

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

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

1.1 Product identifier

Trade name : REN HY 5212

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Hardener

1.3 Details of the supplier of the safety data sheet

Company : Huntsman Advanced Materials (Europe)BVBA
Address : Everslaan 45
3078 Everberg
Belgium
Telephone : +41 61 299 20 41
Telefax : +41 61 299 20 40

E-mail address of person responsible for the SDS : Global_Product_EHS_AdMat@huntsman.com

1.4 Emergency telephone number

Emergency telephone number : EUROPE: +32 35 75 1234
France ORFILA: +33(0)145425959
ASIA: +65 6336-6011
China: +86 20 39377888
+86 532 83889090
India: + 91 22 42 87 5333
Australia: 1800 786 152
New Zealand: 0800 767 437
USA: +1/800/424.9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4	H302: Harmful if swallowed.
Acute toxicity, Category 4	H312: Harmful in contact with skin.
Skin corrosion, Category 1A	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Reproductive toxicity, Category 1B	H360F: May damage fertility.

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

Specific target organ toxicity - single exposure, Category 3, Respiratory system

H335: May cause respiratory irritation.

Specific target organ toxicity - repeated exposure, Category 2, Pancreas, Liver, Kidney

H373: May cause damage to organs through prolonged or repeated exposure if swallowed.

Acute aquatic toxicity, Category 1

H400: Very toxic to aquatic life.

Chronic aquatic toxicity, Category 1

H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

:



Signal word

: Danger

Hazard statements

: H302 + H312
H314
H317
H335
H360F
H373

H410

Harmful if swallowed or in contact with skin
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause respiratory irritation.
May damage fertility.
May cause damage to organs (Pancreas, Liver, Kidney) through prolonged or repeated exposure if swallowed.
Very toxic to aquatic life with long lasting effects.

Precautionary statements

: **Prevention:**

P201
P260
P280

Obtain special instructions before use.
Do not breathe mist or vapours.
Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P303 + P361 + P353

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340 + P310

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

P305 + P351 + P338 + P310

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Hazardous components which must be listed on the label:

3,5-Diethyl-2,4-diaminotoluene

1,2-diaminocyclohexane

4,4'-isopropylidenediphenol

Additional Labelling:

Restricted to professional users.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Diethylmethylbenzenediamine	68479-98-1 270-877-4 612-130-00-0 01-2119486805-25	Acute Tox. 4; H302 Acute Tox. 4; H312 Eye Irrit. 2; H319 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	60 - 100
Cyclohex-1,2-ylenediamine	694-83-7 211-776-7 -	Acute Tox. 4; H302 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Corr. 1A; H314 STOT SE 3; H335	13 - 30
4,4'-Isopropylidenediphenol	80-05-7 201-245-8 604-030-00-0 01-2119457856-23	Eye Dam. 1; H318 Skin Sens. 1; H317 Repr. 1B; H360F STOT SE 3; H335 Aquatic Chronic 2; H411	7 - 13
Toluene-4-sulphonic acid	104-15-4 203-180-0 -	STOT SE 3; H335 Skin Irrit. 2; H315 Eye Irrit. 2; H319	1 - 3

For explanation of abbreviations see section 16.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

SECTION 4: First aid measures

4.1 Description of first aid measures

- | | |
|-------------------------|---|
| General advice | : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended. |
| If inhaled | : Consult a physician after significant exposure.
If unconscious, place in recovery position and seek medical advice. |
| In case of skin contact | : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
If on skin, rinse well with water.
If on clothes, remove clothes. |
| In case of eye contact | : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist. |
| If swallowed | : Keep respiratory tract clear.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital. |

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

SECTION 5: Firefighting measures

5.1 Extinguishing media

- | | |
|--------------------------------|---|
| Suitable extinguishing media | : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Unsuitable extinguishing media | : High volume water jet |

5.2 Special hazards arising from the substance or mixture

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

Specific hazards during firefighting : No data is available on the product itself.

Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : No hazardous combustion products are known

No data is available on the product itself.

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

Specific extinguishing methods : No data is available on the product itself.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

None

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapours/dust.

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
To avoid spills during handling keep bottle on a metal tray.
Dispose of rinse water in accordance with local and national regulations.
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : When using do not eat or drink. When using do not smoke.
Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Recommended storage temperature : 2 - 40 °C

Other data : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
4,4'-isopropylidenediph enol	80-05-7	TWA (inhalable dust)	10 mg/m3	GB EH40
Further information	Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used			
		TWA (inhalable dust)	10 mg/m3	2009/161/EU
Further information	Indicative			

8.2 Exposure controls

Personal protective equipment

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

Eye protection	: Eye wash bottle with pure water Tightly fitting safety goggles Wear face-shield and protective suit for abnormal processing problems.
Hand protection	
Material	: butyl-rubber
Break through time	: > 8 h
Material	: Solvent-resistant gloves (butyl-rubber)
Material	: Nitrile rubber
Break through time	: 10 - 480 min
Remarks	: The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Skin and body protection	: Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection	: In the case of vapour formation use a respirator with an approved filter.
Filter type	: Combined particulates and organic vapour type (A-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	: liquid
Colour	: yellow
Odour	: slight
Odour Threshold	: No data is available on the product itself.
pH	: No data is available on the product itself.
Freezing point	: No data is available on the product itself.
Melting point	No data is available on the product itself.
Boiling point	No data is available on the product itself.
Flash point	: > 150 °C Method: Pensky-Martens closed cup, closed cup
Evaporation rate	: No data is available on the product itself.
Flammability (solid, gas)	: No data is available on the product itself.

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

Burning rate	: No data is available on the product itself.
Upper explosion limit	: No data is available on the product itself.
Lower explosion limit	: No data is available on the product itself.
Vapour pressure	: < 0,1 hPa (25 °C)
Relative vapour density	: No data is available on the product itself.
Relative density	: No data is available on the product itself.
Density	: 1 g/cm ³ (20 °C)
Solubility(ies)	
Water solubility	: partly soluble (20 °C)
Solubility in other solvents	: No data is available on the product itself.
Partition coefficient: n-octanol/water	: No data is available on the product itself.
Auto-ignition temperature	: No data is available on the product itself.
Decomposition temperature	: > 200 °C
Viscosity	
Viscosity, dynamic	: 250 - 350 mPa,s (25 °C)
Explosive properties	: No data is available on the product itself.
Oxidizing properties	: No data is available on the product itself.

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : No decomposition if stored and applied as directed.

10.4 Conditions to avoid

Conditions to avoid : No data available

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

10.5 Incompatible materials

10.6 Hazardous decomposition products

Carbon oxides
Nitrogen oxides (NO_x)
Burning produces noxious and toxic fumes.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity - Product : Acute toxicity estimate : 632,04 mg/kg
Method: Calculation method

Acute inhalation toxicity - Product : Acute toxicity estimate : > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity - Product : Acute toxicity estimate : 1 340 mg/kg
Method: Calculation method

Acute toxicity (other routes of administration) : No data available

Skin corrosion/irritation

Components:

diethyltoluenediamine:

Species: Rabbit

Assessment: No skin irritation

Method: OECD Test Guideline 404

Result: No skin irritation

1,2-diaminocyclohexane:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Causes severe burns.

GLP: no

4,4'-isopropylidenediphenol:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

P-toluenesulphonic acid:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Irritating to skin.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

Serious eye damage/eye irritation

Components:

diethyltoluenediamine:

Species: Rabbit

Assessment: Irritant

Result: Irritating to eyes.

Species: Rabbit

Assessment: Irritant

Method: OECD Test Guideline 405

Result: Normally reversible injuries

1,2-diaminocyclohexane:

Species: Rabbit

Result: Risk of serious damage to eyes.

GLP: no

4,4'-isopropylidenediphenol:

Species: Rabbit

Method: OECD Test Guideline 405

Result: Irreversible effects on the eye

P-toluenesulphonic acid:

Species: Rabbit

Result: Irritation to eyes, reversing within 7 days

Assessment: Irritating to eyes.

Result: Irritating to eyes.

Respiratory or skin sensitisation

Components:

diethyltoluenediamine:

Exposure routes: Skin

Species: Guinea pig

Result: Does not cause skin sensitisation.

1,2-diaminocyclohexane:

Exposure routes: Skin

Species: Guinea pig

Result: negative

4,4'-isopropylidenediphenol:

Exposure routes: Skin

Species: Mouse

Method: OECD Test Guideline 429

Result: Does not cause skin sensitisation.

Exposure routes: Skin

Species: Humans

Assessment: May cause sensitisation by skin contact.

Result: Causes sensitisation.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

P-toluenesulphonic acid:
Exposure routes: Skin
Species: Guinea pig
Method: Directive 67/548/EEC, Annex V, B.6.
Result: Does not cause skin sensitisation.

Assessment: No data available

Germ cell mutagenicity

Components:

diethyltoluenediamine:
Genotoxicity in vitro

: Metabolic activation: negative
Method: OECD Test Guideline 476
Result: negative

1,2-diaminocyclohexane:
Genotoxicity in vitro

: Concentration: 15 - 1500 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

: Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes

: Concentration: 33 - 1142 µg/L
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
GLP: yes

4,4'-isopropylidenediphenol:
Genotoxicity in vitro

: Metabolic activation: with and without metabolic activation
Result: negative

P-toluenesulphonic acid:
Genotoxicity in vitro

: Concentration: 5000 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

: Concentration: 1902 µg/L
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

Result: negative

Components:

diethyltoluenediamine:

Genotoxicity in vivo

: Application Route: Oral
Method: OECD Test Guideline 474
Result: negative

1,2-diaminocyclohexane:

Genotoxicity in vivo

: Application Route: Inhalation
Exposure time: 13 Weeks
Dose: 1.6 - 160 mg/m³
Method: OECD Test Guideline 474
Result: negative
GLP: yes

Application Route: Oral

Dose: 75 - 750 mg/kg

Method: OECD Test Guideline 475

Result: negative

GLP: yes

4,4'-isopropylidenediphenol:

Genotoxicity in vivo

: Method: OECD Test Guideline 474
Result: negative

P-toluenesulphonic acid:

Genotoxicity in vivo

: Application Route: Oral
Exposure time: 72 h
Dose: 4467 mg/kg
Method: OECD Test Guideline 474
Result: negative

Application Route: Intraperitoneal injection

Exposure time: 72 h

Dose: 580 mg/kg

Method: EPA OTS 798.5395

Result: negative

Carcinogenicity

Components:

diethyltoluenediamine:

Species: Rat, (male and female)

Application Route: Oral

Exposure time: 24 month(s)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

Dose: 1.8 - 3.2 mg/kg
Frequency of Treatment: 7 daily
Method: OECD Test Guideline 451
Result: negative

4,4'-isopropylidenediphenol:
Species: Rat, (male and female)
Application Route: Oral
Exposure time: 103 weeks
Frequency of Treatment: 7 daily
Result: negative

P-toluenesulphonic acid:
Species: Rat, (male and female)
Application Route: Oral
Exposure time: 24 month(s)
Dose: $\geq$ 240 mg/kg
Frequency of Treatment: 5 daily
Method: OECD Test Guideline 453
Result: negative

Carcinogenicity - Assessment : No data available

Reproductive toxicity

Components:

1,2-diaminocyclohexane:
Effects on fertility : Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 416
GLP: yes

4,4'-isopropylidenediphenol:
Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 416
Result: Embryotoxic effects and adverse effects on the offspring were detected.

Components:

1,2-diaminocyclohexane:
Effects on foetal development : Species: Rat, male and female
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level:
ca. 184 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects
GLP: no

4,4'-isopropylidenediphenol:
Species: Rat, female
Application Route: Oral

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

General Toxicity Maternal: No observed adverse effect level:
< 160 mg/kg body weight
Method: OECD Test Guideline 416
Result: No teratogenic effects

P-toluenesulphonic acid:

Species: Rat, female
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level:
> 936 mg/kg body weight
Result: No teratogenic effects

Components:

4,4'-isopropylidenediphenol:
Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, based on animal experiments.

STOT - single exposure

Components:

1,2-diaminocyclohexane:
Exposure routes: Inhalation
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.

4,4'-isopropylidenediphenol:
Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

P-toluenesulphonic acid:
Target Organs: Respiratory Tract
Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT - repeated exposure

Components:

diethyltoluenediamine:
Exposure routes: Ingestion
Target Organs: Pancreas, Liver, Kidney
Assessment: May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

diethyltoluenediamine:
Species: Rat, male and female
NOAEL: 8 - 10 mg/kg
Application Route: Ingestion

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

Exposure time: 2 160 hMethod: Subchronic toxicity

1,2-diaminocyclohexane:

Species: Rat, male and female

: 16

Test atmosphere: dust/mist

Exposure time: 13 WeeksMethod: OECD Test Guideline 413

4,4'-isopropylidenediphenol:

Species: Dog, male and female

: 75 mg/kg, 10

Application Route: Ingestion

Test atmosphere: dust/mist

Exposure time: 2 160 hNumber of exposures: 7 d

Method: Subchronic toxicity

Species: Rat, male and female

LOAEL: 600 mg/kg

Application Route: Ingestion

Exposure time: 672 hNumber of exposures: 7 d

Method: Subchronic toxicity

P-toluenesulphonic acid:

Species: Rat, male and female

NOAEL: $\geq$ 500 mg/kg

Application Route: Ingestion

Exposure time: 672 hNumber of exposures: 7 d

Method: Subchronic toxicity

Repeated dose toxicity - : No data available
Assessment

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Ingestion: No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

diethyltoluenediamine:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 200 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: DIN 38412

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,5 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.2.

Toxicity to algae : ErC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): ca. 104 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (Pseudomonas putida): >= 170 mg/l
Exposure time: 24 h
Test Type: static test
Test substance: Fresh water

1,2-diaminocyclohexane:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 200 mg/l
Exposure time: 48 h
Test substance: Fresh water
Method: DIN 38412

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

GLP: yes

Remarks: Toxic to aquatic organisms.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 19,8 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202
GLP: no

Toxicity to algae : EC50 : 29,6 mg/l
Exposure time: 72 h

Toxicity to fish (Chronic toxicity) : GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 4,16 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 211

4,4'-isopropylidenediphenol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 7,5 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 : 3,9 - 10,2 mg/l
Exposure time: 48 h

(Ceriodaphnia dubia (Water flea)):

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 2,5 - 3,1 mg/l
Exposure time: 96 h

Toxicity to fish (Chronic toxicity) : NOEC: 0,016 mg/l
Exposure time: 444 d
Species: Pimephales promelas (fathead minnow)
Test Type: flow-through test
Test substance: Fresh water
Method: EPA OPPTS 850.1500
Remarks: Toxic to aquatic organisms.

M-Factor (Chronic aquatic toxicity) : 1

Ecotoxicology Assessment
Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

P-toluenesulphonic acid:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 325 mg/l
Exposure time: 96 h

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 103 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 73 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

ErC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): > 40 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.3.

EC50 (Selenastrum capricornutum (green algae)): >= 758 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water

EC50 (Selenastrum capricornutum (green algae)): >= 230 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water

Toxicity to microorganisms : EC50 (activated sludge): > 650 mg/l
Exposure time: 3 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 209

12.2 Persistence and degradability

Components:

diethyltoluenediamine:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: < 60 %
Exposure time: 28 d

Result: Not readily biodegradable.
Biodegradation: < 1 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

Photodegradation	: Test Type: Air Rate constant: < .00001
1,2-diaminocyclohexane: Biodegradability	: Result: Readily biodegradable. Exposure time: 17 d Method: OECD Test Guideline 301D
Stability in water	: Method: No information available. GLP: No information available. Remarks: see user defined free text
Photodegradation	: Rate constant: < .001 GLP: no
4,4'-isopropylidenediphenol: Biodegradability	: Result: Not readily biodegradable. Biodegradation: 1 - 2 % Exposure time: 28 d
P-toluenesulphonic acid: Biodegradability	: Result: Readily biodegradable. Biodegradation: > 60 % Exposure time: 28 d

12.3 Bioaccumulative potential

Components:

diethyltoluenediamine: Bioaccumulation	: Bioconcentration factor (BCF): 13,82 Remarks: Bioaccumulation is unlikely. Bioconcentration factor (BCF): 2,75 Remarks: Does not bioaccumulate.
Partition coefficient: n-octanol/water	: log Pow: 1,17 (25 °C) Method: OECD Test Guideline 107
1,2-diaminocyclohexane: Partition coefficient: n-octanol/water	: log Pow: < -0,9 (20 °C) pH: 7 Method: OECD Test Guideline 107 GLP: yes
P-toluenesulphonic acid: Partition coefficient: n-octanol/water	: log Pow: 0,41 (25 °C) Method: Partition coefficient

12.4 Mobility in soil

Components:

diethyltoluenediamine:

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

Distribution among environmental compartments : Koc: 132 - 170

: Koc: 31,72 - 551

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14: Transport information

IATA

14.1 UN number : UN 2735

14.2 UN proper shipping name : Polyamines, liquid, corrosive, n.o.s.
(1,2-DIAMINO CYCLOHEXANE,
DIETHYLTOLUENEDIAMINE)

14.3 Transport hazard class(es) : 8

14.4 Packing group : II

Labels : Corrosive

Packing instruction (cargo aircraft) : 855

Packing instruction (passenger aircraft) : 851

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

IMDG

14.1 UN number : UN 2735
14.2 UN proper shipping name : POLYAMINES, LIQUID, CORROSIVE, N.O.S.
(1,2-DIAMINO CYCLOHEXANE, DIETHYLTOLUENEDIAMINE)
14.3 Transport hazard class(es) : 8
14.4 Packing group : II
Labels : 8
EmS Code : F-A, S-B
14.5 Environmental hazards
Marine pollutant : yes

ADR

14.1 UN number : UN 2735
14.2 UN proper shipping name : POLYAMINES, LIQUID, CORROSIVE, N.O.S.
(1,2-DIAMINO CYCLOHEXANE, DIETHYLTOLUENEDIAMINE)
14.3 Transport hazard class(es) : 8
14.4 Packing group : II
Labels : 8
14.5 Environmental hazards
Environmentally hazardous : yes

RID

14.1 UN number : UN 2735
14.2 UN proper shipping name : POLYAMINES, LIQUID, CORROSIVE, N.O.S.
(1,2-DIAMINO CYCLOHEXANE, DIETHYLTOLUENEDIAMINE)
14.3 Transport hazard class(es) : 8
14.4 Packing group : II
Labels : 8
14.5 Environmental hazards
Environmentally hazardous : yes

Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59) : 4,4'-isopropylidenediphenol

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

Other regulations:

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

The components of this product are reported in the following inventories:

DSL	: All components of this product are on the Canadian DSL
AICS	: On the inventory, or in compliance with the inventory
NZIoC	: Not in compliance with the inventory
ENCS	: Not in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
TCSI	: On the inventory, or in compliance with the inventory
TSCA	: On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), ENCS (Japan), KECI (Korea), NZIOIC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States of America (USA))

15.2 Chemical safety assessment

SECTION 16: Other information

Full text of H-Statements

H302	: Harmful if swallowed.
H312	: Harmful in contact with skin.
H314	: Causes severe skin burns and eye damage.
H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.
H318	: Causes serious eye damage.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

H319	: Causes serious eye irritation.
H332	: Harmful if inhaled.
H335	: May cause respiratory irritation.
H360F	: May damage fertility.
H373	: May cause damage to organs through prolonged or repeated exposure.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.
H411	: Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Acute aquatic toxicity
Aquatic Chronic	: Chronic aquatic toxicity
Eye Dam.	: Serious eye damage
Eye Irrit.	: Eye irritation
Repr.	: Reproductive toxicity
Skin Corr.	: Skin corrosion
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
STOT RE	: Specific target organ toxicity - repeated exposure
STOT SE	: Specific target organ toxicity - single exposure

Further information

Classification of the mixture:

Acute Tox. 4	H302
Acute Tox. 4	H312
Skin Corr. 1A	H314
Eye Dam. 1	H318
Skin Sens. 1	H317
Repr. 1B	H360F
STOT SE 3	H335
STOT RE 2	H373
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Classification procedure:

Calculation method
Calculation method
Calculation method
Calculation method
Calculation method
Calculation method
Calculation method
Calculation method
Calculation method
Calculation method

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

REN HY 5212

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	06.04.2017	400001009577	Date of first issue: 06.04.2017

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

The trademarks above are the property of Huntsman Corporation or an affiliate thereof.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE.