

RENCAST® 6410-1 US

Version 1.0 Revision Date: 12/04/2017 SDS Number: 400001012687 Date of last issue: -
Date of first issue: 12/04/2017

SECTION 1. IDENTIFICATION

Product name : RENCAST® 6410-1 US

Manufacturer or supplier's details

Company name of supplier : Huntsman Advanced Materials Americas LLC
Address : P.O. Box 4980
The Woodlands,
TX 77387
United States of America (USA)
Telephone : Non-Emergency: (800) 257-5547
E-mail address of person responsible for the SDS : MSDS@huntsman.com
Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887


SECTION 2. HAZARDS IDENTIFICATION
GHS classification in accordance with 29 CFR 1910.1200

Acute toxicity (Inhalation) : Category 4
Skin irritation : Category 2
Eye irritation : Category 2B
Respiratory sensitisation : Category 1
Skin sensitisation : Category 1
Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H315 + H320 Causes skin and eye irritation.
H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.

Precautionary statements : **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.

RENCAST® 6410-1 US

Version 1.0	Revision Date: 12/04/2017	SDS Number: 400001012687	Date of last issue: - Date of first issue: 12/04/2017
----------------	------------------------------	-----------------------------	--

P271 Use only outdoors or in a well-ventilated area.
 P272 Contaminated work clothing should not be allowed out of the workplace.
 P280 Wear protective gloves.
 P285 In case of inadequate ventilation wear respiratory protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
 P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

P337 + P313 If eye irritation persists: Get medical advice/attention.

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

P362 Take off contaminated clothing and wash before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal:

P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl)	9048-57-1	70 - 90
4,4'-methylenediphenyl diisocyanate	101-68-8	10 - 20
Benzene, 1,1'-methylenebis[isocyanato-, homopolymer	39310-05-9	1 - 5
methylenediphenyl diisocyanate	26447-40-5	0.1 - 1

The specific chemical identity and/or exact percentage (concentration) of composition may be withheld as a trade secret.

SECTION 4. FIRST AID MEASURES



RENCAST® 6410-1 US

Version 1.0	Revision Date: 12/04/2017	SDS Number: 400001012687	Date of last issue: - Date of first issue: 12/04/2017
----------------	------------------------------	-----------------------------	--

- General advice** : Move out of dangerous area.
 Do not leave the victim unattended.
 Get medical attention immediately if symptoms occur.
 Show this safety data sheet to the doctor in attendance.
- If inhaled** : If breathed in, move person into fresh air.
 Call a physician or poison control centre immediately.
 Keep patient warm and at rest.
 Keep respiratory tract clear.
 If breathing is difficult, give oxygen.
 If breathing is irregular or stopped, administer artificial respiration.
 If unconscious, place in recovery position and seek medical advice.
 Consult a physician immediately if symptoms such as shortness of breath or asthma are observed.
 A hyper-reactive response to even minimal concentrations of diisocyanates may develop in sensitised persons.
 The exposed person may need to be kept under medical surveillance for 48 hours.
 LC50 (rat) : ca. 490 mg/m³ (4 hours) : using experimentally produced respirable aerosol having aerodynamic diameter <5microns.
- In case of skin contact** : In case of contact, immediately flush skin with soap and plenty of water.
 Take off contaminated clothing and shoes immediately.
 Wash contaminated clothing before reuse.
 Thoroughly clean shoes before reuse.
 Call a physician if irritation develops or persists.
 An MDI study has demonstrated that a polyglycol-based skin cleanser (such as D-TamTM, PEG-400) or corn oil may be more effective than soap and water.
- In case of eye contact** : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
 If easy to do, remove contact lens, if worn.
 Protect unharmed eye.
 Keep eye wide open while rinsing.
 If eye irritation persists, consult a specialist.
- If swallowed** : Gently wipe or rinse the inside of the mouth with water.
 DO NOT induce vomiting unless directed to do so by a physician or poison control center.
 Keep respiratory tract clear.
 Keep at rest.
 If a person vomits when lying on his back, place him in the recovery position.
 Never give anything by mouth to an unconscious person.
 If symptoms persist, call a physician.
 Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed** : Severe allergic skin reactions, bronchospasm and anaphylactic shock
 This product is a respiratory irritant and potential respiratory sensitizer: repeated inhalation of vapour or aerosol at levels


RENCAST® 6410-1 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

above the occupational exposure limit could cause respiratory sensitisation.

Symptoms may include irritation to the eyes, nose, throat and lungs, possibly combined with dryness of the throat, tightness of chest and difficulty in breathing.

The onset of the respiratory symptoms may be delayed for several hours after exposure.

A hyper-reactive response to even minimal concentrations of MDI may develop in sensitised persons.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.
It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
First Aid responders should pay attention to self-protection and use the recommended protective clothing

Notes to physician : Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.

The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Foam
Carbon dioxide (CO₂)
Dry powder

Unsuitable extinguishing media : Water may be used if no other available and then in copious quantities. Reaction between water and hot isocyanate may be vigorous.

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
The pressure in sealed containers can increase under the influence of heat.
Exposure to decomposition products may be a hazard to health.

Hazardous combustion products : Combustion products may include: carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbons and HCN. In the event of extreme heat (>500 degrees C), aniline is suspected of being formed.

Specific extinguishing methods : Cool containers/tanks with water spray.

RENCAST® 6410-1 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

- Further information : Standard procedure for chemical fires.
Due to reaction with water producing CO₂-gas, a hazardous build-up of pressure could result if contaminated containers are re-sealed.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Prevent fire extinguishing water from contaminating surface water or the ground water system.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Immediately evacuate personnel to safe areas.
Use personal protective equipment.
If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.
Ensure adequate ventilation.
Keep people away from and upwind of spill/leak.
Only qualified personnel equipped with suitable protective equipment may intervene.
For additional precautions and advice on safe handling, see section 7.
Never return spills in original containers for re-use.
Make sure that there is a sufficient amount of neutralizing/absorbent material near the storage area.
The danger areas must be delimited and identified using relevant warning and safety signs.
Treat recovered material as described in the section "Disposal considerations".
For disposal considerations see section 13.
- Environmental precautions : Do not allow uncontrolled discharge of product into the environment.
Do not allow material to contaminate ground water system.
Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
Local authorities should be advised if significant spillages cannot be contained.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Clean-up methods - small spillage
Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).
Clean contaminated surface thoroughly.
Sweep up or vacuum up spillage and collect in suitable container for disposal.
Neutralize small spillages with decontaminant.

RENCAST® 6410-1 US

Version 1.0	Revision Date: 12/04/2017	SDS Number: 400001012687	Date of last issue: - Date of first issue: 12/04/2017
----------------	------------------------------	-----------------------------	--

The compositions of liquid decontaminants are given in Section 16.
 Remove and dispose of residues.
 Clean-up methods - large spillage
 If the product is in its solid form:
 Spilled MDI flakes should be picked up carefully.
 The area should be vacuum cleaned to remove remaining dust particles completely.
 If the product is in its liquid form:
 Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
 Leave to react for at least 30 minutes.
 Shovel into open-top drums for further decontamination.
 Wash the spillage area with water.
 Test atmosphere for MDI vapour.
 Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Technical measures : Ensure that eyewash stations and safety showers are close to the workstation location.
- Local/Total ventilation : Use only with adequate ventilation.
- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : For personal protection see section 8.
 Avoid formation of aerosol.
 Do not breathe vapours or spray mist.
 Do not breathe vapours/dust.
 Do not swallow.
 Do not get in eyes or mouth or on skin.
 Do not get on skin or clothing.
 Avoid exposure - obtain special instructions before use.
 Smoking, eating and drinking should be prohibited in the application area.
 Provide sufficient air exchange and/or exhaust in work rooms.
 Keep container closed when not in use.
 Open drum carefully as content may be under pressure.
 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.
- Conditions for safe storage : Keep containers tightly closed in a dry, cool and well-ventilated place.
 Keep in properly labelled containers.
 Observe label precautions.
 Protect from moisture.
 Electrical installations / working materials must comply with the technological safety standards.
 Containers which are opened must be carefully resealed and kept

**RENCAS[®] 6410-1 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

upright to prevent leakage.

Materials to avoid : Acids
Amines
Bases
Metals
water

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
4,4'-methylenediphenyl diisocyanate	101-68-8	TWA	0.005 ppm	ACGIH
		C	0.02 ppm 0.2 mg/m ³	OSHA Z-1
methylenediphenyl diisocyanate	26447-40-5	C	0.02 ppm 0.2 mg/m ³	OSHA Z-1

Personal protective equipment

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.
Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
In emergency, non-routine and unknown exposure situations, including confined space entries, a NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied air respirator (SAR) with auxiliary self-contained air supply, should be used.

Hand protection
Remarks

: The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Protective gloves should be worn when handling freshly made polyurethane products to avoid contact with trace residual materials which may be hazardous in contact with skin.

Use chemical resistant gloves classified under Standard EN374: protective gloves against chemicals and microorganisms. Examples of glove materials that might provide suitable protection include: Butyl rubber, Chlorinated polyethylene, Polyethylene, Ethyl vinyl alcohol copolymers laminated ("EVAL"), Polychloroprene (Neoprene*), Nitrile/butadiene rubber ("nitrile" or "NBR"), Polyvinyl chloride ("PVC" or "vinyl"), Fluoroelastomer (Viton*).

RENCAST® 6410-1 US

Version 1.0	Revision Date: 12/04/2017	SDS Number: 400001012687	Date of last issue: - Date of first issue: 12/04/2017
----------------	------------------------------	-----------------------------	--

When prolonged or frequently repeated contact may occur, a glove with protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN374) is recommended.

When only brief contact is expected, a glove with protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN374) is recommended. Contaminated gloves should be decontaminated and disposed of.

Notice: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all requisite workplace factors such as, but not limited to : other chemicals that may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), as well as instructions/specifications provided by the glove supplier.

- Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Chemical splash goggles. Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded. Please follow all applicable local/national requirements when selecting protective measures for a specific workplace. Ensure that eyewash stations and safety showers are close to the workstation location.
- Skin and body protection : Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place. Recommended: Overall (preferably heavy cotton) or Tyvek-Pro Tech 'C' , Tyvek Pro 'F' disposable coverall.
- Protective measures : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Ensure that eye flushing systems and safety showers are located close to the working place.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash face, hands and any exposed skin thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling

RENCAS[®] 6410-1 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

the product.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: cloudy
Odour	: No data is available on the product itself.
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	: > 93.33 °C Method: estimated, closed cup
Evaporation rate	: No data is available on the product itself.
Flammability (solid, gas)	: No data is available on the product itself.
Flammability (liquids)	: No data is available on the product itself.
Upper explosion limit / Upper flammability limit	: No data is available on the product itself.
Lower explosion limit / Lower flammability limit	: No data is available on the product itself.
Vapour pressure	: 0.035991 hPa (71 °C)
Relative vapour density	: 1 Heavier than air.
Relative density	: 1.07 - 1.11
Density	: No data is available on the product itself.
Solubility(ies)	
Water solubility	: Water reactive
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.

SAFETY DATA SHEET

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RENCAST® 6410-1 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

Thermal decomposition : No data is available on the product itself.

Self-Accelerating decomposition temperature (SADT) : No data is available on the product itself.

Viscosity : No data is available on the product itself.

Explosive properties : No data is available on the product itself.

Oxidizing properties : No data is available on the product itself.

Particle size : No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Reaction with water (moisture) produces CO₂-gas. Exothermic reaction with materials containing active hydrogen groups. The reaction becomes progressively more vigorous and can be violent at higher temperatures if the miscibility of the reaction partners is good or is supported by stirring or by the presence of solvents. MDI is insoluble with, and heavier than water and sinks to the bottom but reacts slowly at the interface. A solid water-insoluble layer of polyurea is formed at the interface by liberating carbon dioxide gas.

Conditions to avoid : Extremes of temperature and direct sunlight. Exposure to air or moisture over prolonged periods.

Incompatible materials : Acids
Amines
Bases
Metals
water

Hazardous decomposition products : Combustion products may include: carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbons and HCN. In the event of extreme heat (>500 degrees C), aniline is suspected of being formed.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : No data is available on the product itself.

Acute toxicity

Components:

RENCAS[®] 6410-1 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Acute oral toxicityComponents : LD50 (Rat, male): > 10,000 mg/kg
Method: OECD Test Guideline 401
GLP: no

4,4'-methylenediphenyl diisocyanate:

Acute oral toxicityComponents : LD50 (Rat, male): > 10,000 mg/kg
Method: OECD Test Guideline 401

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Acute oral toxicityComponents : LD50 (Rat, female): > 5,000 mg/kg
Method: OECD Test Guideline 425
Assessment: The substance or mixture has no acute oral toxicity

methylenediphenyl diisocyanate:

Acute oral toxicityComponents : LD50 (Rat, male and female): > 2,000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity - Product : Acute toxicity estimate: 1.51 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Components:

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Acute dermal toxicity : LD50 (Rabbit, male and female): > 9,400 mg/kg
Method: OECD Test Guideline 402
GLP: no

4,4'-methylenediphenyl diisocyanate:

Acute dermal toxicity : LD50 (Rabbit, male and female): > 9,400 mg/kg
Method: OECD Test Guideline 402

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Acute dermal toxicity : LD50 (Rabbit, male and female): > 9,400 mg/kg
Method: OECD Test Guideline 402

methylenediphenyl diisocyanate:

Acute dermal toxicity : LD50 (Rabbit, male and female): > 9,400 mg/kg
Method: OECD Test Guideline 402

Acute toxicity (other routes of : No data available

RENCAS[®] 6410-1 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

administration)

Skin corrosion/irritation**Components:**

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Species: Rabbit

Assessment: Irritant

Method: OECD Test Guideline 404

Result: Irritating to skin.

GLP: yes

4,4'-methylenediphenyl diisocyanate:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Irritating to skin.

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Species: Rabbit

Result: Skin irritation

GLP: yes

methylenediphenyl diisocyanate:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Irritating to skin.

GLP: yes

Serious eye damage/eye irritation**Components:**

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Species: Rabbit

Result: Mild eye irritation

Remarks: Information given is based on data obtained from similar substances.

4,4'-methylenediphenyl diisocyanate:

Species: Rabbit

Result: Mild eye irritation

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Species: Rabbit

Result: Mild eye irritation

Method: OECD Test Guideline 405

GLP: yes

methylenediphenyl diisocyanate:

Species: Rabbit

Result: Mild eye irritation

Method: OECD Test Guideline 405

GLP: yes


RENCAST® 6410-1 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

Respiratory or skin sensitisation
Components:

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Exposure routes: Skin

Species: Mouse

Method: OECD Test Guideline 429

Result: May cause sensitisation by skin contact.

Remarks: Information given is based on data obtained from similar substances.

Exposure routes: Respiratory Tract

Species: Guinea pig

Result: May cause sensitisation by inhalation.

Remarks: Information given is based on data obtained from similar substances.

4,4'-methylenediphenyl diisocyanate:

Exposure routes: Skin

Species: Mouse

Method: OECD Test Guideline 429

Result: May cause sensitisation by skin contact.

Exposure routes: Respiratory Tract

Species: Guinea pig

Result: May cause sensitisation by inhalation.

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Exposure routes: Skin

Species: Guinea pig

Method: OECD Test Guideline 406

Result: May cause sensitisation by skin contact.

Exposure routes: Respiratory Tract

Species: Guinea pig

Result: May cause sensitisation by inhalation.

methylenediphenyl diisocyanate:

Exposure routes: Skin

Species: Guinea pig

Method: OECD Test Guideline 406

Result: May cause sensitisation by skin contact.

Exposure routes: Respiratory Tract

Species: Guinea pig

Result: May cause sensitisation by inhalation.

Components:

4,4'-methylenediphenyl diisocyanate:

Assessment: May cause sensitisation by inhalation and skin contact.

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Assessment: May cause sensitisation by inhalation and skin contact.

**RENCAS[®] 6410-1 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

Germ cell mutagenicity**Components:**

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Genotoxicity in vitro : Concentration: 200 ug/plate
Metabolic activation: with and without metabolic activation
Method: Directive 67/548/EEC, Annex, B.13/14
Result: negative
GLP: yes

4,4'-methylenediphenyl diisocyanate:

Genotoxicity in vitro : Concentration: 200 ug/plate
Metabolic activation: with and without metabolic activation
Method: Directive 67/548/EEC, Annex, B.13/14
Result: negative

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Genotoxicity in vitro : Concentration: ca 50 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

methylenediphenyl diisocyanate:

Genotoxicity in vitro : Concentration: 200 ug/plate
Metabolic activation: with and without metabolic activation
Method: Directive 67/548/EEC, Annex, B.13/14
Result: negative

Components:

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Genotoxicity in vivo : Application Route: Inhalation
Exposure time: 3 Weeks
Dose: 118 mg/m³
Method: OECD Test Guideline 474
Result: negative
GLP: yes

4,4'-methylenediphenyl diisocyanate:

Genotoxicity in vivo : Application Route: Inhalation
Exposure time: 3 Weeks
Dose: 118 mg/m³
Method: OECD Test Guideline 474
Result: negative

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Genotoxicity in vivo : Application Route: Inhalation
Exposure time: 3 Weeks
Dose: 118 mg/m³
Method: OECD Test Guideline 474
Result: negative

methylenediphenyl diisocyanate:

Genotoxicity in vivo : Application Route: Inhalation
Exposure time: 3 Weeks

**RENCAST® 6410-1 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

Dose: 118 mg/m³
Method: OECD Test Guideline 474
Result: negative

Components:

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Germ cell mutagenicity-
Assessment : Animal testing did not show any mutagenic effects.

Germ cell mutagenicity-
Assessment : No data available

Carcinogenicity**Product:**

Remarks: Rats have been exposed for two years to a respirable aerosol of polymeric MDI which resulted in a chronic pulmonary irritation at high concentrations. Only at the top level (6 mg/m³), there was a significant incidence of a benign tumour of the lung (adenoma) and one malignant tumour (adenocarcinoma). There were no lung tumours at 1 mg/m³ and no effects at 0.2 mg/m³. Overall, the tumour incidence, both benign and malignant, and the number of animals with the tumours were not different from controls. The increased incidence of lung tumours is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung, which occurred throughout the study. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that tumour formation will occur.

Carcinogenicity -
Assessment : No data available

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity**Components:**

methylenediphenyl diisocyanate:

Effects on fertility : Species: Rat, male and female
Application Route: Inhalation
Method: OECD Test Guideline 414
Result: No effects on fertility and early embryonic development were detected.

**RENCAST® 6410-1 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

Components:

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Effects on foetal development : Species: Rat, male and female
Application Route: Inhalation
Method: OECD Test Guideline 414
Result: No teratogenic effects
GLP: yes

4,4'-methylenediphenyl diisocyanate:

Species: Rat, female
Application Route: Inhalation
General Toxicity Maternal: No observed adverse effect level: 4 mg/m³
Method: OECD Test Guideline 414
Result: No teratogenic effects

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Species: Rat, female
Application Route: Inhalation
General Toxicity Maternal: No observed adverse effect level: 4 mg/m³
Method: OECD Test Guideline 414
Result: No teratogenic effects

methylenediphenyl diisocyanate:

Species: Rat, female
Application Route: Inhalation
General Toxicity Maternal: No observed adverse effect level: 4 mg/m³
Method: OECD Test Guideline 414
Result: No teratogenic effects

Components:

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

STOT - single exposure**Components:**

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Exposure routes: Inhalation
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.

Remarks: Information given is based on data obtained from similar substances.

4,4'-methylenediphenyl diisocyanate:

Exposure routes: Inhalation
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.

**RENCAS[®] 6410-1 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:
Exposure routes: inhalation (dust/mist/fume)
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.

methylenediphenyl diisocyanate:
Exposure routes: Inhalation
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.

STOT - repeated exposure

No data available

Repeated dose toxicity**Components:**

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Species: Rat, male and female

NOEC: 0.2 mg/m³

Exposure time: 2 yr

Number of exposures: 5 d

Method: OECD Test Guideline 453

4,4'-methylenediphenyl diisocyanate:

Species: Rat, male and female

NOEC: 0.2 mg/m³

Exposure time: 2 yr

Number of exposures: 5 d

Method: OECD Test Guideline 453

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Species: Rat, male and female

NOEC: 0.2 mg/m³

Test atmosphere: dust/mist

Exposure time: 2 yr

Number of exposures: 5 d

Method: OECD Test Guideline 453

methylenediphenyl diisocyanate:

Species: Rat, male and female

NOEC: 0.2 mg/m³

Test atmosphere: dust/mist

Exposure time: 2 yr

Number of exposures: 5 d

Method: OECD Test Guideline 453

Components:

**RENCAST® 6410-1 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:
Repeated dose toxicity - Assessment : No adverse effect has been observed in chronic toxicity tests.

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

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Ingestion: No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:**

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 1,000 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

4,4'-methylenediphenyl diisocyanate:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 1,000 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

**RENCAST® 6410-1 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 1,000 mg/l
 Exposure time: 96 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 203

methylenediphenyl diisocyanate:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 1,000 mg/l
 Exposure time: 96 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 203

Components:

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
 Exposure time: 24 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 202
 GLP: no

4,4'-methylenediphenyl diisocyanate:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
 Exposure time: 24 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 202

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
 Exposure time: 24 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 202

methylenediphenyl diisocyanate:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
 Exposure time: 24 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 202

Components:

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): > 1,640 mg/l
 Exposure time: 72 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 201

methylenediphenyl diisocyanate:

RENCAS[®] 6410-1 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): > 1,640 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : No data available

Toxicity to fish (Chronic toxicity) : No data available

Components:

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): >= 10 mg/l
Exposure time: 21 d
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 211

4,4'-methylenediphenyl diisocyanate:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): >= 10 mg/l
Exposure time: 21 d
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 211

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): >= 10 mg/l
Exposure time: 21 d
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 211

methylenediphenyl diisocyanate:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): >= 10 mg/l
Exposure time: 21 d
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : No data available

Components:

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Toxicity to microorganisms : EC50 (activated sludge): > 100 mg/l
Exposure time: 3 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 209

**RENCAS[®] 6410-1 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:
 Toxicity to microorganisms : EC50 (activated sludge): > 100 mg/l
 Exposure time: 3 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 209

methylenediphenyl diisocyanate:
 Toxicity to microorganisms : EC50 (activated sludge): > 100 mg/l
 Exposure time: 3 h
 Test Type: static test
 Test substance: Fresh water
 Method: OECD Test Guideline 209

Components:

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Toxicity to soil dwelling organisms : NOEC (Eisenia fetida (earthworms)): >= 1,000 mg/kg
 Exposure time: 336 h
 Method: OECD Test Guideline 207
 GLP: yes

4,4'-methylenediphenyl diisocyanate:
 Toxicity to soil dwelling organisms : NOEC (Eisenia fetida (earthworms)): >= 1,000 mg/kg
 Exposure time: 336 h
 Method: OECD Test Guideline 207

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:
 Toxicity to soil dwelling organisms : EC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg
 Exposure time: 336 h
 Method: OECD Test Guideline 207

methylenediphenyl diisocyanate:
 Toxicity to soil dwelling organisms : EC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg
 Exposure time: 336 h
 Method: OECD Test Guideline 207

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment
 Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

**RENCAS[®] 6410-1 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

Persistence and degradability**Components:**

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Biodegradability : Inoculum: Domestic sewage
Concentration: 30 mg/l
Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: Inherent Biodegradability: Modified MITI Test (II)

4,4'-methylenediphenyl diisocyanate:

Biodegradability : Inoculum: Domestic sewage
Concentration: 30 mg/l
Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: Inherent Biodegradability: Modified MITI Test (II)

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Biodegradability : Inoculum: Domestic sewage
Concentration: 30 mg/l
Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: Inherent Biodegradability: Modified MITI Test (II)

methylenediphenyl diisocyanate:

Biodegradability : Inoculum: Domestic sewage
Concentration: 30 mg/l
Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: Inherent Biodegradability: Modified MITI Test (II)

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

**RENCAST® 6410-1 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

Physico-chemical
removability : No data available

Components:

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Stability in water : Method: No information available.
GLP: No information available.
Remarks: see user defined free text

4,4'-methylenediphenyl diisocyanate:

Stability in water : Degradation half life(DT50): 20 hrs (25 °C)
Remarks: Fresh water

Photodegradation : No data available

Impact on Sewage
Treatment : No data available

Bioaccumulative potential**Components:**

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 200
GLP: yes
Remarks: Bioaccumulation is unlikely.

4,4'-methylenediphenyl diisocyanate:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 200
Remarks: Bioaccumulation is unlikely.

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 200
Remarks: Bioaccumulation is unlikely.

methylenediphenyl diisocyanate:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 200
Remarks: Bioaccumulation is unlikely.

Bioconcentration factor (BCF): 439
Remarks: Bioaccumulation is unlikely.

Components:

4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with .alpha -hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl):

Partition coefficient: n- : log Pow: 4.51 (20 °C)
octanol/water pH: 7
Method: OECD Test Guideline 117
GLP: no

**RENCAS[®] 6410-1 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

4,4'-methylenediphenyl diisocyanate:

Partition coefficient: n-octanol/water : log Pow: 4.51 (20 °C)
pH: 7
Method: OECD Test Guideline 117

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer:

Partition coefficient: n-octanol/water : log Pow: 8.56 (20 °C)

methylenediphenyl diisocyanate:

Partition coefficient: n-octanol/water : log Pow: 4.51 (22 °C)
pH: 7
Method: OECD Test Guideline 117

Mobility in soil

Mobility : No data available

Distribution among environmental compartments : No data available

Stability in soil : No data available

Other adverse effects

Environmental fate and pathways : No data available

Results of PBT and vPvB assessment : No data available

Endocrine disrupting potential : No data available

Adsorbed organic bound halogens (AOX) : No data available

Hazardous to the ozone layer

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82
Protection of Stratospheric Ozone - CAA Section 602 Class I
Substances
Remarks: This product neither contains, nor was
manufactured with a Class I or Class II ODS as defined by the
U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A +
B).

Additional ecological information : No data available

Global warming potential (GWP) : No data available

**RENCAS[®] 6410-1 US**

Version 1.0	Revision Date: 12/04/2017	SDS Number: 400001012687	Date of last issue: - Date of first issue: 12/04/2017
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SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

- Waste from residues : Do not dispose of waste into sewer.
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**International Regulations****IATA**

Not regulated as dangerous goods

IMDG

Not regulated as dangerous goods

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

Not applicable for product as supplied.

National Regulations**DOT Classification**

Not regulated as dangerous goods

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
4,4'-methylenediphenyl diisocyanate	101-68-8	5000	40884

- SARA 311/312 Hazards** : Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitisation
Specific target organ toxicity (single or repeated exposure)

- SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

**RENCAS[®] 6410-1 US**

Version 1.0	Revision Date: 12/04/2017	SDS Number: 400001012687	Date of last issue: - Date of first issue: 12/04/2017
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4,4'-methylenediphenyl diisocyanate	101-68-8	>= 10 - < 20 %
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The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

4,4'-methylenediphenyl diisocyanate	101-68-8
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California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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

CH INV	: The formulation contains substances listed on the Swiss Inventory, Not in compliance with the inventory
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	: On the inventory, or 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), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

TSCA - 5(a) Significant New Use Rule List of Chemicals

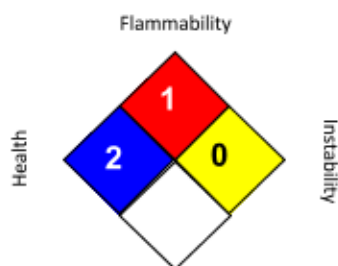
No substances are subject to a Significant New Use Rule.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

No substances are subject to TSCA 12(b) export notification requirements.

RENCAS[®] 6410-1 US

Version 1.0 Revision Date: 12/04/2017 SDS Number: 400001012687 Date of last issue: -
Date of first issue: 12/04/2017

SECTION 16. OTHER INFORMATION**Further information****NFPA:****HMIS[®] IV:**

HEALTH	*	2
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS[®] ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Liquid decontaminants (percentages by weight or volume) :

Decontaminant 1 : *- sodium carbonate : 5 - 10 % *- liquid detergent : 0.2 - 2 % *- water : to make up to 100 %

Decontaminant 2 : *- concentrated ammonia solution : 3 - 8 % *- liquid detergent : 0.2 - 2 % *- water : to make up to 100 %

Decontaminant 1 reacts slower with diisocyanates but is more environmentally friendly than decontaminant 2.

Decontaminant 2 contains ammonia. Ammonia presents health hazards. (See supplier safety information.)

Revision Date : 12/04/2017

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1
Limits for Air Contaminants

ACGIH / TWA : 8-hour, time-weighted average

OSHA Z-1 / C : Ceiling

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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

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Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12/04/2017	400001012687	Date of first issue: 12/04/2017

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.

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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.

REN® 6410-3 US

Version 1.0 Revision Date: 09/23/2016 SDS Number: 400000003635 Date of last issue: -
Date of first issue: 09/23/2016

SECTION 1. IDENTIFICATION

Product name : REN® 6410-3 US

Manufacturer or supplier's details

Company name of supplier : Huntsman Advanced Materials Americas LLC
Address : P.O. Box 4980
The Woodlands,
TX 77387
United States of America
Telephone : Non-Emergency: (800) 257-5547
E-mail address of person responsible for the SDS : MSDS@huntsman.com
Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Acute toxicity (Oral) : Category 4
Acute toxicity (Dermal) : Category 4
Reproductive toxicity : Category 1B
Chronic aquatic toxicity : Category 3

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H302 + H312 Harmful if swallowed or in contact with skin
H360 May damage fertility or the unborn child.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:

**REN® 6410-3 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/23/2016	400000003635	Date of first issue: 09/23/2016

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
 P302 + P352 + P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell.
 P308 + P313 IF exposed or concerned: Get medical advice/attention.
 P363 Wash contaminated clothing before reuse.
 P391 Collect spillage.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Hazardous components**

Chemical name	CAS-No.	Concentration (% w/w)
bis(2-ethylhexyl) phthalate	117-81-7	13 - 30
Butylated hydroxytoluene	128-37-0	0.1 - 1
PHENYLMERCURIC SUBSTANCE	Not Assigned	0.1 - 1

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

- General advice : Do not leave the victim unattended.
- If inhaled : If unconscious place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes.
- In case of eye contact : Flush eyes with water as a precaution.
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 give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and : None known.

**REN® 6410-3 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/23/2016	400000003635	Date of first issue: 09/23/2016

delayed

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : No data is available on the product itself.
- Unsuitable extinguishing media : High volume water jet
- 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.
- 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.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
- 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.
- Methods and materials for containment and cleaning up : Wipe up with absorbent material (e.g. cloth, fleece).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Avoid contact with skin and eyes.
For personal protection see section 8.

REN® 6410-3 US

Version 1.0 Revision Date: 09/23/2016 SDS Number: 400000003635 Date of last issue: -
 Date of first issue: 09/23/2016

Smoking, eating and drinking should be prohibited in the application area.
 Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : 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.
 Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
bis(2-ethylhexyl) phthalate	117-81-7	TWA	5 mg/m ³	ACGIH
		TWA	5 mg/m ³	OSHA Z-1
Butylated hydroxytoluene	128-37-0	TWA (Inhalable fraction and vapor)	2 mg/m ³	ACGIH

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Hand protection
 Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
 Tightly fitting safety goggles

Skin and body protection : Impervious clothing
 Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : clear

Odour : No data is available on the product itself.

Odour Threshold : No data is available on the product itself.

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Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/23/2016	400000003635	Date of first issue: 09/23/2016

pH : No data is available on the product itself.

Flash point : > 187 °C

Evaporation rate : No data is available on the product itself.

Flammability (solid, gas) : No data is available on the product itself.

Flammability (liquids) : 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 : No data is available on the product itself.

Relative vapour density : No data is available on the product itself.

Relative density : No data is available on the product itself.

Density : 1 g/cm3

Solubility(ies)

Water solubility : No data is available on the product itself.

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.

Thermal decomposition : No data is available on the product itself.

Self-Accelerating decomposition temperature (SADT) : No data is available on the product itself.

Viscosity : No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : No decomposition if stored and applied as directed.

Possibility of hazardous reactions : No decomposition if stored and applied as directed.

Conditions to avoid : No data available

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : No data is available on the product itself.

Acute toxicity

Acute oral toxicity - Product : Acute toxicity estimate : 1,786 mg/kg
Method: Calculation method


REN® 6410-3 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/23/2016	400000003635	Date of first issue: 09/23/2016

Acute inhalation toxicity - Product : Acute toxicity estimate: 178.59 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Acute dermal toxicity - Product : Acute toxicity estimate : 1,786 mg/kg
Method: Calculation method

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

Skin corrosion/irritation
Product:

Remarks: May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation
Product:

Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin.

Respiratory or skin sensitisation
Components:

bis(2-ethylhexyl) phthalate:
Exposure routes: Skin
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitisation.

Butylated hydroxytoluene:
Exposure routes: Skin
Species: Humans
Result: Does not cause skin sensitisation.

PHENYLMERCURIC SUBSTANCE:
Exposure routes: Skin
Result: Does not cause skin sensitisation.

Assessment: No data available

Germ cell mutagenicity
Components:

bis(2-ethylhexyl) phthalate:
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Metabolic activation: with and without metabolic activation
Result: negative

REN® 6410-3 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/23/2016	400000003635	Date of first issue: 09/23/2016

GLP: yes

Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 471
 Result: negative

Butylated hydroxytoluene:
 Genotoxicity in vitro

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

Metabolic activation: Metabolic activation
 Result: negative

Concentration: 100 - 1000 ug/plate
 Metabolic activation: with and without metabolic activation
 Result: negative

Components:

bis(2-ethylhexyl) phthalate:
 Genotoxicity in vivo

: Application Route: Oral
 Exposure time: 30 d
 Method: OECD Test Guideline 486
 Result: negative

Butylated hydroxytoluene:
 Genotoxicity in vivo

: Application Route: Intraperitoneal injection
 Dose: 75 mg/kg
 Result: negative

Application Route: Oral
 Exposure time: 9 Months
 Dose: ca 750 mg/kg
 Result: negative

Carcinogenicity**Components:**

bis(2-ethylhexyl) phthalate:
 Species: Rat, (male and female)
 Application Route: Other
 Exposure time: 104 weeks
 Dose: 28.9 - 36.1 mg/kg
 Frequency of Treatment: 7 daily
 Result: positive
 Target Organs: Liver

Target Organs: Kidney

Target Organs: Testes

Butylated hydroxytoluene:
 Species: Rat, (male and female)
 Application Route: Oral
 Result: negative

**REN® 6410-3 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/23/2016	400000003635	Date of first issue: 09/23/2016

Target Organs: Liver

Carcinogenicity - Assessment : No data available

IARC Group 2B: Possibly carcinogenic to humans

bis(2-ethylhexyl) phthalate

OSHA No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.**NTP** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.**Reproductive toxicity****Components:**bis(2-ethylhexyl) phthalate:
Effects on fertility: Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 416
GLP: yes

Butylated hydroxytoluene:

Species: Rat, male and female
Application Route: Oral**Components:**bis(2-ethylhexyl) phthalate:
Effects on foetal
development: Species: Rat
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level:
340 mg/kg body weight
Method: OECD Test Guideline 416
Result: Teratogenic effectsSpecies: Rat
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level:
357 mg/kg body weight
Method: OECD Test Guideline 414
Result: Teratogenic effects

Butylated hydroxytoluene:

Species: Rat
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level:
100 mg/kg body weight
Result: No teratogenic effects**Components:**

**REN® 6410-3 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/23/2016	400000003635	Date of first issue: 09/23/2016

bis(2-ethylhexyl) phthalate:
Reproductive toxicity - Assessment : Presumed human reproductive toxicant

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity**Components:**

bis(2-ethylhexyl) phthalate:
Species: Rat, male and female
50 mg/m³
Test atmosphere: dust/mist
Exposure time: 6 h
Method: OECD Test Guideline 412

Species: Rat, male and female
NOAEL: 29 - 36 mg/kg
Application Route: Ingestion
Exposure time: 104 Weeks
Number of exposures: 7 d
Method: Chronic toxicity

Butylated hydroxytoluene:
Species: Rat, male and female
NOAEL: 25 mg/kg/d
Application Route: Ingestion
Method: Chronic toxicity

Repeated dose toxicity - Assessment : No data available

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® 6410-3 US**

Version 1.0 Revision Date: 09/23/2016 SDS Number: 400000003635 Date of last issue: -
Date of first issue: 09/23/2016

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information**Product:**

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:**

bis(2-ethylhexyl) phthalate:

Toxicity to fish : LC50 (Fish): > 0.16 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
GLP: yes

Components:

bis(2-ethylhexyl) phthalate:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): > 0.003 mg/l
Exposure time: 48 h
Test Type: static test

Butylated hydroxytoluene:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.61 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Components:

bis(2-ethylhexyl) phthalate:

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): > 0.003 mg/l
Exposure time: 72 h
Test substance: Fresh water
Method: OECD Test Guideline 201

Butylated hydroxytoluene:

Toxicity to algae : EC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): > 0.4 mg/l
Exposure time: 72 h
Test Type: static test
Method: Directive 67/548/EEC, Annex V, C.3.

**REN® 6410-3 US**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/23/2016	400000003635	Date of first issue: 09/23/2016

Components:

Butylated hydroxytoluene:
M-Factor (Acute aquatic toxicity) : 1

Components:

Butylated hydroxytoluene:
Toxicity to fish (Chronic toxicity) : LC0 (Brachydanio rerio (zebrafish)): >= 0.57 mg/l
Exposure time: 96 hrs
Test Type: semi-static test
Method: Directive 67/548/EEC, Annex V, C.1.

Components:

Butylated hydroxytoluene:
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.32 mg/l
Exposure time: 21 d
Test Type: semi-static test
Method: OECD Test Guideline 202

EC0 (Daphnia magna (Water flea)): >= 0.31 mg/l
Exposure time: 48 hrs
Test Type: static test
Method: Directive 67/548/EEC, Annex V, C.2.

NOEC (Daphnia magna (Water flea)): 0.23 mg/l
Exposure time: 48 hrs
Test Type: static test
Method: OECD Test Guideline 202

NOEC (Daphnia magna (Water flea)): 0.316 mg/l
Exposure time: 21 d
Test Type: semi-static test
Method: OECD Test Guideline 202

M-Factor (Chronic aquatic toxicity) : No data available

Components:

Butylated hydroxytoluene:
Toxicity to bacteria : IC50 (activated sludge): > 500 mg/l
Exposure time: 0.5 h
Method: Directive 67/548/EEC, Annex V, C.11

: EC50 (activated sludge): > 10,000 mg/l
Exposure time: 3 h
Test Type: static test
Method: Directive 67/548/EEC, Annex, B.15

Components:

bis(2-ethylhexyl) phthalate:
Toxicity to soil dwelling : NOEC (Eisenia fetida (earthworms)): 1,000 mg/kg

REN® 6410-3 US

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	09/23/2016	400000003635	Date of first issue: 09/23/2016

organisms
 Exposure time: 336 h
 Test substance: Natural
 Method: OECD Test Guideline 207
 GLP: yes

Components:

bis(2-ethylhexyl) phthalate:
 Plant toxicity : NOEC: 100 mg/kg
 Exposure time: 432 h
 Test substance: Synthetic
 Method: Terrestrial Plants Test: Seedling Emergence and
 Seedling Growth Test
 GLP: yes

Components:

bis(2-ethylhexyl) phthalate:
 Sediment toxicity : (Gammarus pulex (Amphipod)): 1000 mg/kg sediment dw
 Study: Chronic
 Test Type: static test
 Sediment: Natural
 Exposure duration: 35 d
 Test substance: Natural

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment
 Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Further information:
 No data available

Persistence and degradability**Components:**

bis(2-ethylhexyl) phthalate:
 Biodegradability : Result: Readily biodegradable
 Biodegradation: > 60 %
 Exposure time: 28 d

 Inoculum: Sewage (STP effluent)
 Result: Readily biodegradable
 Biodegradation: 100 %
 Exposure time: 28 d
 Method: OECD Test Guideline 311

 Inoculum: activated sludge

REN® 6410-3 US

Version 1.0 Revision Date: 09/23/2016 SDS Number: 400000003635 Date of last issue: -
 Date of first issue: 09/23/2016

Result: Readily biodegradable
 Biodegradation: 82 %
 Exposure time: 29 d
 Method: OECD Test Guideline 301B

Inoculum: Fresh water
 Biodegradation: 71.2 %
 Exposure time: 60 d

Inoculum: Soil

Butylated hydroxytoluene:
 Biodegradability : Inoculum: activated sludge
 Result: Inherently biodegradable.
 Biodegradation: 5.2 %
 Exposure time: 112 d

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

Physico-chemical removability : No data available

Stability in water : No data available

Photodegradation : No data available

Impact on Sewage Treatment : No data available

Bioaccumulative potential**Components:**

bis(2-ethylhexyl) phthalate:
 Bioaccumulation : Bioconcentration factor (BCF): 0.32 - 0.34
 Test substance: Marine water
 Remarks: Does not bioaccumulate.

Butylated hydroxytoluene:
 Bioaccumulation : Species: Cyprinus carpio (Carp)
 Bioconcentration factor (BCF): 330 - 1,800
 Exposure time: 28 d
 Method: flow-through test

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1.0	09/23/2016	400000003635	Date of first issue: 09/23/2016

Components:

bis(2-ethylhexyl) phthalate:
Partition coefficient: n-octanol/water : log Pow: 7.137 - 7.94 (25 °C)
GLP: no

log Pow: 7.5

Butylated hydroxytoluene:
Partition coefficient: n-octanol/water : log Pow: 5.1

Mobility in soil

Mobility : No data available

Components:

bis(2-ethylhexyl) phthalate:
Distribution among environmental compartments : Koc: 482000
Butylated hydroxytoluene:
Distribution among environmental compartments : Koc: 8183
Stability in soil : No data available

Other adverse effects

Environmental fate and pathways : No data available

Results of PBT and vPvB assessment : No data available

Endocrine disrupting potential : No data available

Adsorbed organic bound halogens (AOX) : No data available

Hazardous to the ozone layer

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82
Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

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

Global warming potential : No data available

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Version 1.0 Revision Date: 09/23/2016 SDS Number: 400000003635 Date of last issue: -
Date of first issue: 09/23/2016

(GWP)

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

- Waste from residues : 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

International Regulation

IATA

Not regulated as dangerous goods

IMDG

Not regulated as dangerous goods

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

Not applicable for product as supplied.

National Regulations

DOT Classification

- UN/ID/NA number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(bis(2-ethylhexyl) phthalate)
Class : 9
Packing group : III
Labels : CLASS 9
ERG Code : 171
Marine pollutant : no
Remarks : Different package sizes may lead to a non-regulated classification

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

bis(2-ethylhexyl) phthalate	117-81-7	100	347
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Version 1.0 Revision Date: 09/23/2016 SDS Number: 400000003635 Date of last issue: -
 Date of first issue: 09/23/2016

PHENYLMERCURIC SUBSTANCE	Not Assigned	1	357
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SARA 311/312 Hazards : Chronic Health Hazard

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

bis(2-ethylhexyl) phthalate	117-81-7	28.8052 %
PHENYLMERCURIC SUBSTANCE	Not Assigned	0.28 %

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

bis(2-ethylhexyl) phthalate	117-81-7	28.8052 %
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California Prop. 65 WARNING! This product contains a chemical known to the State of California to cause cancer.

bis(2-ethylhexyl) phthalate 117-81-7

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

bis(2-ethylhexyl) phthalate 117-81-7
 PHENYLMERCURIC SUBSTANCE Not Assigned

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

- CH INV : The formulation contains substances listed on the Swiss Inventory, Not in compliance with the inventory
- TSCA : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- AICS : Not in compliance with the inventory
- NZIoC : Not in compliance with the inventory
- ENCS : Not in compliance with the inventory
- KECI : Not in compliance with the inventory
- PICCS : Not in compliance with the inventory
- IECSC : Not in compliance with the inventory
- TCSI : Not in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

TSCA - 5(a) Significant New Use Rule List of Chemicals

No substances are subject to a Significant New Use Rule.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

No substances are subject to TSCA 12(b) export notification requirements.

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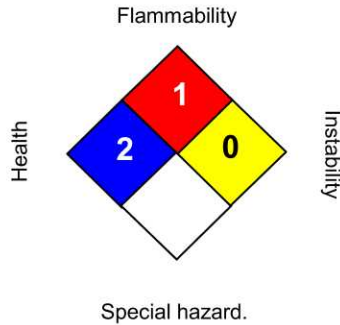
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Version 1.0 Revision Date: 09/23/2016 SDS Number: 400000003635 Date of last issue: -
Date of first issue: 09/23/2016

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	2*
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

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