SAFETY DATA SHEET

DOW CHEMICAL COMPANY LIMITED

Safety Data Sheet according to Reg. (EU) No 453/2010

Product name: DURAMOULD™ ET 30A Yellow Polyol

Revision Date: 09.12.2014
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DOW CHEMICAL COMPANY LIMITED encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers
Product name: DURAMOULD™ ET 30A Yellow Polyol

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Component(s) for the manufacture of urethane polymers. For industrial use.

1.3 Details of the supplier of the safety data sheet
COMPANY IDENTIFICATION
DOW CHEMICAL COMPANY LIMITED
DIAMOND HOUSE, LOTUS PARK,
KINGSBURY CRESCENT,
STAINES
England
TW18 3AG
UNITED KINGDOM

Customer Information Number: 0203 139 4000
SDSQuestion@dow.com

1.4 EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 0031 115 694 982
Local Emergency Contact: 00 31 115 69 4982

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008:
Skin sensitisation - Category 1 - H317
Chronic aquatic toxicity - Category 2 - H411
For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification according to EU Directives 67/548/EEC or 1999/45/EC:
Dangerous for the environment - R51/53
For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008:

Hazard pictograms

Signal word: WARNING

Hazard statements

H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P280	Wear protective gloves/ protective clothing.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P273	Avoid release to the environment.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P391	Collect spillage.
P501	Dispose of contents and container to licensed, permitted incinerator, or other thermal destruction device.

2.3 Other hazards

no data available

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixture

This product is a mixture.

CASRN / EC-No. / Index-No.	REACH Registration Number	Concentration	Component	Classification: REGULATION (EC) No 1272/2008
CASRN 70775-94-9 **EC-No.** 615-163-9 **Index-No.** –	–	40.0 - < 60.0 %	Sulfonic Acids, C10-18-Alkane, ph Esters	Not classified

CASRN Confidential **EC-No.** Polymer **Index-No.** –	_	30.0 - < 50.0 %	Polyether polyol	Not classified
CASRN 68479-98-1 **EC-No.** 612-130-00-0 **Index-No.** 612-130-00-0	01-2119486805-25	5.0 - < 10.0 %	diethylmethylbenzenediamine	Acute Tox. - 4 - H302 Acute Tox. - 4 - H312 Eye Irrit. - 2 - H319 STOT RE - 2 - H373 Aquatic Acute - 1 - H400 Aquatic Chronic - 1 - H410
CASRN 125643-61-0 **EC-No.** 406-040-9 **Index-No.** 607-530-00-7	_	0.25 - < 1.0 %	A mixture of isomers of: C7-9-alkyl 3-(3,5-di-trans-butyl-4-hydroxyphenyl)propionate	Aquatic Chronic - 4 - H413
CASRN 41556-26-7 **EC-No.** 255-437-1 **Index-No.** –	_	0.1 - < 1.0 %	Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester	Skin Sens. - 1A - H317 Aquatic Acute - 1 - H400 Aquatic Chronic - 1 - H410
CASRN 82919-37-7 **EC-No.** 280-060-4 **Index-No.** –	_	0.1 - < 1.0 %	Decanedioic acid, methyl 1,2,2,6,6-pentamethyl-4-piperidinyl ester	Skin Sens. - 1 - H317 Aquatic Acute - 1 - H400 Aquatic Chronic - 1 - H410
CASRN 77-58-7 **EC-No.** 201-039-8 **Index-No.** –	01-2119496068-27	0.1 - < 0.25 %	Dibutyltin dilaurate	Skin Corr. - 1C - H314 Eye Dam. - 1 - H318 Skin Sens. - 1B - H317 Muta. - 2 - H341 Repr. - 1B - H360 STOT SE - 1 - H370 STOT RE - 1 - H372 Aquatic Acute - 1 - H400 Aquatic Chronic - 1 - H410

If present in this product, any not classified components disclosed above for which no country specific OEL value(s) is(are) indicated under Section 8, are being disclosed as voluntarily disclosed components.
For the full text of the H-Statements mentioned in this Section, see Section 16.

CASRN / EC-No. / Index-No.	Concentration	Component	Classification: 67/548/EEC
CASRN 70775-94-9 **EC-No.** 615-163-9 **Index-No.** –	40.0 - < 60.0 %	Sulfonic Acids, C10-18-Alkane, ph Esters	Not classified
CASRN Confidential **EC-No.** Polymer **Index-No.** –	30.0 - < 50.0 %	Polyether polyol	Not classified
CASRN 68479-98-1 **EC-No.** 612-130-00-0 **Index-No.** 612-130-00-0	5.0 - < 10.0 %	diethylmethylbenzene diamine	Xn - R21/22 - R48/22 Xi - R36 N - R50 - R53
CASRN 125643-61-0 **EC-No.** 406-040-9 **Index-No.** 607-530-00-7	0.25 - < 1.0 %	A mixture of isomers of: C7-9-alkyl 3-(3,5-di-trans-butyl-4-hydroxyphenyl)propionate	R53
CASRN 41556-26-7 **EC-No.** 255-437-1 **Index-No.** –	0.1 - < 1.0 %	Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester	R43 N - R50/53
CASRN 82919-37-7 **EC-No.** 280-060-4 **Index-No.** –	0.1 - < 1.0 %	Decanedioic acid, methyl 1,2,2,6,6-pentamethyl-4-piperidinyl ester	R43 N - R50/53
CASRN 77-58-7 **EC-No.** 201-039-8 **Index-No.** –	0.1 - < 0.25 %	Dibutyltin dilaurate	C - R34 R43 T - Repr.Cat.2 - R60 T - Repr.Cat.2 - R61 Mut.Cat.3 - R68 T - R48/25 N - R50/53

If present in this product, any not classified components disclosed above for which no country specific OEL value(s) is(are) indicated under Section 8, are being disclosed as voluntarily disclosed components.
For the full text of the R-phrases mentioned in this Section, see Section 16.

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures
General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

4.2 Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

4.3 Indication of any immediate medical attention and special treatment needed
Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5. FIREFIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media: Do not use direct water stream. May spread fire.

5.2 Special hazards arising from the substance or mixture
Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

5.3 Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound

from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Isolate area. Refer to section 7, Handling, for additional precautionary measures. Keep unnecessary and unprotected personnel from entering the area. Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

6.2 Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.

6.3 Methods and materials for containment and cleaning up: Contain spilled material if possible. Absorb with materials such as: Dirt. Sand. Sawdust. Collect in suitable and properly labeled containers. Wash the spill site with water. See Section 13, Disposal Considerations, for additional information.

6.4 Reference to other sections: References to other sections, if applicable, have been provided in the previous sub-sections.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling: Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Keep container closed. This material is hygroscopic in nature. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

7.2 Conditions for safe storage, including any incompatibilities: Protect from atmospheric moisture. Store in a dry place. Avoid prolonged exposure to heat and air. Store in the following material(s): Carbon steel. Stainless steel. Polypropylene. Polyethylene-lined container. Teflon. Glass-lined container. Aluminum. Plasite 3066 lined container. Plasite 3070 lined container. 316 stainless steel. See Section 10 for more specific information.

Storage stability

Storage temperature: **Storage Period:**

0 - 30 °C 12 Month

7.3 Specific end use(s): See the technical data sheet on this product for further information.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
diethylmethylbenzenediamine	Dow IHG	TWA	0.02 ppm
	Dow IHG	TWA	Absorbed via skin
Dibutyltin dilaurate	ACGIH	TWA	0.1 mg/m3 , Tin
	ACGIH	TWA	Absorbed via skin
	ACGIH	STEL	0.2 mg/m3 , Tin
	ACGIH	STEL	Absorbed via skin
	GB EH40	TWA	Absorbed via skin
	GB EH40	STEL	Absorbed via skin
	GB EH40	TWA	0.1 mg/m3 , Tin
	GB EH40	STEL	0.2 mg/m3 , Tin

8.2 Exposure controls
Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent.

Skin protection

Hand protection: Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk

assessment process. For most conditions, no respiratory protection should be needed; however, if handling at elevated temperatures without sufficient ventilation, use an approved air-purifying respirator.
Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.

Environmental exposure controls
See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	
Physical state	Liquid.
Color	Yellow
Odor	Characteristic
Odor Threshold	No test data available
pH	No test data available
Melting point/range	No test data available
Freezing point	No test data available
Boiling point (760 mmHg)	No test data available
Flash point	**closed cup** > 100 °C *Estimated.*
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Not applicable to liquids
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	No test data available
Relative Vapor Density (air = 1)	No test data available
Relative Density (water = 1)	1 - 1.04 at 20 °C / 20 °C *ASTM D891*
Water solubility	Partially soluble
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Kinematic Viscosity	No test data available
Explosive properties	Not explosive
Oxidizing properties	No

9.2 Other information

Molecular weight	No test data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity: no data available

10.2 Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.

10.3 Possibility of hazardous reactions: Will not occur by itself.

10.4 Conditions to avoid: Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

10.5 Incompatible materials: Avoid contact with oxidizing materials. Avoid contact with: Strong acids. Strong bases. Avoid contact with metals such as: Brass. Zinc. Copper. Avoid unintended contact with isocyanates. The reaction of polyols and isocyanates generates heat.

10.6 Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon dioxide. Alcohols. Ethers. Hydrocarbons. Ketones. Polymer fragments.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

11.1 Information on toxicological effects
Acute toxicity

Acute oral toxicity
Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

As product: Single dose oral LD50 has not been determined.
LD50, rat, > 2,000 mg/kg Estimated.

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.
LD50, rabbit, > 2,000 mg/kg Estimated.

Acute inhalation toxicity
At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. Vapor from heated material may cause respiratory irritation.
As product: The LC50 has not been determined.

Skin corrosion/irritation
Prolonged exposure not likely to cause significant skin irritation.

Serious eye damage/eye irritation

May cause slight eye irritation.

Sensitization
Contains component(s) which have caused allergic skin sensitization in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Contains component(s) which have been reported to cause effects on the following organs in animals:
Liver.
Pancreas.
Eye.
Thyroid.

Carcinogenicity
Diethyltoluenediamine (DETDA) has caused cancer in long-term animal studies. Increased numbers of tumors in the liver, thyroid and possibly the mammary glands were observed in rats given DETDA in their diet at exaggerated doses for 2 years.

Teratogenicity
Contains component(s) which caused birth defects in laboratory animals.

Reproductive toxicity
Contains component(s) which have interfered with fertility in animal studies. In animal studies on component(s), effects on reproduction were seen only at doses that produced significant toxicity to the parent animals.

Mutagenicity
Contains component(s) which were negative in some in vitro genetic toxicity studies and positive in others. Genetic toxicity studies in animals were negative for component(s) tested.

Aspiration Hazard
Based on available information, aspiration hazard could not be determined.

COMPONENTS INFLUENCING TOXICOLOGY:

Sulfonic Acids, C10-18-Alkane, ph Esters
Acute inhalation toxicity
The LC50 has not been determined.

Polyether polyol
Acute inhalation toxicity
The LC50 has not been determined.

diethylmethylbenzenediamine
Acute inhalation toxicity
The LC50 value is greater than the Maximum Attainable Concentration.

A mixture of isomers of: C7-9-alkyl 3-(3,5-di-trans-butyl-4-hydroxyphenyl)propionate
Acute inhalation toxicity

The LC50 has not been determined.

Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester

Acute inhalation toxicity
The LC50 has not been determined.

Dibutyltin dilaurate

Acute inhalation toxicity
The LC50 has not been determined.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

12.1 Toxicity

Sulfonic Acids, C10-18-Alkane, ph Esters

Acute toxicity to fish
Material is not classified as dangerous to aquatic organisms.
Toxicity to aquatic species occurs at concentrations above material's water solubility.

Polyether polyol

Acute toxicity to fish
For similar material(s):
Material is not classified as dangerous to aquatic organisms.

diethylmethylbenzenediamine

Acute toxicity to fish
Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species).
LC50, Leuciscus idus (Golden orfe), static test, 48 Hour, 194 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, 0.5 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
ErC50, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate, 100 mg/l, OECD Test Guideline 201

Toxicity to bacteria
EC10, Bacteria, 16 Hour, 170 mg/l

A mixture of isomers of: C7-9-alkyl 3-(3,5-di-trans-butyl-4-hydroxyphenyl)propionate

Acute toxicity to fish
Toxicity to aquatic species occurs at concentrations above material's water solubility.

Toxicity to bacteria
EC50, activated sludge, Respiration inhibition, 3 Hour, > 100 mg/l, OECD 209 Test

Toxicity to soil-dwelling organisms
NOEC, Earthworm, Lumbricus terrestris, 14 d, survival, 1,000 mg/kg

Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester

Acute toxicity to fish
Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species).
LC50, Lepomis macrochirus (Bluegill sunfish), static test, 96 Hour, 0.97 mg/l

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), 24 Hour, 20 mg/l

Toxicity to bacteria
EC50, activated sludge, 3 Hour, > 100 mg/l

Decanedioic acid, methyl 1,2,2,6,6-pentamethyl-4-piperidinyl ester

Acute toxicity to fish
Based on information for a similar material:
Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species).
Based on information for a similar material:
LC50, Lepomis macrochirus (Bluegill sunfish), static test, 96 Hour, 0.97 mg/l, Method Not Specified.

Acute toxicity to aquatic invertebrates
Based on information for a similar material:
EC50, Daphnia magna (Water flea), 24 Hour, 20 mg/l, Method Not Specified.

Dibutyltin dilaurate

Acute toxicity to fish
Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species).
LC50, Danio rerio (zebra fish), static test, 96 Hour, >3.1 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, water flea Daphnia magna, Static, 48 Hour, <0.463 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
EC50, Algae (Desmodesmus subspicatus), 72 Hour, Growth rate inhibition, >1 mg/l, OECD Test Guideline 201

Toxicity to bacteria
EC50, activated sludge, 3 Hour, Respiration rates., 1,000 mg/l, activated sludge test (OECD 209)

12.2 Persistence and degradability

Sulfonic Acids, C10-18-Alkane, ph Esters

Biodegradability: For the major component(s): Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability).
10-day Window: Fail
Biodegradation: 61 %
Exposure time: 47 d
Method: OECD Test Guideline 301F or Equivalent

Polyether polyol

Biodegradability: Most polyols are expected to degrade only slowly in the environment.

diethylmethylbenzenediamine

Biodegradability: Material is not readily biodegradable according to OECD/EEC guidelines.
10-day Window: Fail
Biodegradation: < 1 %
Exposure time: 28 d
Method: OECD Test Guideline 301D or Equivalent

A mixture of isomers of: C7-9-alkyl 3-(3,5-di-trans-butyl-4-hydroxyphenyl)propionate

Biodegradability: Material is not readily biodegradable according to OECD/EEC guidelines.
10-day Window: Fail
Biodegradation: 2 - 4 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent

Stability in Water (1/2-life)
Hydrolysis, half-life, 180 d, pH 8, Half-life Temperature 25 °C, Estimated.

Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester

Biodegradability: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.
10-day Window: Fail
Biodegradation: < 70 %
Exposure time: 28 d
Method: OECD Test Guideline 301E or Equivalent

Decanedioic acid, methyl 1,2,2,6,6-pentamethyl-4-piperidinyl ester

Biodegradability: Based on information for a similar material: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.
10-day Window: Fail
Biodegradation: < 70 %
Exposure time: 28 d
Method: OECD Test Guideline 301E or Equivalent

Dibutyltin dilaurate

Biodegradability: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.
10-day Window: Fail
Biodegradation: 23 %
Exposure time: 39 d
Method: OECD Test Guideline 301F or Equivalent

12.3 Bioaccumulative potential

Sulfonic Acids, C10-18-Alkane, ph Esters

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 5.7 - 11.3 Measured
Bioconcentration factor (BCF): 7 - 212

Polyether polyol

Bioaccumulation: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

diethylmethylbenzenediamine

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 1.17 Measured
Bioconcentration factor (BCF): 3 Estimated.

A mixture of isomers of: C7-9-alkyl 3-(3,5-di-trans-butyl-4-hydroxyphenyl)propionate

Bioaccumulation: Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7).
Partition coefficient: n-octanol/water(log Pow): 7.93 at 25 °C Estimated.
Bioconcentration factor (BCF): 1,200 Estimated.

Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 0.37 at 25 °C OECD Test Guideline 107 or Equivalent

Decanedioic acid, methyl 1,2,2,6,6-pentamethyl-4-piperidinyl ester

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 5.14 Estimated.
Bioconcentration factor (BCF): 180 Estimated.

Dibutyltin dilaurate

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 4.44 at 20.8 °C OECD Test Guideline 107
Bioconcentration factor (BCF): 2.91 Cyprinus carpio (Carp) 7 d Measured

12.4 Mobility in soil

Sulfonic Acids, C10-18-Alkane, ph Esters

Expected to be relatively immobile in soil (Koc > 5000).
Partition coefficient(Koc): > 5000

Polyether polyol

No relevant data found.

diethylmethylbenzenediamine

Potential for mobility in soil is low (Koc between 500 and 2000).
Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Partition coefficient(Koc): 551.2 Estimated.

A mixture of isomers of: C7-9-alkyl 3-(3,5-di-trans-butyl-4-hydroxyphenyl)propionate

Expected to be relatively immobile in soil (Koc > 5000).
Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.
Partition coefficient(Koc): > 5000 Estimated.

Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester

Expected to be relatively immobile in soil (Koc > 5000).
Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.
Partition coefficient(Koc): > 5000 Estimated.

Decanedioic acid, methyl 1,2,2,6,6-pentamethyl-4-piperidinyl ester

Expected to be relatively immobile in soil (Koc > 5000).
Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.
Partition coefficient(Koc): > 5000 Estimated.

Dibutyltin dilaurate

No relevant data found.

12.5 Results of PBT and vPvB assessment

Sulfonic Acids, C10-18-Alkane, ph Esters

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Polyether polyol

This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).

diethylmethylbenzenediamine

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

A mixture of isomers of: C7-9-alkyl 3-(3,5-di-trans-butyl-4-hydroxyphenyl)propionate

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Decanedioic acid, methyl 1,2,2,6,6-pentamethyl-4-piperidinyl ester

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Dibutyltin dilaurate

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

Sulfonic Acids, C10-18-Alkane, ph Esters

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Polyether polyol

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

diethylmethylbenzenediamine

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

A mixture of isomers of: C7-9-alkyl 3-(3,5-di-trans-butyl-4-hydroxyphenyl)propionate

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Decanedioic acid, methyl 1,2,2,6,6-pentamethyl-4-piperidinyl ester

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Dibutyltin dilaurate

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Do not dump into any sewers, on the ground, or into any body of water. This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 2008/98/EC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

SECTION 14. TRANSPORT INFORMATION

Classification for ROAD and Rail transport (ADR/RID):

14.1	**UN number**	UN 3082
14.2	**Proper shipping name**	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Diethylmethylbenzenediamine, Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester)
14.3	**Class**	9
14.4	**Packing group**	III
14.5	**Environmental hazards**	Diethylmethylbenzenediamine, Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester

14.6	**Special precautions for user**	Hazard identification No: 90

Classification for SEA transport (IMO-IMDG):

14.1	**UN number**	UN 3082
14.2	**Proper shipping name**	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Diethylmethylbenzenediamine, Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester)
14.3	**Class**	9
14.4	**Packing group**	III
14.5	**Environmental hazards**	Diethylmethylbenzenediamine, Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester
14.6	**Special precautions for user**	EmS: F-A, S-F
14.7	**Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code**	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

14.1	**UN number**	UN 3082
14.2	**Proper shipping name**	Environmentally hazardous substance, liquid, n.o.s.(Diethylmethylbenzenediamine, Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl) ester)
14.3	**Class**	9
14.4	**Packing group**	III
14.5	**Environmental hazards**	Not applicable
14.6	**Special precautions for user**	No data available.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15. REGULATORY INFORMATION

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

REACh Regulation (EC) No 1907/2006
This product contains only components that have been either pre-registered, registered, are exempt from registration or are regarded as registered according to Regulation (EC) No. 1907/2006

(REACH)., The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer´s/user´s responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

Restrictions on the manufacture, placing on the market and use:

The following substance/s contained in this product is/are subject through Annex XVII of REACH regulation to restrictions on the manufacture, placing on the market and use when present in certain dangerous substances, mixtures and articles. Users of this product have to comply with the restrictions placed upon it by the aforementioned provision.

CAS-No.: 77-58-7	Name: Dibutyltin dilaurate

Restriction status: listed in REACH Annex XVII
Restricted uses: See Commission Regulation (EU) No 276/2010 for Conditions of restriction

15.2 Chemical Safety Assessment

not applicable

SECTION 16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H341	Suspected of causing genetic defects.
H360	May damage fertility or the unborn child.
H370	Causes damage to organs if swallowed.
H372	Causes damage to organs through prolonged or repeated exposure if swallowed.
H373	May cause damage to organs through prolonged or repeated exposure if swallowed.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Full text of R-phrases referred to under sections 2 and 3

R21/22	Harmful in contact with skin and if swallowed.
R34	Causes burns.
R36	Irritating to eyes.
R43	May cause sensitisation by skin contact.
R48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed.
R48/25	Toxic: danger of serious damage to health by prolonged exposure if swallowed.
R50	Very toxic to aquatic organisms.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R53	May cause long-term adverse effects in the aquatic environment.
R60	May impair fertility.
R61	May cause harm to the unborn child.
R68	Possible risk of irreversible effects.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008
Skin Sens. - 1 - H317 - Calculation method
Aquatic Chronic - 2 - H411 - Calculation method

Product Literature
Additional information on this product may be obtained by calling your sales or customer service contact.

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Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

Absorbed via skin	Absorbed via skin
ACGIH	USA. ACGIH Threshold Limit Values (TLV)
Dow IHG	Dow Industrial Hygiene Guideline
GB EH40	UK. EH40 WEL - Workplace Exposure Limits
STEL	Short-term exposure limit
TWA	8-hour, time-weighted average

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW CHEMICAL COMPANY LIMITED urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.