HALLIBURTON

# SAFETY DATA SHEET

**according to Regulation (EC) No. 453/2010**

# CRB-7H

**Revision Date:** 15-Sep-2015 **Revision Number:** 14

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

**1.1. Product Identifier**

**Product Name** CRB-7H
**Internal ID Code** HM006516

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

**Recommended Use** Hardener

**1.3. Details of the supplier of the safety data sheet**

Halliburton Energy Services
Halliburton House, Howemoss Place
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
United Kingdom

www.halliburton.com

For further information, please contact
**E-Mail address:** fdunexchem@halliburton.com

**1.4. Emergency telephone number**

+44 8 08 189 0979 / 1-760-476-3961

| **Emergency telephone - §45 - (EC)1272/2008** | |
|---|---|
| **Europe** | **112** |
| **Croatia** | Centar za kontrolu otrovanja (CKO): (+385 1) 23-48-342 (Poison Control Center (PCC) - Institute for Medical Research and Occupational Health) |
| **Cyprus** | +210 7793777 |
| **Denmark** | Poison Control Hotline (DK): +45 82 12 12 12 |
| **France** | ORFILA (FR): + 01 45 42 59 59 |
| **Germany** | Poison Center Berlin (DE): +49 030 30686 790 |
| **Italy** | Poison Center, Milan (IT): +39 02 6610 1029 |
| **Netherlands** | National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals) |
| **Norway** | Poisons Information (NO):+ 47 22 591300 |
| **Poland** | Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97 |
| **Romania** | +40 21 318 36 06 |
| **Spain** | Poison Information Service (ES): +34 91 562 04 20 |
| **United Kingdom** | NHS Direct (UK): +44 0845 46 47 |

## SECTION 2: Hazards Identification

**2.1. Classification of the substance or mixture**

**REGULATION (EC) No 1272/2008**

| | |
|---|---|
| Acute Oral Toxicity | Category 4 - H302 |
| Acute Toxicity - Dermal | Category 4 - H312 |
| Acute Inhalation Toxicity - Vapors | Category 2 - H330 |
| Skin Corrosion / irritation | Category 1 B - H314 |
| Serious Eye Damage / Eye Irritation | Category 1 - H318 |
| Skin Sensitization | Category 1 - H317 |
| Reproductive Toxicity | Category 2 - H361 |

| | |
|---|---|
| Specific Target Organ Toxicity - (Single Exposure) | Category 3 - H335 |
| Chronic Aquatic Toxicity | Chronic 3 - H412 |

## 2.2. Label Elements

**Hazard Pictograms**

**Signal Word** **Danger**

**Hazard Statements**
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
H330 - Fatal if inhaled
H335 - May cause respiratory irritation
H361 - Suspected of damaging fertility or the unborn child
H412 - Harmful to aquatic life with long lasting effects

**Precautionary Statements - EU (§28, 1272/2008)**
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308 + P313 - IF exposed or concerned: Get medical advice/attention

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Isophorone diamine | 2855-13-2 |
| Diethylenetriamine | 111-40-0 |
| 4,4`-Isopropylidenediphenol | 80-05-7 |

## 2.3. Other Hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

# SECTION 3: Composition/information on Ingredients

## 3.2. Mixtures

Mixture

| Substances | EINECS | CAS Number | PERCENT (w/w) | EU - CLP Substance Classification | REACH No. |
|---|---|---|---|---|---|
| Isophorone diamine | 220-666-8 | 2855-13-2 | 30 - 60% | Acute Tox. 4 (H302)<br>Acute Tox. 4 (H312)<br>Acute Tox. 4 (H332)<br>Skin Corr. 1B (H314)<br>Eye Corr. 1 (H318)<br>Skin Sens. 1 (H317)<br>STOT SE 3 (H335)<br>Aquatic Chronic 3 (H412) | No data available |
| Diethylenetriamine | 203-865-4 | 111-40-0 | 10 - 30% | Acute Tox. 4 (H302)<br>Acute Tox. 4 (H312)<br>Acute Tox. 2 (H330)<br>Skin Corr. 1B (H314)<br>Eye Corr. 1 (H318)<br>Skin Sens. 1 (H317)<br>STOT SE 3 (H335) | No data available |
| 4,4`-Isopropylidenediphenol | 201-245-8 | 80-05-7 | 10 - 30% | Eye Corr. 1 (H318) | No data available |

| | | | | | |
|---|---|---|---|---|---|
| | | | | Skin Sens. 1 (H317)<br>Repr. 2 (H361)<br>STOT SE 3 (H335)<br>Aquatic Chronic 2 (H411) | |

**For the full text of the H-phrases mentioned in this Section, see Section 16**

## SECTION 4: First aid measures

**4.1. Description of first aid measures**

**Inhalation** If inhaled, move victim to fresh air and seek medical attention.

**Eyes** Check for and remove contact lenses if present. Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

**Skin** In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**4.2. Most Important symptoms and effects, both acute and delayed**

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause allergic skin reaction. Harmful if swallowed. Harmful in contact with skin. Fatal if inhaled. Potential reproductive hazard. May cause birth defects. May cause damage to internal organs.

**4.3. Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** Treat symptomatically

## SECTION 5: Firefighting Measures

**5.1. Extinguishing media**

**Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons**

None known.

**5.2. Special hazards arising from the substance or mixture**

**Special Exposure Hazards**

Decomposition in fire may produce harmful gases. Use water spray to cool fire exposed surfaces.

**5.3. Advice for firefighters**

**Special Protective Equipment for Fire-Fighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid breathing vapors. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Evacuate all persons from the area.

See Section 8 for additional information

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas. Consult local authorities.

**6.3. Methods and material for containment and cleaning up**

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

**6.4. Reference to other sections**

See Section 8 and 13 for additional information.

## SECTION 7: Handling and Storage

### 7.1. Precautions for Safe Handling

Avoid breathing vapors. Avoid contact with eyes, skin, or clothing. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment. Material is slippery underfoot.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

### 7.2. Conditions for safe storage, including any incompatibilities

Store away from oxidizers. Store away from acids. Store in a cool well ventilated area. Keep container closed when not in use. Store between 59 F (15 C) and 84 F (29 C). Store away from direct sunlight.

### 7.3. Specific End Use(s)

**Exposure Scenario** No information available

**Other Guidelines** No information available

## SECTION 8: Exposure Controls/Personal Protection

### 8.1. Control parameters

**Exposure Limits**

| Substances | CAS Number | EU | UK | Netherlands | France |
|---|---|---|---|---|---|
| Isophorone diamine | 2855-13-2 | Not applicable | Not applicable | Not applicable | Not applicable |
| Diethylenetriamine | 111-40-0 | Not applicable | TWA: 1 ppm<br>TWA: 4.3 mg/m³<br>STEL: 3 ppm<br>STEL: 12.9 mg/m³ | 1 ppm | 1 ppm |
| 4,4`-Isopropylidenediphenol | 80-05-7 | Not applicable | TWA: 10 mg/m³<br>STEL: 30 mg/m³ | 10 mg/m³ | TWA: 10 mg/m³ |

| Substances | CAS Number | Germany | Spain | Portugal | Finland |
|---|---|---|---|---|---|
| Isophorone diamine | 2855-13-2 | Not applicable | Not applicable | Not applicable | Not applicable |
| Diethylenetriamine | 111-40-0 | Not applicable | TWA: 1 ppm<br>TWA: 4.3 mg/m³ | TWA: 1 ppm | TWA: 1 ppm<br>TWA: 4.3 mg/m³<br>STEL: 3 ppm<br>STEL: 13 mg/m³ |
| 4,4`-Isopropylidenediphenol | 80-05-7 | TWA: 5 mg/m³ | TWA: 10 mg/m³ | TWA: 10 mg/m³ | TWA: 5 mg/m³ |

| Substances | CAS Number | Austria | Ireland | Switzerland | Norway |
|---|---|---|---|---|---|
| Isophorone diamine | 2855-13-2 | Not applicable | Not applicable | Not applicable | Not applicable |
| Diethylenetriamine | 111-40-0 | TWA: 1 ppm<br>TWA: 4 mg/m³ | 1 ppm TWA; 4 mg/m³ TWA<br>3 ppm STEL (calculated); 12 mg/m³ STEL (calculated) | TWA: 1 ppm<br>TWA: 4 mg/m³ | TWA: 1 ppm<br>TWA: 4 mg/m³<br>STEL: 3 ppm<br>STEL: 8 mg/m³ |
| 4,4`-Isopropylidenediphenol | 80-05-7 | TWA: 5 mg/m³<br>STEL" 5 mg/m³ | 10 mg/m³ TWA (inhalable dust)<br>30 mg/m³ STEL (calculated) | TWA: 5 mg/m³<br>STEL: 5 mg/m³ | TWA: 10 mg/m³<br>STEL: 20 mg/m³ |

| Substances | CAS Number | Italy | Poland | Hungary | Czech Republic |
|---|---|---|---|---|---|
| Isophorone diamine | 2855-13-2 | Not applicable | Not applicable | Not applicable | Not applicable |
| Diethylenetriamine | 111-40-0 | Not applicable | TWA: 4 mg/m³<br>STEL: 12 mg/m³ | TWA: 4 mg/m³<br>STEL: 4 mg/m³ | TWA: 4 mg/m³ |
| 4,4`-Isopropylidenediphenol | 80-05-7 | Not applicable | TWA: 5 mg/m³<br>STEL: 10 mg/m³ | Not applicable | TWA: 2 mg/m³ |

| Substances | CAS Number | Denmark | Romania | Croatia | Cyprus |
|---|---|---|---|---|---|
| Isophorone diamine | 2855-13-2 | Not applicable | Not applicable | Not applicable | Not applicable |
| Diethylenetriamine | 111-40-0 | TWA: 1 ppm<br>TWA: 4 mg/m³ | TWA: 0.5 ppm<br>TWA: 2 mg/m³<br>STEL: 1 ppm<br>STEL: 4 mg/m³ | TWA: 1 ppm<br>TWA: 4.3 mg/m³ | Not applicable |
| 4,4`-Isopropylidenediphenol | 80-05-7 | TWA: 3 mg/m³ | TWA: 10 mg/m³ | TWA: 10 mg/m³ | TWA: 10 mg/m³ |

**Derived No Effect Level (DNEL)** No information available.

**Worker**

**General Population**

**Predicted No Effect Concentration (PNEC)** No information available.

**8.2. Exposure controls**

**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment**

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

| | |
|---|---|
| **Respiratory Protection** | If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Organic vapor respirator. |
| **Hand Protection** | Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. (>= 0.4 mm thickness)<br>This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types. |
| **Skin Protection** | Rubber apron. |
| **Eye Protection** | Chemical goggles; also wear a face shield if splashing hazard exists. |
| **Other Precautions** | Eyewash fountains and safety showers must be easily accessible. Rubber boots |

**Environmental Exposure Controls** Do not allow material to contaminate ground water system

## SECTION 9: Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Liquid **Color:** Light yellow

**Odor:** Amine **Odor Threshold:** No information available

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | No data available |
| **Freezing Point/Range** | No data available |
| **Melting Point/Range** | No data available |
| **Boiling Point/Range** | No data available |
| **Flash Point** | 110 °C / 230 °F PMCC |
| **Flammability (solid, gas)** | No data available |
| **upper flammability limit** | No data available |
| **lower flammability limit** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.08 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

## SECTION 10: Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical Stability**
Stable
**10.3. Possibility of Hazardous Reactions**
Will Not Occur
**10.4. Conditions to Avoid**
None anticipated
**10.5. Incompatible Materials**
Strong oxidizers. Strong acids. Strong alkalis. Contact with copper. Prolonged contact with aluminum. Zinc. Peroxides. Cyanides.
**10.6. Hazardous Decomposition Products**
Carbon monoxide and carbon dioxide. Oxides of nitrogen.

## SECTION 11: Toxicological Information

**11.1. Information on Toxicological Effects**

**Acute Toxicity**

**Inhalation** Fatal if inhaled. May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

**Eye Contact** Causes eye burns.

**Skin Contact** Harmful if absorbed through the skin. Causes severe burns. May cause an allergic skin reaction.

**Ingestion** Harmful if swallowed. Causes burns of the mouth, throat and stomach.

**Chronic Effects/Carcinogenicity** Prolonged or repeated exposure may cause reproductive system damage. Prolonged or repeated exposure may cause embryo and fetus toxicity.

### Toxicology data for the components

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Isophorone diamine | 2855-13-2 | 1030 mg/kg (Rat) | > 2000 mg/kg (Rat) | 1.07 - 5.01 mg/L (Rat) 4h |
| Diethylenetriamine | 111-40-0 | 819 mg/kg (Rat)<br>1080 mg/kg (Rat)<br>1547 mg/kg (Rat)<br>1800 mg/kg (Rat)<br>1553 mg/kg (Rat) | 672 mg/kg (Rabbit)<br>678 mg/kg (Rabbit)<br>1040 mg/kg (Rabbit)<br>162 mg/kg (Guinea pig) | > 0.07 < 0.3 mg/L (Rat, 4h, aerosol) |
| 4,4`-Isopropylidenediphenol | 80-05-7 | 3200 mg/kg (Rat)<br>2000 - 5000 mg/kg (Rat) | 3000 mg/kg (Rabbit)<br>> 2000 mg/kg (Rabbit) | > 170 mg/m³ (Rat) (Highest attainable concentration) |

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Isophorone diamine | 2855-13-2 | Corrosive to skin (Rabbit) |
| Diethylenetriamine | 111-40-0 | Corrosive to skin (Rabbit) |
| 4,4`-Isopropylidenediphenol | 80-05-7 | Not irritating to skin in rabbits. |

| Substances | CAS Number | Eye damage/irritation |
|---|---|---|
| Isophorone diamine | 2855-13-2 | Corrosive to eyes (Rabbit) |
| Diethylenetriamine | 111-40-0 | Corrosive to eyes (Rabbit) |
| 4,4`-Isopropylidenediphenol | 80-05-7 | Causes severe eye irritation. |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Isophorone diamine | 2855-13-2 | Skin sensitizer in guinea pig. |
| Diethylenetriamine | 111-40-0 | Skin sensitizer in guinea pig. |
| 4,4`-Isopropylidenediphenol | 80-05-7 | May cause sensitization by skin contact |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Isophorone diamine | 2855-13-2 | No information available |
| Diethylenetriamine | 111-40-0 | No data of sufficient quality are available. |
| 4,4`-Isopropylidenediphenol | 80-05-7 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Isophorone diamine | 2855-13-2 | In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects |
| Diethylenetriamine | 111-40-0 | In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. |

| | | |
|---|---|---|
| 4,4`-Isopropylidenediphenol | 80-05-7 | In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Isophorone diamine | 2855-13-2 | No information available. |
| Diethylenetriamine | 111-40-0 | Did not show carcinogenic effects in animal experiments |
| 4,4`-Isopropylidenediphenol | 80-05-7 | Did not show carcinogenic effects in animal experiments |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Isophorone diamine | 2855-13-2 | Did not show teratogenic effects in animal experiments. |
| Diethylenetriamine | 111-40-0 | Did not show teratogenic effects in animal experiments. |
| 4,4`-Isopropylidenediphenol | 80-05-7 | Experiments have shown reproductive toxicity effects on laboratory animals |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Isophorone diamine | 2855-13-2 | May cause respiratory irritation. |
| Diethylenetriamine | 111-40-0 | May cause respiratory irritation. May cause disorder and damage to the (Liver) (Kidney) Respiratory system. |
| 4,4`-Isopropylidenediphenol | 80-05-7 | May cause respiratory irritation. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Isophorone diamine | 2855-13-2 | No data of sufficient quality are available. |
| Diethylenetriamine | 111-40-0 | No significant toxicity observed in animal studies at concentration requiring classification. |
| 4,4`-Isopropylidenediphenol | 80-05-7 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Isophorone diamine | 2855-13-2 | Not applicable |
| Diethylenetriamine | 111-40-0 | No information available |
| 4,4`-Isopropylidenediphenol | 80-05-7 | Not applicable |

## SECTION 12: Ecological Information

**12.1. Toxicity**

**Ecotoxicity Effects**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Isophorone diamine | 2855-13-2 | EC50 (72h) 37 mg/L (Desmodesmus subspicatus) | LC50 (96h) 110 mg/L (Leuciscus idus) | No information available | EC50 (48h) 23 mg/L (Daphnia magna) NOEC (21d) 3 mg/L (Daphnia magna) |
| Diethylenetriamine | 111-40-0 | ErC50 (72h) 1164 mg/L (Pseudokirchnerella subcapitata) | LC50 (96h) 430 mg/L (Poecilia reticulate) NOEC (28d) > 10 mg/L (Gasterosteus aculeatus) | ErC50 (3h) 32.7 mg/L (nitrifying bacteria) | EC50 (48h) 16 mg/L (Daphnia magna) NOEC (21d) 5.6 mg/L (Daphnia magna) |
| 4,4`-Isopropylidenediphenol | 80-05-7 | EC50 (96h) 1.1 mg/L (Skeletonema costatum) EC50 (96h) 2.73-3.1 mg/L (Selanastrum capricornutum) | LC50 (96h) 9.4 mg/L (Menidia menidia) LC50 (96h) 4.6 mg/L (Pimephales promelas) NOEC (116d) 0.066 mg/L NOEC (444d) 0.016 mg/L (Pimephales promelas) | IC50 (16h) 54.5 mg/L (Pseudomonas fluorescens) EC10 (18h) > 320 mg/L (Pseudomonas putida) | EC50 (48h) 10.2 mg/L (Daphnia magna) EC50 (96h) 1.1 mg/L (Americamysis Bahia) NOEC (21d) >3.16 mg/L (Daphnia magna) NOEC (328d) 0.025 mg/L (Marisa cornuarietis) |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Isophorone diamine | 2855-13-2 | Not readily biodegradable (8% @ 28d) |
| Diethylenetriamine | 111-40-0 | Readily biodegradable (> 96% @ 10d) |
| 4,4`-Isopropylidenediphenol | 80-05-7 | Readily biodegradable (89% @ 28d) |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Log Pow |
|---|---|---|

| | | |
|---|---|---|
| Isophorone diamine | 2855-13-2 | Log Kow = 0.99<br>BCF = 3.16 |
| Diethylenetriamine | 111-40-0 | -1.58 |
| 4,4`-Isopropylidenediphenol | 80-05-7 | 3.4<br>BCF = 5.1 - 13.3 |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Isophorone diamine | 2855-13-2 | No information available |
| Diethylenetriamine | 111-40-0 | KOC = 2582 - 36,658 |
| 4,4`-Isopropylidenediphenol | 80-05-7 | KOC = 890 |

### 12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

| Substances | PBT and vPvB assessment |
|---|---|
| Isophorone diamine | Not PBT/vPvB |
| Diethylenetriamine | Not PBT/vPvB |
| 4,4`-Isopropylidenediphenol | Not PBT/vPvB |

### 12.6. Other adverse effects

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## SECTION 13: Disposal Considerations

### 13.1. Waste treatment methods

**Disposal Method** Disposal should be made in accordance with federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## SECTION 14: Transport Information

**IMDG/IMO**

**UN Number:** UN2735
**UN Proper Shipping Name:** Amines, Liquid, Corrosive, N.O.S. (Contains 3-aminomethyl-3,5,5-trimethylcyclohexilamine, diethylenetriamine)
**Transport Hazard Class(es):** 9
**Packing Group:** II
**Environmental Hazards:** Not applicable

**RID**

**UN Number:** UN2735
**UN Proper Shipping Name:** Amines, Liquid, Corrosive, N.O.S. (Contains 3-aminomethyl-3,5,5-trimethylcyclohexilamine, diethylenetriamine)
**Transport Hazard Class(es):** 8
**Packing Group:** II
**Environmental Hazards:** Not applicable

**ADR**

**UN Number:** UN2735
**UN Proper Shipping Name:** Amines, Liquid, Corrosive, N.O.S. (Contains 3-aminomethyl-3,5,5-trimethylcyclohexilamine, diethylenetriamine)
**Transport Hazard Class(es):** 8
**Packing Group:** II
**Environmental Hazards:** Not applicable

**IATA/ICAO**

**UN Number:** UN2735
**UN Proper Shipping Name:** Amines, Liquid, Corrosive, N.O.S. (Contains 3-aminomethyl-3,5,5-trimethylcyclohexilamine, diethylenetriamine)
**Transport Hazard Class(es):** 9
**Packing Group:** II
**Environmental Hazards:** Not applicable

**14.1. UN Number:** UN2735

**14.2. UN Proper Shipping Name:** Amines, Liquid, Corrosive, N.O.S. (Contains 3-aminomethyl-3,5,5-trimethylcyclohexilamine, diethylenetriamine)

**14.3. Transport Hazard Class(es):** 8

**14.4. Packing Group:** II

**14.5. Environmental Hazards:** Not applicable

**14.6. Special Precautions for User:** None

**14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** Not applicable

## SECTION 15: Regulatory Information

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

**International Inventories**

| | |
|---|---|
| **EINECS Inventory** | This product, and all its components, complies with EINECS |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian DSL Inventory** | All components listed on inventory or are exempt. |

**Legend**
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**Germany, Water Endangering Classes (WGK)** WGK 2: Hazard to waters.

**15.2. Chemical Safety Assessment**
No information available

## 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
H330 - Fatal if inhaled
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H361 - Suspected of damaging fertility or the unborn child
H411 - Toxic to aquatic life with long lasting effects
H412 - Harmful to aquatic life with long lasting effects

**Key or legend to abbreviations and acronyms**
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
ErC50 – Effective Concentration growth rate 50%
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL0 – Lethal Loading 0%
LL50 – Lethal Loading 50%
MARPOL – International Convention for the Prevention of Pollution from Ships
mg/kg – milligram/kilogram

mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NOEC – No Observed Effect Concentration
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
PC – Chemical Product category
PEL – Permissible Exposure Limit
ppm – parts per million
PROC – Process category
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
STEL – Short Term Exposure Limit
SU – Sector of Use category

**Key literature references and sources for data**
www.ChemADVISOR.com/
OSHA
ECHA C&L

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SDS sections updated: 1

**This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010**

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**End of Safety Data Sheet**