



Safety Data Sheet

Dow Chemical Company Ltd

Product Name: BETAPRIME (TM) 5404

Revision Date: 2010/04/07

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Dow Chemical Company Ltd 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.

1. Identification of the substance/preparation and of the company/undertaking

Product Name

BETAPRIME (TM) 5404

Use of the substance/preparation

A primer -- For use in automotive applications.

COMPANY IDENTIFICATION

Dow Chemical Company Ltd
Diamond House, Lotus Park
Kingsbury Crescent
TW18 3AG Staines, Middlesex
United Kingdom

Customer Information Number: 0203 139 4000

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EMERGENCY TELEPHONE NUMBER

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2. Hazards Identification

Highly flammable.

May cause sensitization by inhalation and skin contact.

Irritating to eyes, respiratory system and skin.

Vapours may cause drowsiness and dizziness.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. Composition/information on ingredients

Component	Amount	Classification:	CAS #	EC #
Butanone; ethyl methyl ketone	> 55.0 - < 65.0 %	F: R11; Xi: R36; R66; R67	78-93-3	201-159-0

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Diphenylmethane Diisocyanate, isomers and homologues	>= 5.0 - < 10.0 %	Xn: R20; Xi: R36/37/38; R42/43	9016-87-9	618-498-9
Diphenylmethane-4,4'- diisocyanate (MDI)	>= 1.0 - < 5.0 %	Xn: R20; Xi: R36/37/38; R42/43	101-68-8	202-966-0
Solvent naphtha (petroleum), light arom.; Low boiling point naphtha - unspecified	< 2.5 %	R10; Xi: R37; Xn: R65; N: R51/53	64742-95-6	265-199-0
Ethyl acetate	> 5.0 - < 15.0 %	F: R11; Xi: R36; R66; R67	141-78-6	205-500-4
Dibutyltin dilaurate	< 0.5 %	Repr.Cat.1: R60, R61; T: R48/25; Xn: R68, R22; Xi: R36; N: R51/53	77-58-7	201-039-8

See Section 16 for full text of R-phrases.

4. First-aid measures

Eye Contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

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. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

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

Notes to Physician: Maintain adequate ventilation and oxygenation of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Medical Conditions Aggravated by Exposure: Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome). Skin contact may aggravate preexisting dermatitis.

Emergency Personnel Protection: 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.

5. Fire Fighting Measures

Extinguishing Media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Water is not recommended, but may be applied in large quantities as a fine spray

when other extinguishing agents are not available. 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. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Avoid accumulation of water. Product may be carried across water surface spreading fire or contacting an ignition source. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out. 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.

Unusual Fire and Explosion Hazards: Product reacts with water. Reaction may produce heat and/or gases. Container may rupture from gas generation in a fire situation. Electrically ground and bond all equipment. Flammable mixtures of this product are readily ignited even by static discharge. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Flammable mixtures may exist within the vapor space of containers at room temperature. Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9. Dense smoke is produced when product burns.

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. Isocyanates. Hydrogen cyanide. Carbon monoxide. Carbon dioxide.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Absorb with materials such as: Cat litter. If available, use foam to smother or suppress. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Ventilate area of leak or spill. Material becomes slippery when wet.

Environmental Precautions: Dike to prevent contamination of ground and surface water, then transfer into closed containers.

7. Handling and Storage

Handling

General Handling: No smoking, open flames or sources of ignition in handling and storage area. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Never use air pressure for transferring product. Electrically ground and bond all equipment. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. This product is a poor conductor of electricity and can become electrostatically charged, even in bonded or grounded equipment. If sufficient charge is accumulated, ignition of flammable mixtures can occur. Handling operations that can promote accumulation of static charges include but are not limited to mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations.

Storage

Keep container tightly closed and in a well-ventilated place.

Storage temperature: 5 - 35 °C

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Diphenylmethane-4,4'-diisocyanate (MDI)	ACGIH	TWA	0.005 ppm
	UK WEL	TWA as NCO	0.02 mg/m3 SEN
	UK WEL	STEL as NCO	0.07 mg/m3 SEN
	Ireland OELV	TWA as NCO	0.02 mg/m3 SEN
	Ireland OELV	STEL as NCO	0.07 mg/m3 SEN
Butanone; ethyl methyl ketone	Ireland OELV	TWA	600 mg/m3 200 ppm SKIN Indicative OELV
	Ireland OELV	STEL	900 mg/m3 300 ppm SKIN Indicative OELV
	ACGIH	TWA	200 ppm BEI
	ACGIH	STEL	300 ppm BEI
	EU IOELV	TWA	600 mg/m3 200 ppm
	EU IOELV	STEL	900 mg/m3 300 ppm
	UK WEL	TWA	600 mg/m3 200 ppm SKIN
	UK WEL	STEL	899 mg/m3 300 ppm SKIN
Ethyl acetate	Ireland OELV	TWA	200 ppm
	ACGIH	TWA	400 ppm
	UK WEL	TWA	200 ppm
	UK WEL	STEL	400 ppm
	Ireland OELV	STEL	400 ppm
Dibutyltin dilaurate	ACGIH	TWA as Sn	0.1 mg/m3 SKIN
	ACGIH	STEL as Sn	0.2 mg/m3 SKIN
	Ireland OELV	TWA as Sn	0.1 mg/m3 SKIN
	Ireland OELV	STEL as Sn	0.2 mg/m3 SKIN
	UK WEL	TWA as Sn	0.1 mg/m3 SKIN
	UK WEL	STEL as Sn	0.2 mg/m3 SKIN
Diphenylmethane Diisocyanate, isomers and homologues	Ireland OELV	TWA as NCO	0.02 mg/m3 SEN
	Ireland OELV	STEL as NCO	0.07 mg/m3 SEN
	UK WEL	TWA as NCO	0.02 mg/m3 SEN
	UK WEL	STEL as NCO	0.07 mg/m3 SEN

Although some of the fillers used in this product may have exposure guidelines, no exposure would be expected under normal handling conditions because of the physical state of the material.

A BEI notation following the exposure guideline refers to a guidance value for assessing biological monitoring results as an indicator of the uptake of a substance from all routes of exposures.

A "skin" notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.

It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

A "SEN" notation following the exposure guideline refers to the potential to produce sensitization, as confirmed by human or animal data.

Personal Protection

Eye/Face Protection: Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent. If exposure causes eye discomfort, use a full-face respirator. Eye wash fountain should be located in immediate work area.

Skin 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. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Butyl rubber. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Chlorinated polyethylene. Viton. Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Avoid gloves made of: 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.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When atmospheric levels may exceed the exposure guideline, use an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. The odor and irritancy of this material are inadequate to warn of excessive exposure.

9. Physical and Chemical Properties

Physical State	Liquid.
Color	Black
Odor	Characteristic
Odor Threshold	No test data available
Flash Point - Closed Cup	-8 °C <i>Vendor</i>
Flammability (solid, gas)	No
Flammable Limits In Air	Lower: No test data available Upper: No test data available
Autoignition Temperature	No test data available
Vapor Pressure	No test data available
Boiling Point (760 mmHg)	No test data available.
Vapor Density (air = 1)	No test data available

Specific Gravity (H2O = 1)	0.90 <i>Vendor</i>
Freezing Point	No test data available
Melting Point	No test data available
Solubility in water (by weight)	No test data available
pH	No test data available
Molecular Weight	No test data available
Decomposition Temperature	No test data available
Partition coefficient, n-octanol/water (log Pow)	No test data available
Evaporation Rate (Butyl Acetate = 1)	No test data available
Dynamic Viscosity	No test data available
Kinematic Viscosity	No test data available

10. Stability and Reactivity

Stability/Instability

Stable under recommended storage conditions. See Storage, Section 7.

Conditions to Avoid: Some components of this product can decompose at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid. Avoid static discharge. Avoid moisture. Material reacts slowly with water, releasing carbon dioxide which can cause pressure buildup and rupture of closed containers. Elevated temperatures accelerate this reaction.

Incompatible Materials: Avoid contact with: Acids. Alcohols. Amines. Water. Ammonia. Bases. Strong oxidizers. Diisocyanates react with many materials and the rate of reaction increases with temperature as well as increased contact. Contact is increased by stirring or if the other material mixes with the diisocyanate. Diisocyanates are not soluble in water and sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat.

Hazardous Polymerization

Will not occur by itself.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials. Gases are released during decomposition.

11. Toxicological Information

Acute Toxicity

Ingestion

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. Single dose oral LD50 has not been determined.

Dermal

Prolonged skin contact is unlikely to result in absorption of harmful amounts. The dermal LD50 has not been determined.

Inhalation

Vapor concentrations are attainable which could be hazardous on single exposure. May cause respiratory irritation and central nervous system depression. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. May cause nausea and vomiting. For some component(s): Excessive exposure may cause irritation to upper respiratory

tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. Decreased lung function has been associated with overexposure to isocyanates. This material contains mineral and/or inorganic fillers. There is essentially no potential for inhalation exposure to these fillers incidental to industrial handling due to the physical state.

Eye damage/eye irritation

May cause moderate eye irritation. May cause moderate corneal injury. Vapor may cause eye irritation experienced as mild discomfort and redness.

Skin corrosion/irritation

Prolonged contact may cause moderate skin irritation with local redness. May cause drying and flaking of the skin. May stain skin.

Sensitization**Skin**

A component in this mixture has been shown to be a skin sensitizer. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

Respiratory

A component in this mixture may cause an allergic respiratory response. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

Repeated Dose Toxicity

Methyl ethyl ketone has caused liver effects in laboratory animals exposed by inhalation to high concentrations. Methyl ethyl ketone is probably not neurotoxic in itself but it potentiates the neurotoxicity of methyl-n-butyl ketone and n-hexane. Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols. Contains component(s) which have been reported to cause effects on the following organs in animals: Liver. Respiratory tract.

Chronic Toxicity and Carcinogenicity

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

Developmental Toxicity

In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother. Contains component(s) which did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother. Contains component(s) which have been linked to birth defects in humans.

Reproductive Toxicity

Contains component(s) which have interfered with reproduction and/or fertility in humans.

Genetic Toxicology

Contains component(s) which were negative in some in vitro genetic toxicity studies and positive in others. Contains component(s) which were negative in animal genetic toxicity studies.

12. Ecological Information

ENVIRONMENTAL FATE

Data for Component: **Butanone; ethyl methyl ketone**

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).

Henry's Law Constant (H): 2.44E-05 atm*m³/mole; 25 °C Measured

Partition coefficient, n-octanol/water (log Pow): 0.29 Measured

Partition coefficient, soil organic carbon/water (Koc): 3.8 Estimated.

Persistence and Degradability

Material is expected to be readily biodegradable.

Data for Component: Diphenylmethane Diisocyanate, isomers and homologues**Movement & Partitioning**

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Persistence and Degradability

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

Data for Component: Diphenylmethane-4,4'-diisocyanate (MDI)**Movement & Partitioning**

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Persistence and Degradability

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

Data for Component: Solvent naphtha (petroleum), light arom.; Low boiling point naphtha - unspecified**Movement & Partitioning**

For the major component(s): Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). Potential for mobility in soil is low (Koc between 500 and 2000). For the minor component(s): Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): No test data available:

Persistence and Degradability

For the major component(s): Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. For some 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.

Data for Component: Ethyl acetate**Movement & Partitioning**

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).

Henry's Law Constant (H): 1.2E-04 atm*m3/mole; 25 °C Measured

Partition coefficient, n-octanol/water (log Pow): 0.73 Measured

Partition coefficient, soil organic carbon/water (Koc): 3 Estimated.

Bioconcentration Factor (BCF): 30; fish; Measured

Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method
100 %	28 d	OECD 301D Test

Data for Component: Dibutyltin dilaurate**Movement & Partitioning**

Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). Potential for mobility in soil is low (Koc between 500 and 2000).

Partition coefficient, n-octanol/water (log Pow): 3.12 Measured

Partition coefficient, soil organic carbon/water (Koc): 1,187 Measured

Bioconcentration Factor (BCF): 120; common carp (Cyprinus carpio); Measured

Persistence and Degradability

For similar material(s): Material is not readily biodegradable according to OECD/EEC guidelines.

ECOTOXICITY**Data for Component: Butanone; ethyl methyl ketone**

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

Fish Acute & Prolonged Toxicity

LC50, bluegill (*Lepomis macrochirus*): 1,690 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, water flea *Daphnia magna*, immobilization: 5,091 mg/l

Aquatic Plant Toxicity

EC50, alga *Scenedesmus* sp., biomass growth inhibition: 4,300 mg/l

Data for Component: Diphenylmethane Diisocyanate, isomers and homologues

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

Toxicity to Soil Dwelling Organisms

LC50, Earthworm *Eisenia foetida*, adult, 14 d: > 1,000 mg/kg

Data for Component: Diphenylmethane-4,4'-diisocyanate (MDI)

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

Toxicity to Soil Dwelling Organisms

LC50, Earthworm *Eisenia foetida*, adult, 14 d: > 1,000 mg/kg

Data for Component: Solvent naphtha (petroleum), light arom.: Low boiling point naphtha - unspecified

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

Fish Acute & Prolonged Toxicity

LC50, rainbow trout (*Oncorhynchus mykiss*), 96 h: 9.22 mg/l

Toxicity to Above Ground Organisms

dietary LC50, bobwhite (*Colinus virginianus*): > 6,500 ppm

oral LD50, bobwhite (*Colinus virginianus*): > 2,250 mg/kg

Data for Component: Ethyl acetate

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

Fish Acute & Prolonged Toxicity

LC50, rainbow trout (*Oncorhynchus mykiss*), 96 h: 320 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, water flea *Daphnia magna*, 48 h, immobilization: 717 mg/l

Aquatic Plant Toxicity

EC50, green alga *Pseudokirchneriella subcapitata* (formerly known as *Selenastrum capricornutum*), biomass growth inhibition: > 2,000 mg/l

Data for Component: Dibutyltin dilaurate

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

Fish Acute & Prolonged Toxicity

LC50, golden orfe (*Leuciscus idus*), static, 48 h: 2 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, water flea *Daphnia magna*: 2.28 mg/l

13. Disposal Considerations

All disposal methods must be in compliance with the EU framework Directives 91/156/EEC, 91/689/EEC and their subsequent adaptations, as implemented in National Laws and Regulations, as well as EU Directives dealing with priority waste streams. Transboundary shipment of wastes must be in compliance with EU Regulation 259/93 and subsequent modifications.

Treatment and disposal methods of used packaging: Empty containers should be recycled or otherwise disposed of by an approved waste management facility. **CONTAMINATED PACKAGING:** Any disposal of contaminated packaging and washings must be in accordance with State, Territory and/or Local government regulations. After container has been cleaned and labelling has been removed, empty containers can be sent for recycling or disposal. If the container is to be reconditioned, the reconditioning company should be made aware of the nature of the original contents.

14. Transport Information

ROAD & RAIL

Proper Shipping Name: COATING SOLUTION

Hazard Class: 3 **ID Number:** UN1139 **Packing Group:** PG II

Classification: F1

Kemler Code: 33

Special Provisions: Special provision 640D

Environmental Hazard: No

OCEAN

Proper Shipping Name: COATING SOLUTION

Hazard Class: 3 **ID Number:** UN1139 **Packing Group:** PG II

EMS Number: F-E,S-E

Marine pollutant.: No

AIR

Proper Shipping Name: COATING SOLUTION

Hazard Class: 3 **ID Number:** UN1139 **Packing Group:** PG II

Cargo Packing Instruction: 307

Passenger Packing Instruction: 305

Environmental Hazard: No

INLAND WATERWAYS

Proper Shipping Name: COATING SOLUTION

Hazard Class: 3 **ID Number:** UN1139 **Packing Group:** PG II

Classification: F1

Kemler Code: 33

Special Provisions: Special provision 640D

Environmental Hazard: No

15. Regulatory Information

European Inventory of Existing Commercial Chemical Substances (EINECS)

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

EC Classification and User Label Information**Hazard Symbol:**

F - Highly flammable.
Xn - Harmful.

Risk Phrases :

R11 - Highly flammable.
R42/43 - May cause sensitization by inhalation and skin contact.
R36/37/38 - Irritating to eyes, respiratory system and skin.
R67 - Vapours may cause drowsiness and dizziness.
R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases :

S23 - Do not breathe vapour/gas/fumes/spray.
S24 - Avoid contact with skin.
S37 - Wear suitable gloves.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S61 - Avoid release to the environment. Refer to special instructions/Safety data sheets.

Contains: Diphenylmethane Diisocyanate, isomers and homologues
Diphenylmethane-4,4'-diisocyanate (MDI)
Dibutyltin dilaurate

Contains isocyanates. See information supplied by the manufacturer.

16. Other Information**Risk-phrases in the Composition section**

R10	Flammable.
R11	Highly flammable.
R20	Harmful by inhalation.
R22	Harmful if swallowed.
R36	Irritating to eyes.
R36/37/38	Irritating to eyes, respiratory system and skin.
R37	Irritating to respiratory system.
R42/43	May cause sensitization by inhalation and skin contact.
R48/25	Toxic: danger of serious damage to health by prolonged exposure if swallowed.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R60	May impair fertility.
R61	May cause harm to the unborn child.
R65	Harmful: May cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.
R68	Possible risks of irreversible effects.

Revision

Identification Number: 83283 / 3005 / Issue Date 2010/04/07 / Version: 4.2

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

Dow Chemical Company Ltd 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

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