

Safety Data Sheet

according to 29 CFR 1910.1200(g)

Revision No: 2,25
Revision date: 05/05/2021
Print date: 07/01/2021

US-Formliner Platinum | Base A

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1. Identification

Product identifier

US-Formliner Platinum | Base A

Recommended use of the chemical and restrictions on use

Use of the substance/mixture

Manufacture of plastics products, including compounding and conversion

Details of the supplier of the safety data sheet

Company name:	US Formliner, Inc.	
Street:	380 Commerce Blvd.	
Place:	USA Athens, GA 30606	
Telephone:	(706) 549-6787	Telefax: (706) 355-9199
e-mail:	info@USFormliner.com	
Contact person:	Brian Drummond	Telephone: (706) 549-6787
e-mail:	brian.drummond@usformliner.com	

Emergency phone number: INFOTRAC - (800) 535-5053 (Continental US); (352) 323-3500 (Outside US)

2. Hazard(s) identification

Classification of the chemical

29 CFR Part 1910.1200

Respiratory or skin sensitization: Skin Sens. 1

OSHA information: This mixture is classified as hazardous according to 29CFR 1910.1200.

Label elements

29 CFR Part 1910.1200

Signal word: Warning

Pictograms:



Hazard statements

May cause an allergic skin reaction

Precautionary statements

Wear protective gloves and eye/face protection.
If on skin: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
Avoid release to the environment.

Hazards not otherwise classified

Further information:
SECTION 12: Ecological information

3. Composition/information on ingredients

Mixtures

Chemical characterization

Mixture of polyols.

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Hazardous components

CAS No	Components	Quantity
106264-79-3	6-methyl-2,4-bis(methylthio)phenylene-1,3-diamine	1 - 2.5 %

Further Information

The hazardous components' concentrations are given in ranges due to the variability of the product's constitution. 1 - 2 percent of the mixture consists of ingredient(s) of unknown acute toxicity (inhalative).

4. First-aid measures

Description of first aid measures

General information

Change contaminated, saturated clothing.

After inhalation

Provide fresh air.

When in doubt or if symptoms are observed, get medical advice.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap.

In case of skin reactions, consult a physician.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water.

In case of troubles or persistent symptoms, consult an ophthalmologist.

After ingestion

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting.

Seek medical advice.

Most important symptoms and effects, both acute and delayed

No known symptoms to date.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂), Water mist, Foam, Extinguishing powder.

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

Full water jet.

Specific hazards arising from the chemical

In case of fire may be liberated: Carbon monoxide (CO), Carbon dioxide (CO₂).

Special protective equipment and precautions for fire-fighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Suppress gases/vapors/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Additional information

Flammability classification (NFPA 704): IIIB

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

General measures

Provide adequate ventilation. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

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Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

Methods and material for containment and cleaning up

For cleaning up

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

Other information

Treat the recovered material as prescribed in the section on waste disposal.

Reference to other sections

Safe handling: see section 7

Personal protection equipment (PPE): see section 8

Disposal: see section 13

7. Handling and storage

Precautions for safe handling

Advice on safe handling

Provide adequate ventilation. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

Advice on general occupational hygiene

Change contaminated, saturated clothing. Wash hands before breaks and after work. When using do not eat or drink.

Further information on handling

Additional information: See section 8.

Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed in a cool, well-ventilated place. Protect from moisture. The floor should be leak tight, jointless and not absorbent.

Recommended storage temperature: 10 - 50 °C

Hints on joint storage

Keep away from food, drink and animal feedingstuffs.

8. Exposure controls/personal protection

Control parameters

Additional advice on limit values

To date, no national critical limit values exist.

Exposure controls



Appropriate engineering controls

Provide adequate ventilation. If handled uncovered, arrangements with local exhaust ventilation should be used if possible.

Individual protection measures, such as personal protective equipment

Eye/face protection

Tightly sealed safety glasses.

Hand protection

Suitable gloves type Gloves with long cuffs.

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By short-term hand contact: Disposable gloves.

Suitable material:

- NBR (Nitrile rubber)

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Skin protection

Only wear fitting, comfortable and clean protective clothing.

Respiratory protection

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn. Usually no personal respirative protection necessary.

Environmental exposure controls

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state:	Liquid
Color:	gray
Odor:	characteristic
Odour threshold:	No information available.

Test method

Changes in the physical state

Melting point/freezing point:	not determined
Boiling point or initial boiling point and boiling range:	> 150 °C
Flash point:	> 150 °C

Flammability

Solid/liquid:	not applicable
Gas:	not applicable

Explosive properties

not hazard of explosion according to EU A.14

Lower explosion limits:	not determined
Upper explosion limits:	not determined
Auto-ignition temperature:	> 350 °C

Self-ignition temperature

Solid:	not applicable
Gas:	not applicable

Decomposition temperature:	not determined
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Oxidizing properties

Not oxidising.

pH-Value:	not applicable
Viscosity / dynamic: (at 21 °C)	3000 mPa·s ISO 2555
Water solubility: (at 21 °C)	Immiscible

Solubility in other solvents

not determined

Partition coefficient n-octanol/water:	not determined
Vapor pressure:	not determined

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Density (at 21 °C):

1,43 g/cm³ ISO 2811

Relative vapour density:

not applicable

Other information

Other safety characteristics

Solvent content:

< 0,9 %

Further Information

No further relevant information available.

10. Stability and reactivity

Reactivity

No hazardous reaction when handled and stored according to provisions.

Chemical stability

Stability:

Stable

The product is stable under storage at normal ambient temperatures.

Possibility of hazardous reactions

Hazardous reactions:

Will not occur

No known hazardous reactions.

Conditions to avoid

none/none

Incompatible materials

Acid, Alkali (lye), Oxidising agent.

Hazardous decomposition products

No known hazardous decomposition products.

11. Toxicological information

Information on toxicological effects

Route(s) of Entry

Inhalation: Yes. Skin contact: Yes. Eye contact: Yes. Ingestion: Yes.

Acute toxicity

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

CAS No	Components				
	Exposure route	Dose	Species	Source	Method
106264-79-3	6-methyl-2,4-bis(methylthio)phenylene-1,3-diamine				
	oral	LD50 1515 mg/kg	Rat	MSDS	
	dermal	LD50 > 2000 mg/kg	Rabbit	MSDS	

Irritation and corrosivity

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

Sensitizing effects

May cause an allergic skin reaction (6-methyl-2,4-bis(methylthio)phenylene-1,3-diamine)

Carcinogenic/mutagenic/toxic effects for reproduction

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

Specific target organ toxicity (STOT) - single exposure

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

Specific target organ toxicity (STOT) - repeated exposure

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

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Carcinogenicity (OSHA): No ingredient of this mixture is listed.
Carcinogenicity (IARC): No ingredient of this mixture is listed.
Carcinogenicity (NTP): No ingredient of this mixture is listed.

Aspiration hazard

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

Information on other hazards

Other information

No further relevant information available.

Further information

Classification for mixtures and used evaluation method according to regulation 29 CFR 1910.1200. There are no data available on the preparation/mixture itself.

12. Ecological information

Ecotoxicity

Harmful to aquatic life with long lasting effects.

CAS No	Components					
Aquatic toxicity	Dose		[h] [d]	Species	Source	Method
106264-79-3	6-methyl-2,4-bis(methylthio)phenylene-1,3-diamine					
Acute fish toxicity	LC50	7,3 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	MSDS	
Acute algae toxicity	ErC50	7,6 mg/l	72 h	Selenastrum capricornutum	MSDS	
Acute crustacea toxicity	EC50	0,9 mg/l	48 h	Daphnia magna	MSDS	
Acute bacteria toxicity		(1000 mg/l)	3 h	Activated sludge	MSDS	

Persistence and degradability

Some of the components are poorly biodegradable. (OECD F)

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Endocrine disrupting properties

No information available.

Other adverse effects

No further relevant information available.

Further information

Classification for mixtures and used evaluation method according to regulation 29 CFR 1910.1200.

There are no data available on the mixture itself. The ecotoxicological properties of this mixture are determined by the ecotoxicological properties of the single components (see section 3).

13. Disposal considerations

Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

Dispose of waste according to applicable legislation.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself. Non-contaminated packages may be recycled.

14. Transport information

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US DOT 49 CFR 172.101

Proper shipping name: Not a hazardous material with respect to these transport regulations.

Marine transport (IMDG)

UN number: --

UN proper shipping name: No dangerous good in sense of these transport regulations.

Transport hazard class(es): --

Packing group: --

Air transport (ICAO-TI/IATA-DGR)

UN number: --

UN proper shipping name: No dangerous good in sense of these transport regulations.

Transport hazard class(es): --

Packing group: --

Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

Special precautions for user

Protect from moisture. Do not store at temperatures over: 50°C

Keep away from food, drink and animal feedingstuffs.

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

not applicable

15. Regulatory information

U.S. Regulations

National Inventory TSCA

All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

National regulatory information

SARA Section 311/312 Hazards:

6-methyl-2,4-bis(methylthio)phenylene-1,3-diamine (106264-79-3): Immediate (acute) health hazard

State Regulations

Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65, State of California)

This product can not expose you to chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Additional information

Entries in the "State Right to Know" Lists: none/none

EU regulatory information

2004/42/EC (VOC): VOC-value: 13 g/L (0,9 %)

16. Other information

Hazardous Materials Information Label (HMIS)

Health: *1

Flammability: 1

Physical Hazard: 0

Personal Protection: B

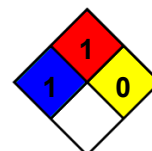
NFPA Hazard Ratings

Health: 1

Flammability: 1

Reactivity: 0

Unique Hazard:



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Changes

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Revision No: 2,25

This data sheet contains changes from the previous version in section(s): 1,3,5,8,9,12,14,15,16.

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

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

ATE: acute toxicity estimates

ECHA: european chemicals agency
(<http://echa.europa.eu/information-on-chemicals>)

GESTIS: Gefahrstoffinformationssystem der Deutschen Gesetzlichen Unfallversicherung
(<http://dguv.de/ifa/GESTIS/GESTIS-Stoffdatenbank/index.jsp>)

MSDS:

The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.

Other data

The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

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1. Identification

Product identifier

Hardener for US Formliner Platinum

Recommended use of the chemical and restrictions on use

Use of the substance/mixture

Manufacture of plastics products, including compounding and conversion

Details of the supplier of the safety data sheet

Company name:	US Formliner, Inc.	
Street:	380 Commerce Blvd.	
Place:	USA Athens, GA 30606	
Telephone:	(706) 549-6787	Telefax: (706) 355-9199
e-mail:	info@USFormliner.com	
Contact person:	Brian Drummond	Telephone: (706) 549-6787
e-mail:	brian.drummond@usformliner.com	

Emergency phone number: INFOTRAC - (800) 535-5053 (Continental US); (352) 323-3500 (Outside US)

2. Hazard(s) identification

Classification of the chemical

29 CFR Part 1910.1200

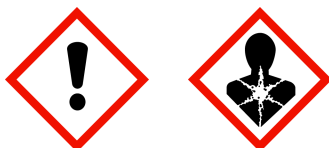
Acute toxicity: Acute Tox. 4 (inhalation)
Skin corrosion/irritation: Skin Irrit. 2
Serious eye damage/eye irritation: Eye Irrit. 2B
Respiratory or skin sensitization: Resp. Sens. 1
Respiratory or skin sensitization: Skin Sens. 1
Specific target organ toxicity single exposure: STOT SE 3 (respiratory tract irritation)
Specific target organ toxicity repeated or prolonged exposure: STOT RE 1
OSHA information: This mixture is classified as hazardous according to 29CFR 1910.1200.

Label elements

29 CFR Part 1910.1200

Signal word: Danger

Pictograms:



Hazard statements

Causes skin and eye irritation
May cause an allergic skin reaction
Harmful if inhaled
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause respiratory irritation
Causes damage to organs through prolonged or repeated exposure

Precautionary statements

Avoid breathing gas/mist/vapors.
Wear protective gloves and eye/face protection.
In case of inadequate ventilation wear respiratory protection.
If on skin: Wash with plenty of soap and water.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.

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If exposed or concerned: Get medical advice/attention.

Hazards not otherwise classified

Further information:

SECTION 12: Ecological information

3. Composition/information on ingredients

Mixtures

Chemical characterization

Mixture of isocyanates. (MDI)

Hazardous components

CAS No	Components	Quantity
101-68-8	4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate	35 - 40 %
5873-54-1	o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate	20 - 25 %
9016-87-9	diphenylmethanediisocyanate, isomers and homologues	1 - 5 %
2536-05-2	2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate	1 - 5 %

Further Information

The hazardous components' concentrations are given in ranges due to the variability of the product's constitution.

4. First-aid measures

Description of first aid measures

General information

Change contaminated, saturated clothing.

After inhalation

Remove casualty to fresh air and keep warm and at rest. Where appropriate artificial ventilation.

Medical treatment necessary.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap.

In case of skin reactions, consult a physician.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

If swallowed, rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

Call a physician immediately.

Most important symptoms and effects, both acute and delayed

Irritation to respiratory tract. Allergic reactions.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂), Water mist, Foam, Extinguishing powder.

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

Full water jet.

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Specific hazards arising from the chemical

In case of fire may be liberated: Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x), Isocyanates, Hydrogen cyanide (hydrocyanic acid).

Special protective equipment and precautions for fire-fighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit. Do not inhale explosion and combustion gases. Suppress gases/vapors/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Additional information

Flammability classification (NFPA 704): IIIB

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

General measures

Provide adequate ventilation. Do not breathe mist/vapors/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

Methods and material for containment and cleaning up

For cleaning up

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

Other information

Treat the recovered material as prescribed in the section on waste disposal.

Reference to other sections

Safe handling: see section 7
Personal protection equipment (PPE): see section 8
Disposal: see section 13

7. Handling and storage

Precautions for safe handling

Advice on safe handling

Provide adequate ventilation. Do not breathe mist/vapors/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

Advice on general occupational hygiene

Change contaminated, saturated clothing. Wash hands before breaks and after work. When using do not eat or drink.

Further information on handling

Additional information: See section 8.

Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed in a cool, well-ventilated place. Protect from moisture. The floor should be leak tight, jointless and not absorbent.

Recommended storage temperature: 10 - 50°C

Hints on joint storage

Do not store together with: Amines, Acid, Alkali (lye).
Keep away from food, drink and animal feedingstuffs.

8. Exposure controls/personal protection

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Control parameters

Exposure limits

CAS No.	Substance	ppm	mg/m ³	f/cc	Category	Origin
101-68-8	Methylene bisphenyl isocyanate (MDI)	C 0.02	C 0.2		Ceiling	PEL
101-68-8	Methylene bisphenyl isocyanate	0.005	0.05		TWA (8 h)	REL
		C 0.02	C 0.2		Ceiling	REL

Exposure controls



Appropriate engineering controls

Provide adequate ventilation. If handled uncovered, arrangements with local exhaust ventilation should be used if possible.

Individual protection measures, such as personal protective equipment

Eye/face protection

Tightly sealed safety glasses.

Hand protection

Suitable gloves type Gloves with long cuffs.

By short-term hand contact: Disposable gloves.

Suitable material:

- NBR (Nitrile rubber)

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Skin protection

Only wear fitting, comfortable and clean protective clothing.

Respiratory protection

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

Environmental exposure controls

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state:	Liquid
Color:	dark violet / brown
Odor:	earthy
Odour threshold:	No information available.

Test method

Changes in the physical state

Melting point/freezing point: < 0 °C

Boiling point or initial boiling point and boiling range: > 200 °C

Flash point: > 120 °C

Flash point: > 120 °C

Flammability

Solid/liquid: not applicable

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Gas: not applicable

Explosive properties

not hazard of explosion according to EU A.14

Lower explosion limits: not determined

Upper explosion limits: not determined

Auto-ignition temperature: > 350 °C

Self-ignition temperature

Solid: not applicable

Gas: not applicable

Decomposition temperature: not determined

Oxidizing properties

Not oxidising.

pH-Value: not applicable

Viscosity / dynamic: 75 mPa·s ISO 2555
(at 21 °C)

Water solubility: Immiscible
(at 21 °C)

Solubility in other solvents

not determined

Partition coefficient n-octanol/water: not determined

Vapor pressure: 12 hPa calculated
(at 21 °C)

Density (at 21 °C): 1,13 g/cm³ ISO 2811

Relative vapour density: not applicable

Other information

Other safety characteristics

Solvent content: 0 %

Solid content: 0 %

Further Information

No further relevant information available.

10. Stability and reactivity

Reactivity

Contains: Isocyanates.

Chemical stability

Stability: Stable

The product is stable under storage at normal ambient temperatures.

Reaction takes place at temperatures above: 200 °C: Polymerization. Formation of: CO₂

Possibility of hazardous reactions

Hazardous reactions: Will not occur

Exothermic reactions with: Amines, Alcohols, Water, Acid, Alkali (lye).

Conditions to avoid

Keep away from heat.

Protect from moisture.: Due to gaseous decomposition products, overpressure can occur in tightly sealed containers. Danger of bursting container.

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Incompatible materials

Amines, Alcohols, Water, Acid, Alkali (lye), Oxidising agent.

Hazardous decomposition products

Does not decompose when used for intended uses.

11. Toxicological information

Information on toxicological effects

Route(s) of Entry

Inhalation: Yes. Skin contact: Yes. Eye contact: Yes. Ingestion: Yes.

Acute toxicity

Harmful if inhaled

ATEmix calculated

ATE (inhalation vapour) 16,94 mg/l; ATE (inhalation aerosol) 2,307 mg/l

CAS No	Components				
	Exposure route	Dose	Species	Source	Method
101-68-8	4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate				
	oral	LD50 > 2000 mg/kg	Rat	MSDS	
	dermal	LD50 > 9400 mg/kg	Rabbit	MSDS	OECD 402
	inhalation vapour	ATE 11 mg/l			
	inhalation (4 h) aerosol	LC50 1,5 mg/l		MSDS	
5873-54-1	o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate				
	oral	LD50 > 2000 mg/kg	Rat	MSDS	
	dermal	LD50 > 9400 mg/kg	Rabbit	MSDS	OECD 402
	inhalation vapour	ATE 11 mg/l			
	inhalation (4 h) aerosol	LC50 1,5 mg/l		MSDS	
9016-87-9	diphenylmethanediisocyanate, isomers and homologues				
	oral	LD50 > 10000 mg/kg	Rat	MSDS	OECD 401
	dermal	LD50 > 9400 mg/kg	Rabbit	MSDS	OECD 402
	inhalation vapour	ATE 11 mg/l			
	inhalation (4 h) aerosol	LC50 1,5 mg/l		MSDS	
2536-05-2	2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate				
	oral	LD50 > 2000 mg/kg	Rat	MSDS	
	dermal	LD50 > 9400 mg/kg	Rabbit	MSDS	OECD 402
	inhalation vapour	ATE 11 mg/l			
	inhalation (4 h) aerosol	LC50 1,5 mg/l		MSDS	

Irritation and corrosivity

Causes skin irritation

Causes eye irritation

Sensitizing effects

May cause allergy or asthma symptoms or breathing difficulties if inhaled (4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate; o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate; diphenylmethanediisocyanate, isomers and homologues; 2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate)

May cause an allergic skin reaction (4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate; o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate; diphenylmethanediisocyanate, isomers and homologues; 2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate)

Carcinogenic/mutagenic/toxic effects for reproduction

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

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Specific target organ toxicity (STOT) - single exposure

May cause respiratory irritation (4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate; o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate)

Specific target organ toxicity (STOT) - repeated exposure

Causes damage to organs through prolonged or repeated exposure (4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate; o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate; diphenylmethanediisocyanate, isomers and homologues; 2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate)

Carcinogenicity (OSHA): No ingredient of this mixture is listed.

Carcinogenicity (IARC): 4,4'-Methylenediphenyl diisocyanate (CAS 101-68-8) is listed in group 3.
Polymethylene polyphenyl isocyanate (CAS 9016-87-9) is listed in group 3.

Carcinogenicity (NTP): No ingredient of this mixture is listed.

Aspiration hazard

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

Information on other hazards

Other information

No further relevant information available.

Further information

Classification for mixtures and used evaluation method according to regulation 29 CFR 1910.1200. There are no data available on the preparation/mixture itself.

12. Ecological information

Ecotoxicity

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

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CAS No	Components						
Aquatic toxicity		Dose		[h] [d]	Species	Source	Method
101-68-8	4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate						
Acute fish toxicity		LC50	> 1000 mg/l	96 h	Danio rerio (zebrafish)	MSDS	OECD 203
Acute algae toxicity		ErC50	> 1640 mg/l	72 h	Scenedesmus subspicatus	MSDS	OECD 201
Acute crustacea toxicity		EC50	> 1000 mg/l	48 h	Daphnia magna	MSDS	OECD 202
Crustacea toxicity		NOEC	> 10 mg/l	21 d	Daphnia magna	MSDS	OECD 202
Acute bacteria toxicity		(> 100 mg/l)		3 h	Activated sludge	MSDS	OECD 209
5873-54-1	o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate						
Acute fish toxicity		LC50	> 1000 mg/l	96 h	Danio rerio (zebrafish)	MSDS	OECD 203
Acute algae toxicity		ErC50	> 1640 mg/l	72 h	Scenedesmus subspicatus	MSDS	OECD 201
Acute crustacea toxicity		EC50	> 1000 mg/l	48 h	Daphnia magna	MSDS	OECD 202
Crustacea toxicity		NOEC	> 10 mg/l	21 d	Daphnia magna	MSDS	OECD 202
Acute bacteria toxicity		(> 100 mg/l)		3 h	Activated sludge	MSDS	OECD 209
9016-87-9	diphenylmethanediisocyanate, isomers and homologues						
Acute fish toxicity		LC50	> 1000 mg/l	96 h	Danio rerio (zebrafish)	MSDS	OECD 203
Acute algae toxicity		ErC50	> 1640 mg/l	72 h	Scenedesmus subspicatus	MSDS	OECD 201
Acute crustacea toxicity		EC50	> 1000 mg/l	48 h	Daphnia magna	MSDS	OECD 202
Crustacea toxicity		NOEC	> 10 mg/l	21 d	Daphnia magna	MSDS	OECD 202
Acute bacteria toxicity		(> 100 mg/l)		3 h	Activated sludge	MSDS	OECD 209
2536-05-2	2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate						
Acute fish toxicity		LC50	> 1000 mg/l	96 h	Danio rerio (zebrafish)	MSDS	OECD 203
Acute algae toxicity		ErC50	> 1640 mg/l	72 h	Scenedesmus subspicatus	MSDS	OECD 201
Acute crustacea toxicity		EC50	> 1000 mg/l	48 h	Daphnia magna	MSDS	OECD 202
Crustacea toxicity		NOEC	> 10 mg/l	21 d	Daphnia magna	MSDS	OECD 202
Acute bacteria toxicity		(> 100 mg/l)		3 h	Activated sludge	MSDS	OECD 209

Persistence and degradability

Product is not easily biodegradable. (OECD 302C)

Bioaccumulative potential

No indication of bioaccumulation potential. (OECD 305)

Mobility in soil

No information available.

Endocrine disrupting properties

No information available.

Other adverse effects

No further relevant information available.

Further information

Classification for mixtures and used evaluation method according to regulation 29 CFR 1910.1200.

There are no data available on the mixture itself. The ecotoxicological properties of this mixture are determined by the ecotoxicological properties of the single components (see section 3).

13. Disposal considerations

Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

Dispose of waste according to applicable legislation.

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Contaminated packaging

Handle contaminated packages in the same way as the substance itself. Non-contaminated packages may be recycled.

14. Transport information

US DOT 49 CFR 172.101

UN/ID number: NA3082
Proper shipping name: Other regulated substances, liquid, n.o.s.
Transport hazard class(es): 9
Packing group: III
Hazard label: 9



Marine transport (IMDG)

UN number: --
UN proper shipping name: No dangerous good in sense of these transport regulations.
Transport hazard class(es): --
Packing group: --

Air transport (ICAO-TI/IATA-DGR)

UN number: --
UN proper shipping name: No dangerous good in sense of these transport regulations.
Transport hazard class(es): --
Packing group: --

Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

Special precautions for user

Protect from moisture. Do not store at temperatures over: 50°C
Keep away from food, drink and animal feedingstuffs.

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

not applicable

15. Regulatory information

U.S. Regulations

National Inventory TSCA

All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

National regulatory information

SARA Section 304 CERCLA:

Methylenebis(phenylisocyanate)(MDI) (101-68-8): Reportable quantity = 5,000 (2270) lbs. (kg)

SARA Section 311/312 Hazards:

Methylenebis(phenylisocyanate)(MDI) (101-68-8): Immediate (acute) health hazard, Delayed (chronic) health hazard

o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1): Immediate (acute) health hazard, Delayed (chronic) health hazard

Polymeric diphenylmethane diisocyanate (9016-87-9): Immediate (acute) health hazard, Delayed (chronic) health hazard

2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2): Immediate (acute) health hazard, Delayed (chronic) health hazard

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SARA Section 313 Toxic release inventory:

Methylenebis(phenylisocyanate)(MDI) (101-68-8): De minimis limit = 1.0 %, Reportable threshold = Standard

Polymeric diphenylmethane diisocyanate (9016-87-9): De minimis limit = 1.0 %, Reportable threshold = Standard

Clean Air Act Section 112(b):

Methylenebis(phenylisocyanate)(MDI) (101-68-8)

State Regulations

Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65, State of California)

This product can not expose you to chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Additional information

Entries in the "State Right to Know" Lists:

- Methylenebis(phenylisocyanate) (CAS 101-68-8): CA, FL, MA, MN, NJ, PA, RI.
- Diphenylmethane-2,4'-diisocyanate (CAS 5873-54-1): MN, NJ.
- Diphenylmethane-2,2'-diisocyanate (CAS 2536-05-2): MN, NJ.

EU regulatory information

2004/42/EC (VOC):

VOC-value: 0,0 g/L (0 %)

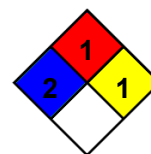
16. Other information

Hazardous Materials Information Label (HMIS)

Health: *2
Flammability: 1
Physical Hazard: 1
Personal Protection: B

NFPA Hazard Ratings

Health: 2
Flammability: 1
Reactivity: 1
Unique Hazard:



Changes

Revision date: 05/03/2021

Revision No: 2,13

This data sheet contains changes from the previous version in section(s): 3,5,9,11,16.

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
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
ATE: acute toxicity estimates
ECHA: european chemicals agency
(<http://echa.europa.eu/information-on-chemicals>)
GESTIS: Gefahrstoffinformationssystem der Deutschen Gesetzlichen Unfallversicherung
(<http://dguv.de/ifa/GESTIS/GESTIS-Stoffdatenbank/index.jsp>)
MSDS:

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The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.

Other data

The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.