.		
· TLV (Threshold Limit Value established by ACGIH)		
None of the ingredients is listed.		
· MAK (German Maximum Workplace Concentration)		
9016-87-9	diphenylmethanediisocyanate, isomers and homologues	3 20-50%
101-68-8	4,4'-methylenediphenyl diisocyanate	3 20-50%
· NIOSH-Ca (National Institute for Occupational Safety and Health)		
None of the ingredients is listed.		
· OSHA-Ca (Occupational Safety & Health Administration)		
None of the ingredients is listed.		

· Product related hazard informations:

The product has been classified and marked in accordance with directives on hazardous materials.

· Hazard symbols:

Xn Harmful

· Hazard-determining components of labelling:

diphenylmethanediisocyanate,
isomers and homologues
4,4'-methylenediphenyl diisocyanate
methylenediphenyl
diisocyanate (2,2'; 2,4)

· Risk phrases:

20/22 Harmful by inhalation and if swallowed.
36/37/38 Irritating to eyes, respiratory system and skin.
42/43 May cause sensitisation by inhalation and skin contact.

· Safety phrases:

9 Keep container in a well-ventilated place.
23 Do not breathe gas/fumes/vapour/spray.
24 Avoid contact with skin.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

(Contd. on page 8)

— USA —

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/26/2005

Version 1

Reviewed on 08/26/2005

Trade name: Metrethane 4701 Base

(Contd. from page 7)

37 Wear suitable gloves.

45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

60 This material and its container must be disposed of as hazardous waste.

· Special labeling of certain preparations:

Contains isocyanates. See information supplied by the manufacturer.

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 R-phrases

20/22 Harmful by inhalation and if swallowed.

36/37/38 Irritating to eyes, respiratory system and skin.

42/43 May cause sensitisation by inhalation and skin contact.

· Department issuing MSDS:

Technical department.

· Contact:

Dr. John F. Plummer