

URALANE® 5774 A US

Version 1.4 Revision Date: 10/31/2017 SDS Number: 400001008104 Date of last issue: 10/31/2017
Date of first issue: 01/10/2017

SECTION 1. IDENTIFICATION

Product name : URALANE® 5774 A 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

Recommended use of the chemical and restrictions on use

Recommended use : Adhesives

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 2A
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 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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H335 May cause respiratory irritation.

Precautionary statements : **Prevention:**
 P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
 P264 Wash skin thoroughly after handling.
 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/ eye protection/ face protection.
 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)
Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol (3:1), polymer with 1,1'-methylenebis[4-isocyanatocyclohexane]	ACCN # 139812	30 - 60
1,6,7,8,9,14,15,16,17,17,18,18-dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene	13560-89-9	13 - 30
2-Oxepanone, polymer with 1,1'-methylenebis[4-isocyanatocyclohexane] and 2,2'-oxybis[ethanol]	54954-83-5	13 - 30
4,4'-methylenedicyclohexyl diisocyanate	5124-30-1	1 - 3

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

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : Call a physician or poison control centre immediately.
If unconscious, place in recovery position and seek medical advice.
- 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 : Immediately flush eye(s) with plenty of water.
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.
Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed : None known.
- Notes to physician : Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : No information available.
- Hazardous combustion products : No hazardous combustion products are known

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- Specific extinguishing methods : No data is available on the product itself.
- Further information : Standard procedure for chemical fires.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- 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.
Ensure adequate ventilation.
- 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 : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
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 formation of aerosol.
Do not breathe vapours/dust.
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.
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 container tightly closed in a dry and well-ventilated place.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : Strong acids

Strong bases

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Strong oxidizing agents

Recommended storage temperature : 2 - 40 °C

Further information on storage stability : No decomposition if stored and applied as directed.

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'-methylenedicyclohexyl diisocyanate	5124-30-1	TWA	0.005 ppm	ACGIH

Engineering measures : Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

Filter type : Filter type A-P

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

Material : Neoprene gloves

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
 Wear face-shield and protective suit for abnormal processing problems.

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.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: off-white
Odour	: slight
Odour Threshold	: No data is available on the product itself.
pH	: No data is available on the product itself.
Melting point/freezing point	: No data available
Boiling point/boiling range	: No information available.
Flash point	: 202 °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.
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	: < 1 hPa (20 °C)
Relative vapour density	: No data is available on the product itself.
Relative density	: 1.32
Density	: 1.32 g/cm ³ (25 °C)
Solubility(ies)	
Water solubility	: Water reactive (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
Self-Accelerating decomposition temperature (SADT)	: No data is available on the product itself.

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Viscosity
 Viscosity, dynamic : 33,000 mPa.s (25 °C)

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

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

Molecular weight : No data available

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

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Stable under recommended storage conditions.
 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

Incompatible materials : No data available

Hazardous decomposition products : Carbon oxides
 Burning produces noxious and toxic fumes.

SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute toxicity**Components:**

1,6,7,8,9,14,15,16,17,17,18,18-dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene:

Acute oral toxicityComponents : LD50 (Rat, male and female): > 25,000 mg/kg
 Method: OECD Test Guideline 401

4,4'-methylenedicyclohexyl diisocyanate:

Acute oral toxicityComponents : LD50 (Rat, male and female): 18,200 mg/kg

Acute inhalation toxicity - Product : Assessment: The component/mixture is moderately toxic after short term inhalation.

Acute dermal toxicity - Product : Acute toxicity estimate : > 5,000 mg/kg
 Method: Calculation method

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

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Skin corrosion/irritation**Product:**

Remarks: May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation**Product:**

Remarks: May cause irreversible eye damage.

Respiratory or skin sensitisation**Product:**

Remarks: Causes sensitisation.

Assessment: No data available

Germ cell mutagenicity**Components:**

1,6,7,8,9,14,15,16,17,17,18,18-dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

4,4'-methylenedicyclohexyl diisocyanate:

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

Concentration: 28 µg/L
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Concentration: 96 µg/L
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Components:

1,6,7,8,9,14,15,16,17,17,18,18-dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene:

Genotoxicity in vivo : Test Type: gene mutation test
Species: Rat
Result: negative

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Carcinogenicity

No data available

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:**

1,6,7,8,9,14,15,16,17,17,18,18-dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene:

Effects on fertility : Test Type: Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test
 Species: Rat, male and female
 Application Route: Oral
 Dose: 0, 750, 1,500, 5,000 mg/kg bw
 General Toxicity - Parent: No-observed-effect level: > 5,000 mg/kg body weight
 General Toxicity F1: No-observed-effect level: > 5,000 mg/kg body weight
 Method: OECD Test Guideline 422
 Result: Animal testing did not show any effects on fertility.

4,4'-methylenedicyclohexyl diisocyanate:

Species: Rat, male and female
 Application Route: Inhalation
 Target Organs: Respiratory Tract
 Method: OECD Test Guideline 421

Components:

4,4'-methylenedicyclohexyl diisocyanate:

Effects on foetal development : Species: Rat, female
 Application Route: Inhalation
 General Toxicity Maternal: No observed adverse effect level: 1 mg/m³
 Method: OECD Test Guideline 414
 Result: No teratogenic effects

Reproductive toxicity - Assessment : No data available

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STOT - single exposure**Components:**

Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol (3:1), polymer with 1,1'-methylenebis[4-isocyanatocyclohexane]:

Exposure routes: inhalation (dust/mist/fume)

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

2-Oxepanone, polymer with 1,1'-methylenebis[4-isocyanatocyclohexane] and 2,2'-oxybis[ethanol]:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

4,4'-methylenedicyclohexyl diisocyanate:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

STOT - repeated exposure

No data available

Repeated dose toxicity**Components:**

1,6,7,8,9,14,15,16,17,17,18,18-dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene:

Species: Rat, male and female

NOAEL: > 100,000 ppm

Application Route: Oral

Dose: 0, 10,000, 30,000, 100,000

Method: OECD Test Guideline 408

Species: Rat, male and female

NOAEL: 1.524 mg/l

Application Route: Inhalation

Dose: 0, 640, and 1,524 mg/l

Method: OECD Test Guideline 412

4,4'-methylenedicyclohexyl diisocyanate:

Species: Rat, male and female

NOEC: 3 mg/m³

Test atmosphere: dust/mist

Exposure time: 13 Weeks

Number of exposures: 6 h

Method: OECD Test Guideline 413

Repeated dose toxicity - : No data available
Assessment

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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**Product:**

Remarks: No data available

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

1,6,7,8,9,14,15,16,17,17,18,18-dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Test Type: flow-through test

4,4'-methylenedicyclohexyl diisocyanate:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 8.1 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.1.**Components:**

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4,4'-methylenedicyclohexyl diisocyanate:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 8.3 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.2.

Components:

4,4'-methylenedicyclohexyl diisocyanate:

Toxicity to algae : EgC50 (Desmodesmus subspicatus (green algae)): > 5 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.3.

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

Toxicity to fish (Chronic toxicity) : No data available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : No data available

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

Toxicity to microorganisms : No data available

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment

Components:

4,4'-methylenedicyclohexyl diisocyanate:

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Components:

4,4'-methylenedicyclohexyl diisocyanate:

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

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Persistence and degradability**Components:**

1,6,7,8,9,14,15,16,17,17,18,18-dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Concentration: 100 mg/l
Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d

4,4'-methylenedicyclohexyl diisocyanate:

Biodegradability : Inoculum: activated sludge
Concentration: 30 mg/l
Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: Directive 67/548/EEC Annex V, C.4.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

Bioaccumulation : No data available

Partition coefficient: n-octanol/water : No data available

Mobility in soil

Mobility : No data available

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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 - Product : No data available

Global warming potential (GWP) : No data available

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**

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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**

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:

4,4'-methylenedicyclohexyl diisocyanate	5124-30-1	1.3494 %
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This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

California Prop. 65

WARNING: This product can expose you to chemicals including hexachlorobuta-1,3-diene, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

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

CH INV	: The formulation contains substances listed on the Swiss Inventory, On the inventory, or in compliance with the inventory
DSL	: This product contains one or several components that are not on the Canadian DSL nor NDSL.
AICS	: Low volume exemption, On the inventory, or in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory
KECI	: Not in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory

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TCSI : On the inventory, or in compliance with the inventory
 TSCA : On the inventory, or in compliance with the inventory
 ENCS : On the inventory, or in compliance with the inventory

Inventories

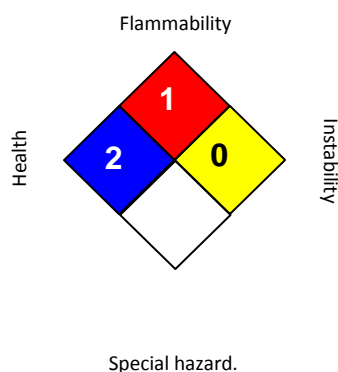
AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECl (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

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.

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.

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ACGIH : USA. ACGIH Threshold Limit Values (TLV)
 ACGIH / TWA : 8-hour, time-weighted average

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.

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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.

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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Date of first issue: 09/22/2015

SECTION 1. IDENTIFICATION

Product name : URALANE® 5774 C 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

Recommended use of the chemical and restrictions on use

Recommended use : Hardener


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

Acute toxicity (Oral) : Category 4
Skin sensitisation : Category 1
Germ cell mutagenicity : Category 2
Carcinogenicity : Category 2
Reproductive toxicity : Category 2
Specific target organ toxicity - single exposure (Oral) : Category 2 (Liver)
Specific target organ toxicity - repeated exposure (Oral) : Category 1 (Liver)
Specific target organ toxicity - repeated exposure (Oral) : Category 2 (Kidney)
Acute aquatic toxicity : Category 1
Chronic aquatic toxicity : Category 1

GHS label elements

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- Hazard pictograms : 
- Signal word : Danger
- Hazard statements : H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.
H361 Suspected of damaging fertility or the unborn child.
H371 May cause damage to organs (Liver) if swallowed.
H372 Causes damage to organs (Liver) through prolonged or repeated exposure if swallowed.
H373 May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.
H410 Very toxic 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.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: 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 facility in accordance with local, regional, national and international regulations.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

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Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
4,4'-methylenebis(2-ethylaniline)	19900-65-3	13 - 30
tris(methylphenyl) phosphate	1330-78-5	7 - 13
Formaldehyde, polymer with 2-ethylbenzenamine	69178-41-2	3 - 7
4,4'-methylenebis[N-sec-butylaniline]	5285-60-9	3 - 7
2-ethylaniline	578-54-1	1 - 3
1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol	102-60-3	1 - 3
ethylbenzene	100-41-4	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

- 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.
 Move out of dangerous area.
 Show this safety data sheet to the doctor in attendance.
 Do not leave the victim unattended.
- If inhaled : Move to fresh air.
 If unconscious, place in recovery position and seek medical advice.
 If symptoms persist, call a physician.

 If unconscious, place in recovery position and seek medical advice.
 If symptoms persist, call a physician.
- In case of skin contact : If on skin, rinse well with water.
- 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 : Induce vomiting immediately and call a physician.
 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.
 Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed : None known.

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Notes to physician : No information available.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
No data is available on the product itself.
- Hazardous combustion products : No data is available on the product itself.
No hazardous combustion products are known
- 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.
Evacuate personnel to safe areas.
Ensure adequate ventilation.
In case of inadequate ventilation wear respiratory protection.
- Environmental precautions : Prevent product from entering drains.
Do not flush into surface water or sanitary sewer system.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

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 : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

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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 : Do not breathe vapours/dust.
 Avoid exceeding the given occupational exposure limits (see section 8).
 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.
 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.
- Do not breathe vapours/dust.
 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.
 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 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.
- Materials to avoid : Strong acids
 Strong bases
 Strong oxidizing agents
- Further information on storage stability : No decomposition if stored and applied as directed.

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

Components	CAS-No.	Value type	Control	Basis
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		(Form of exposure)	parameters / Permissible concentration	
2-ethylaniline	578-54-1	TWA	5 ppm 19 mg/m ³	OSHA Z-1
ethylbenzene	100-41-4	TWA	20 ppm	ACGIH
		TWA	100 ppm 435 mg/m ³	OSHA Z-1

Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.
 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.

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

Material : Neoprene 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 : beige
 Odour : amine-like
 Odour Threshold : No data is available on the product itself.
 pH : No data is available on the product itself.
 Melting point/freezing point : No data available
 Boiling point/boiling range : No data available

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Flash point : > 100 °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 : < 1 hPa (20 °C)

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

Relative density : 1.2 - 1.4

Density : 1.15 - 1.4 g/cm³ (25 °C)

Solubility(ies)
Water solubility : insoluble (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

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

Viscosity
Viscosity, dynamic : 60,000 mPa.s (25 °C)

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

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

Molecular weight : No data available

Particle size : 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.

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Possibility of hazardous reactions : No decomposition if stored and applied as directed.
Conditions to avoid : No data available

Incompatible materials : No data available

Hazardous decomposition products : Carbon oxides
Nitrogen oxides (NOx)
Oxides of phosphorus

Burning produces noxious and toxic fumes.

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 : 1,454 mg/kg
Method: Calculation method

Acute inhalation toxicity - Product : Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity - Product : Assessment: The substance or mixture has no acute dermal toxicity

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**Product:**

Remarks: Causes sensitisation.

Assessment: No data available

Germ cell mutagenicity**Components:**

4,4'-methylenebis(2-ethylaniline):

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Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
Result: positive

tris(methylphenyl) phosphate:
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Result: negative

4,4'-methylenebis[N-sec-butylaniline]:
Genotoxicity in vitro : Method: OECD Test Guideline 471
Result: negative

ethylbenzene:
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Components:

4,4'-methylenebis(2-ethylaniline):
Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse
Cell type: Somatic
Application Route: Intraperitoneal injection
Exposure time: 72 h
Dose: 56 - 140 mg/kg
Method: OECD Test Guideline 474
Result: Not classified due to inconclusive data.

Test Type: In vivo micronucleus test
Species: Mouse
Cell type: Somatic
Application Route: Intraperitoneal injection
Dose: 9.3 - 37 mg/kg
Method: OECD Test Guideline 474
Result: positive

ethylbenzene:
Genotoxicity in vivo : Method: OECD Test Guideline 474
Result: negative

Method: OECD Test Guideline 486
Result: negative

Components:

4,4'-methylenebis(2-ethylaniline):
Germ cell mutagenicity-
Assessment : Positive result(s) from in vivo somatic cell mutagenicity tests supported by positive results from in vitro mutagenicity assays or chemical structure activity relationship to known germ cell mutagens

tris(methylphenyl) phosphate:

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Germ cell mutagenicity-
Assessment : In vitro tests did not show mutagenic effects

Germ cell mutagenicity-
Assessment : No data available

Carcinogenicity**Components:**

4,4'-methylenebis(2-ethylaniline):

Species: Rat, (male and female)

Application Route: Oral

Exposure time: 103 weeks

Dose: 9 - 10 mg/kg

Frequency of Treatment: 24 hour

Method: OECD Test Guideline 451

Result: positive

Components:

4,4'-methylenebis(2-ethylaniline):

Carcinogenicity -
Assessment : Limited evidence of carcinogenicity in animal studies

tris(methylphenyl) phosphate:

: Animal testing did not show any carcinogenic effects.

IARC

Group 2B: Possibly carcinogenic to humans

ethylbenzene

Group 2B: Possibly carcinogenic to humans

ACGIH

Confirmed animal carcinogen with unknown relevance to humans

ethylbenzene

OSHA

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

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.

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:**

tris(methylphenyl) phosphate:

Effects on fertility

: Species: Rat, male and female

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Application Route: Oral
Target Organs: Testes
Method: OECD Test Guideline 415

Target Organs: Ovary

1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol:

Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 422

ethylbenzene:

General Toxicity - Parent: No observed adverse effect level:
500 ppm
Method: OECD Test Guideline 416

Components:

tris(methylphenyl) phosphate:

Effects on foetal
development

: Species: Rat, female
Application Route: Oral
General Toxicity Maternal: No-observed-effect level: 20 mg/kg
body weight
Method: OPPTS 870.3700
Result: Teratogenic effects

1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol:

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

ethylbenzene:

General Toxicity Maternal: No observed adverse effect level:
500 ppm
Teratogenicity: No observed adverse effect level: 2,000 ppm
Developmental Toxicity: No observed adverse effect level:
500 ppm

Product:

Reproductive toxicity -
Assessment

: Some evidence of adverse effects on sexual function and
fertility, and/or on development, based on animal experiments.

STOT - single exposure**Components:**

4,4'-methylenebis(2-ethylaniline):

Exposure routes: Ingestion

Target Organs: Liver

Assessment: May cause damage to organs.

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STOT - repeated exposure**Components:**

4,4'-methylenebis(2-ethylaniline):

Exposure routes: Ingestion

Target Organs: Liver

Assessment: Causes damage to organs through prolonged or repeated exposure.

Exposure routes: Ingestion

Target Organs: Kidney

Assessment: May cause damage to organs through prolonged or repeated exposure.

ethylbenzene:

Exposure routes: Inhalation

Target Organs: Lungs, Liver, Kidney, Central nervous system

Assessment: May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity**Components:**

4,4'-methylenebis(2-ethylaniline):

Species: Rat, male and female

LOAEL: 7.5 - 8 mg/kg/d

Application Route: Ingestion

Exposure time: 2,160 h

Number of exposures: 7 d

Method: Subchronic toxicity

Species: Rat, male and female

NOAEL: 90 mg/kg/d

Application Route: Skin contact

Exposure time: 2,160 h

Number of exposures: 5 d

Method: Subchronic toxicity

tris(methylphenyl) phosphate:

Species: Rat, male and female

NOEL: 1000 mg/kg

Application Route: Ingestion

Exposure time: 2,160 h

Method: Subchronic toxicity

1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol:

Species: Rat, male and female

NOAEL: 1000 mg/kg/d

Application Route: Ingestion

Exposure time: 1,176 h

Number of exposures: 7 d

Method: Subacute toxicity

Species: Rat, male and female

NOAEL: 300 mg/kg/d

Application Route: Ingestion

Exposure time: 1,176 h

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Number of exposures: 7 d
Method: Subacute toxicity

ethylbenzene:

Species: Rat, male and female
NOAEL: 75 mg/kg bw
Application Route: oral (gavage)
Exposure time: 28 d
Dose: 75/250/750 mg/kg bw
Group: yes
Method: OECD Test Guideline 407
Target Organs: Liver
Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.
Remarks: Subacute toxicity

Species: Rat, male and female
NOAEL: 75 mg/kg bw
Application Route: oral (gavage)
Exposure time: 90 d
Dose: 75/250/750 mg/kg bw
Group: yes
Method: OECD Test Guideline 408
Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Species: Mouse, male and female
NOAEL: 3.4 mg/l
Application Route: Inhalation
Exposure time: 28 d
Dose: 0,4/1,7/3,4 mg/L
Group: yes
Method: OECD Test Guideline 412

Species: Rat, male and female
NOAEL: 1084
NOAEL: mg/m³
Application Route: inhalation (vapour)
Exposure time: 104 week
Dose: 325/1084/3251 mg/m³
Group: yes
Method: OECD Test Guideline 453

Species: Rat, male and female
NOAEL: 4.74 mg/l
Application Route: Inhalation
Exposure time: 13 week
Dose: 0,47/1,18/2,37/3,55/4,74 mg/L
Group: yes
Method: OECD Test Guideline 413
Target Organs: Liver
Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Species: Mouse, male and female

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NOAEL: 3251
NOAEL: mg/m3
Application Route: Inhalation
Exposure time: 104 week
Dose: 325/1084/3251 mg/m3
Group: yes
Method: OECD Test Guideline 453

Species: Rabbit, male and female
NOAEL: 6.8 mg/l
Application Route: Inhalation
Exposure time: 28 d
Dose: 1,7/3,4/6,8 mg/L
Group: yes
Method: OECD Test Guideline 412

Repeated dose toxicity - : No data available
Assessment

Aspiration toxicity**Components:**

ethylbenzene:
May be fatal if swallowed and enters airways.

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**Product:**

Remarks: No data available

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

4,4'-methylenebis(2-ethylaniline):

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): 20.6 mg/l
Exposure time: 96 h
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 203

tris(methylphenyl) phosphate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.6 mg/l
Exposure time: 96 h

1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 4,600 mg/l
Exposure time: 96 h
Test Type: flow-through test
Test substance: Fresh water
Method: DIN 38412

LC50 (Leuciscus idus (Golden orfe)): 2,700 mg/l
Exposure time: 48 h
Test Type: static test
Method: DIN 38412

ethylbenzene:

Toxicity to fish : LC50: 4.2 mg/l
Exposure time: 96 h

LC50: 9.2 mg/l
Exposure time: 96 h

LC50: 12.1 mg/l
Exposure time: 96 h

LC50: 5.1 mg/l
Exposure time: 96 h

Components:

4,4'-methylenebis(2-ethylaniline):

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.35 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

tris(methylphenyl) phosphate:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.146 mg/l
Exposure time: 48 h

1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol:

Toxicity to daphnia and other aquatic invertebrates : IC0 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h

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Test Type: static test
Method: Directive 67/548/EEC, Annex V, C.2.

ethylbenzene:
Toxicity to daphnia and other : EC50: 1.81 - 2.38 mg/l
aquatic invertebrates Exposure time: 48 h

Components:

tris(methylphenyl) phosphate:
Toxicity to algae : ErC50: 0.4042 mg/l
Exposure time: 72 h

1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol:
Toxicity to algae : EC50 (Other): 150.67 mg/l
Exposure time: 72 h
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.3.

ethylbenzene:
Toxicity to algae : IC50: 4.6 mg/l
Exposure time: 72 h

EC50: 3.6 mg/l
Exposure time: 96 h

NOEC: 3.4 mg/l
Exposure time: 96 h

EC50: 7.7 mg/l
Exposure time: 96 h

Components:

4,4'-methylenebis(2-ethylaniline):
M-Factor (Acute aquatic : 1
toxicity)

Components:

tris(methylphenyl) phosphate:
Toxicity to fish (Chronic : NOEC (Other): 0.01 mg/l
toxicity) Exposure time: 28 d

1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol:
Toxicity to fish (Chronic : GLP: yes
toxicity)

ethylbenzene:
Toxicity to fish (Chronic : NOEL: 0.96 mg/l
toxicity) Exposure time: 7 d

Components:

4,4'-methylenebis(2-ethylaniline):
Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 0.00525 mg/l
aquatic invertebrates Exposure time: 21 d
(Chronic toxicity) Test Type: semi-static test

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Test substance: Fresh water
Method: OECD Test Guideline 211

tris(methylphenyl) phosphate:
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.1 mg/l
Exposure time: 21 d

1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol:
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

Components:

4,4'-methylenebis(2-ethylaniline):
M-Factor (Chronic aquatic toxicity) : 10

Components:

tris(methylphenyl) phosphate:
Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l
Exposure time: 3 h

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment

Components:

4,4'-methylenebis[N-sec-butylaniline]:
Acute aquatic toxicity : Very toxic to aquatic life.

ethylbenzene:
Acute aquatic toxicity : This product has no known ecotoxicological effects.

Components:

4,4'-methylenebis[N-sec-butylaniline]:
Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

ethylbenzene:
Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

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Persistence and degradability**Components:**

tris(methylphenyl) phosphate:

Biodegradability : Result: Not readily biodegradable.
 Biodegradation: 24.2 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301D

1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol:

Biodegradability : Inoculum: activated sludge
 Concentration: 107 mg/l
 Result: Inherently biodegradable.
 Biodegradation: 36 %
 Exposure time: 28 d
 Method: OECD Test Guideline 302B

Inoculum: Domestic sewage
 Concentration: 30 mg/l
 Result: Not readily biodegradable.
 Biodegradation: 9 %
 Exposure time: 28 d
 Method: Directive 67/548/EEC Annex V, C.4.D.

ethylbenzene:

Biodegradability : Result: Readily biodegradable.
 Biodegradation: > 60 %
 Exposure time: 28 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

Components:

1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol:

Stability in water : Method: OECD Test Guideline 111
 GLP: yes
 Remarks: see user defined free text

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Photodegradation : No data available

Impact on Sewage Treatment : No data available

Bioaccumulative potential**Components:**

4,4'-methylenebis[N-sec-butylaniline]:

Bioaccumulation : Bioconcentration factor (BCF): 4,700

ethylbenzene:

Bioaccumulation : Bioconcentration factor (BCF): 1.9

Components:

tris(methylphenyl) phosphate:

Partition coefficient: n-octanol/water : log Pow: 5.93

4,4'-methylenebis[N-sec-butylaniline]:

Partition coefficient: n-octanol/water : log Pow: 6.08
Method: QSAR

1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol:

Partition coefficient: n-octanol/water : log Pow: -2.08 (25 °C)

ethylbenzene:

Partition coefficient: n-octanol/water : log Pow: 3.15

Mobility in soil

Mobility : No data available

Components:

tris(methylphenyl) phosphate:

Distribution among environmental compartments : Koc: 4.31
Method: OECD Test Guideline 121

4,4'-methylenebis[N-sec-butylaniline]:

Distribution among environmental compartments : Koc: 4.91
Method: QSAR

ethylbenzene:

Distribution among environmental compartments : Koc: 520
Stability in soil : No data available

Other adverse effects

Environmental fate and pathways : No data available

Results of PBT and vPvB : No data available

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assessment

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 with long lasting effects.

Global warming potential (GWP) : No data available

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 Regulations****IATA**

UN/ID No. : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
(DIETHYL METHYLENE DIANILINE, TRICRESYL PHOSPHATE)
Class : 9
Packing group : III
Labels : Miscellaneous

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Packing instruction (cargo aircraft) : 964
Packing instruction (passenger aircraft) : 964

IMDG

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DIETHYL METHYLENE DIANILINE, TRICRESYL PHOSPHATE)
Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Marine pollutant : yes

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. (DIETHYL METHYLENE DIANILINE, TRICRESYL PHOSPHATE)
Class : 9
Packing group : III
Labels : CLASS 9
ERG Code : 171
Marine pollutant : yes(DIETHYL METHYLENE DIANILINE)

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)
xylenes	1330-20-7	100	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Acute toxicity (any route of exposure)
Respiratory or skin sensitisation
Germ cell mutagenicity
Carcinogenicity
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)

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

ethylbenzene	100-41-4	0.2437 %
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This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

California Prop. 65

WARNING: This product can expose you to chemicals including ethylbenzene, which is/are known to the State of California to cause cancer, and methanol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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

DSL	: This product contains one or several components listed in the Canadian NDSL.
AICS	: On the inventory, or in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory
ENCS	: 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), KECl (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

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

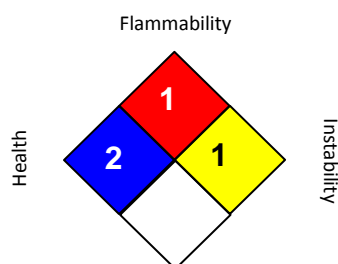
No substances are subject to a Significant New Use Rule.

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

HEALTH	*	2
FLAMMABILITY		1
PHYSICAL HAZARD		1

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.

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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 / TWA : 8-hour time weighted average

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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.

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