

**AMRI™**

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## Safety Data Sheets (SDSs)

Section and Heading		Information requirements
1	Identification	<ul style="list-style-type: none"><li>• IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING<ul style="list-style-type: none"><li>• Product identifier :</li><li>• Substances :<ul style="list-style-type: none"><li>• Substances Name: Atenolol</li><li>• Index No :NA</li><li>• CLP Reference No:NA</li><li>• EC No:NA</li><li>• REACH Registration No:NA</li><li>CAS No: 29122-68-7</li></ul></li><li>• Mixtures</li><li>• Trade Name/Designation: NA</li><li>• Other means of identification : : 2-[4-[2-hydroxy-3-(propan-2-ylamino)propoxy]phenyl]acetamide</li><li>• Relevant identified uses of the substances or mixture and uses advised against</li><li>• Relevant identified uses : Medicines</li><li>• Uses advised against: Atenolol should be used with caution and in reduced dosage in patients with impaired renal function, especially when creatinine clearance is less than 35 ml/minute per 1.73 sq m ... Patients receiving atenolol after hemodialysis /should/ be administered the drug under close supervision in a hospital setting, since marked hypotension may occur</li><li>• Details of the supplier of the safety data sheet: Manufacturer<ul style="list-style-type: none"><li>○ AMRI INDIA PVT LTD, G-1/1, 1/2, MIDC, WALUJ, AURANGANAD, MAHARASHTRA, INDIA</li></ul></li></ul></li></ul>



		<ul style="list-style-type: none"> <li>• E-Mail : <a href="mailto:shahid.shaikh@amriglobal.com">shahid.shaikh@amriglobal.com</a></li> <li>• Information contact: S S Shaikh</li> <li>• National contact : S S Shaikh</li> <li>• Emergency Telephone No: +9102402564456 , +9102402554006</li> </ul>												
2	<b>Hazards identification</b>	<ul style="list-style-type: none"> <li>• <b>HAZARD IDENTIFICATION</b></li> <li>• Classification of the substances or mixture:</li> <li>• Classification according to Regulation (EC) No 1272/2008(CLP/GHS)</li> </ul> <table> <thead> <tr> <th>Hazard classes &amp; Hazard Categories</th><th>Hazard Statements</th><th>Classification Procedure</th></tr> </thead> <tbody> <tr> <td>Hazard class(Ch.3.9) (Category 2)</td><td>H-373</td><td>on basis of test data</td></tr> <tr> <td>Health class (Ch.3.8) (Category 3)</td><td>H-335</td><td>Human Experience</td></tr> <tr> <td>Health class(Ch.3.2) (Category 2)</td><td>H-315</td><td>Human Experience</td></tr> </tbody> </table> <ul style="list-style-type: none"> <li>• Classification according to 67/548/EEC or 1999/45/EC R22- Harmful if swallowed. R40- Possible risks of irreversible effects. R36-irritating to eyes</li> <li>• Additional Information: R- as above H-315: Causes skin irritation H-335 : May cause respiratory irritation H-373 : May cause damage to organs through prolonged or repeated exposure (state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)</li> </ul> <p>EUH401: To avoid risks to human health and the environment, comply with the instructions for use.</p> <ul style="list-style-type: none"> <li>• Label Elements</li> <li>• Labelling according to regulation (EC) No 1272/2008 (CLP/GHS)</li> <li>• Product identifier:</li> <li>• Substances:</li> </ul>	Hazard classes & Hazard Categories	Hazard Statements	Classification Procedure	Hazard class(Ch.3.9) (Category 2)	H-373	on basis of test data	Health class (Ch.3.8) (Category 3)	H-335	Human Experience	Health class(Ch.3.2) (Category 2)	H-315	Human Experience
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Health class(Ch.3.2) (Category 2)	H-315	Human Experience												

		<p>Atenolol Index No:NA Authorization No :NA</p> <p>Mixtures: Pure solid-100% W/W</p> <ul style="list-style-type: none"> <li>Hazard components for labeling :</li> </ul> <p>Repeated or prolong exposure to the substance can produce target organ damage, May cause respiratory irritation</p> <p>Authorization No:NA</p> <ul style="list-style-type: none"> <li>Hazard Pictograms</li> </ul> <div data-bbox="767 837 938 1005" data-label="Image"> </div> <p>(Respiratory Tract Irritation)</p> <p>GHS07</p> <ul style="list-style-type: none"> <li>Signal word(s) : Warning</li> <li>Hazard statement(s) :</li> </ul> <p>H-319 : Causes serious eye irritation</p> <p>H-335: May cause respiratory irritation</p> <p>H-373: May cause damage to organs through prolonged or repeated exposure (state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)</p> <ul style="list-style-type: none"> <li>Precautionary statement(s) :</li> </ul> <p>P-201: Obtain special instructions before use.</p> <p>P-202: Do not handle until all safety precautions have been read and understood.</p> <p>P-261: Avoid breathing dust/fume/gas/mist/vapors/spray.</p> <p>P-264: Wash ... thoroughly after handling.</p>
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		<p>P-270: Do not eat, drink or smoke when using this product.</p> <p>P-271: Use only outdoors or in a well-ventilated area.</p> <p>P-280: wear protective gloves/protective clothing/eye protection/face protection.</p> <p>P-301+P-312 : IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell</p> <p>P-302+P-352: IF ON SKIN: Gently wash with plenty of soap and water.</p> <p>P-305+P-351+P-338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P-308+P-313: IF exposed or concerned: Get medical advice/attention.</p> <p>P-312: Call a POISON CENTER or doctor/physician if you feel unwell.</p> <p>P-321: Specific treatment (see ... on this label).</p> <p>P-330: Rinse mouth.</p> <p>P-337+P-313: If eye irritation persists: Get medical advice/attention.</p> <p>P-360: Rinse immediately contaminated clothing and skin with plenty of water before removing Clothes.</p> <p>P-403+P-233: Store in a well-ventilated place. Keep container tightly closed.</p> <p>P-405: Store locked up.</p> <p>P-501: Dispose of contents/container to ....</p> <ul style="list-style-type: none"> <li>• Supplemental Hazard Information (EU):</li> <li>• Special rules for supplemental label elements for certain mixtures: NA</li> <li>• Additional Labelling:NA</li> </ul> <ul style="list-style-type: none"> <li>• Other hazards: Adverse physicochemical effects: Store in cool place</li> </ul> <p>Adverse Human health effect and symptoms: The substance is toxic to blood, lungs, upper respiratory tract, endocrine, skin. Repeated or prolonged exposure to</p>
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		<p>the substance can produce target organs damage.</p> <p>Adverse environmental effects: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise</p> <p>Other adverse hazards: Not specified</p>
3	Composition / information on ingredients	<p>• <b>COMPOSITION / INFORMATION ON INGREDIENTS</b></p> <p>• Substances</p> <p>Substances Name: Atenolol  INDEX No:NA  EC No :NA  CLP Reference No:NA  REACH Registration No:NA  CAS No: 29122-68-7</p> <p>•Purity :100% w/w  Synonyms :NA  Stabilizer:NA  Hazard Impurities:NA</p> <p>Substances Name(Impurity): 2-(4-Hydroxyphenyl) acetamide  INDEX No:NA  EC No :NA  CLP Reference No:NA  REACH Registration No:NA  CAS No:NA</p> <p>•Purity : &lt;0.25 % Impurity in main product  Synonyms :NA  Stabilizer:NA  Hazard Impurities:NA</p> <p>Substances Name(Impurity): 2-[4-[(2RS)-2,3-dihydroxypropoxy] phenyl] acetamide  INDEX No:NA  EC No :NA  CLP Reference No:NA  REACH Registration No:NA  CAS No:NA</p> <p>•Purity : &lt;0.25 % Impurity in main product  Synonyms :NA  Stabilizer:NA</p>

		<p><b>Hazard Impurities:NA</b></p> <p><b>Substances Name: 2-[4-(2,3-epoxypropoxy) phenyl] acetamide</b></p> <p><b>INDEX No:NA</b>  <b>EC No :NA</b>  <b>CLP Reference No:NA</b>  <b>REACH Registration No:NA</b>  <b>CAS No:NA</b></p> <p><b>•Purity : &lt;0.25 % Impurity in main product</b>  <b>Synonyms :NA</b>  <b>Stabilizer:NA</b>  <b>Hazard Impurities:NA</b></p> <p><b>Substances Name(Impurity): 2-[4-[(2RS)-3-chloro-2-hydroxy-propoxy] phenyl] acetamide</b></p> <p><b>INDEX No:NA</b>  <b>EC No :NA</b>  <b>CLP Reference No:NA</b>  <b>REACH Registration No:NA</b>  <b>CAS No:NA</b></p> <p><b>•Purity : &lt;0.25 % Impurity in main product</b>  <b>Synonyms :NA</b>  <b>Stabilizer:NA</b>  <b>Hazard Impurities:NA</b></p> <p><b>Substances Name(Impurity): 2,2'-[2-hydroxypropan-1,3-diylbis (oxy-4,1-phenylene)]diacetamide</b></p> <p><b>INDEX No:NA</b>  <b>EC No :NA</b>  <b>CLP Reference No:NA</b>  <b>REACH Registration No:NA</b>  <b>CAS No:NA</b></p> <p><b>•Purity : &lt;0.25 % Impurity in main product</b>  <b>Synonyms :NA</b>  <b>Stabilizer:NA</b>  <b>Hazard Impurities:NA</b></p> <p><b>• Mixtures</b>  <b>Description of the mixture :</b>  <b>NA</b>  <b>Hazardous ingredients :</b>  <b>NA</b>  <b>• Additional information:</b>  <b>NA</b></p>
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4	First-aid measures	<ul style="list-style-type: none"> <li>• <b>FIRST AID MEASURES</b></li> <li>• <b>Description of first aid measures</b> General information: <ul style="list-style-type: none"> <li>◦ <b>Inhalation:</b> Allow the victim to rest in cool ventilated area, seek medical attention immediately</li> <li>◦ <b>Skin Contact :</b> wash with disinfectant soap and cover contaminated skin with anti bacterial cream, seek medical attention immediately</li> <li>◦ <b>Eye Contact:</b> Immediately the eyes with plenty of running water for at least 15 minutes, keeping eyelids open. Do not use any ointment, seek medical attention immediately</li> <li>◦ <b>Ingestion:</b> Do not induce vomiting; Loosen tight clothing color, tie belt, waistband. If victim is not breathing perform mouth to mouth resuscitation, seek medical attention immediately.</li> </ul> </li> <li>• <b>Self-protection of the first aider:</b>Not specific</li> <li>• <b>Notes for doctor :</b>Not specific</li> <li>• <b>Most important symptoms and effects, both acute and delayed:</b> Not classified</li> <li>• <b>Indication of any immediate medical attention and special treatment needed ;</b>Not specific</li> </ul>
5	Fire-fighting measures	<ul style="list-style-type: none"> <li>• <b>FIRE FIGHTING MEASURES</b></li> <li>• <b>Extinguishing media :</b> <p>Suitable extinguishing media: Use water spray,fog,foam,</p> <p>Unsuitable extinguishing media: Do not use water Jet</p> </li> </ul>

		<p><b>Small Fires: Use Dry Chemical Powder</b></p> <p><b>Large Fires : Use water spray,fog,foam,</b></p> <ul style="list-style-type: none"> <li>• <b>Special hazards arising from the substances or mixture:</b> Hazardous combustion products: Toxic fumes of CO, CO<sub>2</sub>, and nitrogen oxides.</li> <li>• <b>Advise for Fire fighters: Fire suits can be used as an protective wear, use BA set for large fires</b></li> <li>• <b>Additional information: Not specific</b></li> </ul>
6	<b>Accidental release measures</b>	<ul style="list-style-type: none"> <li>• <b>ACCIDENTAL RELEASE MESURES</b></li> <li>• <b>Personal precautions, protective equipment and emergency procedures (include information for emergency responders and non-emergency personnel):</b>Avoid contact with skin, use impervious handgloves,goggles,safety shoes and dust mask for handling during emergency</li> <li>• <b>Environmental precautions :</b></li> <li>• <b>Methods and materials for containment and clean-up:</b> For containment: Absorb with suitable material cleaning up: clean affected area with soap and water.</li> <li><b>Other information: Dispose of materials according to the applicable federal, state, or local Regulations</b></li> <li>• <b>Reference to other sections:Ref Section 7</b></li> <li>• <b>Additional information: Not Specific</b></li> </ul>
7	<b>Handling and storage</b>	<ul style="list-style-type: none"> <li>• <b>HANDLING AND STORAGE</b></li> <li>• <b>Precautions for safe handling:</b> Do not ingest. Do not breathe dust. Avoid contact with Eyes. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label.</li> <li>• <b>Protective measures:</b></li> <li>• <b>Fire Prevention: No special storage required for hazard control. For product protection store at Controlled room temperature of 15-30°C. Keep locked up, Keep away from heat, Keep away from sources of ignition. Empty containers pose a fire risk, Evaporate the residue under a fume hood. Ground all equipment containing material.</b></li> </ul>



		<ul style="list-style-type: none"> <li>• Aerosol and dust generation preventions: Do not ingest. Do not breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the Container or the label</li> <li>• Environmental precautions:</li> <li>• Advice on general occupational hygiene: shall be provided, such as: <ul style="list-style-type: none"> <li>(a) not to eat, drink and smoke in work areas;</li> <li>(b) to wash hands after use;</li> </ul> And <ul style="list-style-type: none"> <li>(c) to remove contaminated clothing and protective equipment before entering eating areas</li> </ul> </li> <li>• Condition for safe storage, including any incompatibles:</li> <li>• Technical measures and storage conditions: No special storage required for hazard control. For product protection store at Controlled room temperature of 15-30°C. Keep locked up.</li> <li>• Packing material : Not Specific</li> <li>• Requirement for storage rooms and vessels: No special storage required for hazard control</li> <li>• Hints on storage assembly: Not specific</li> <li>Storage class:</li> <li>• Further information on storage conditions: NA</li> <li>• Specific end uses: Recommendations; For medicines Industrial sector specific solutions: Not specific</li> </ul>
8	Exposure controls / personal protection	<ul style="list-style-type: none"> <li>• EXPOSURE CONTROLS/PERSONAL PROTECTION</li> <li>• Preventive industrial medical examination are to be carried</li> <li>• Control parameters:</li> <li>• Occupational exposure limits: Not established</li> <li>• Biological exposure limits : Not Established</li> <li>• STEL: Not Established</li> </ul>

		<ul style="list-style-type: none"> <li>• <b>Exposure limits at intended use:</b> Not established</li> <li>• <b>DNEL/PNEC-values:</b> Not established</li> <li>• <b>Risk management measures according to used control banding approach:</b> Not Established</li> <li>• <b>Exposure controls:</b>  Appropriate engineering controls: <ul style="list-style-type: none"> <li>• Engineering controls are not needed during normal product use conditions in case of bulk handling Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.</li> </ul> </li> <li>• <b>Personal protection equipment:</b> <ul style="list-style-type: none"> <li>• <b>Eye/Face protection:</b> Eye protection is not required during expected product use conditions but may be warranted should a splash potential exist</li> <li>• <b>Skin protection :</b> If solution contact with unprotected skin is likely, use of impervious gloves is a prudent practice</li> <li>• <b>Respiratory protection :</b> Respiratory protection is not needed during normal product use</li> </ul> </li> <li>• <b>Thermal Hazards:</b> Not applicable</li> <li>• <b>Environmental exposure controls:</b> Not Specific</li> <li>• <b>Consumer exposure control:</b> Measures related to consumer uses of the substances (such as mixtures):Not Specific Measures related to the service life of the substances in articles: Not Specific</li> <li>• <b>Occupational exposure to Atenolol may occur through inhalation and dermal contact with this compound at workplaces where Atenolol is produced or used (SRC). Direct human exposure occurs through ingestion of the drug when dispensed in tablet form(SRC)</b></li> </ul>
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9	Physical and chemical properties	<ul style="list-style-type: none"> <li>• <b>PHYSICAL AND CHEMICAL PROPERTIES</b></li> <li>• Important health safety and environmental information:</li> <li>• Appearance</li> </ul>				
		Physical state	colour	odour	odour threshold	
		Solid	white	Odorless.	NA	
		<ul style="list-style-type: none"> <li>• Safety Relevant Data:</li> </ul>				
		Parameter	value	conc	Method	Remark
		PH (1% soln/water)	NA			
		Melting Point	152-156°C			
		Boiling Point	568.72 °C			
		Decomposition Temp	NA			
		Flash point	NA			
Auto-ignition temperature	NA					
Vapor Pressure	NA					
Vapor Density	NA					
Density	NA					
Bulk density	0.38 gm/ml					
Water solubility	Very slightly soluble in cold water.					
Partition coefficient	0.170					
Viscosity	NA					
Molecular weight	266.38	g/mole				
Molecular Formula	C14H22N2O3					
<ul style="list-style-type: none"> <li>• Physical hazard:</li> </ul>						
Explosive: Non Explosive product						
Flammable gases:NA						
Flammable aerosols:NA						
Oxidizing gases:NA						
Gases under pressure:NA						
Flammable liquids:NA						
Flammable solids: Non Flammable						
Self reactive substances and mixtures:NA						



		<p>Pyrophoric liquids: NA</p> <p>Pyrophoric solids:NA</p> <p>Self heating substances and mixtures: NA</p> <p>Substances or mixtures which ,in contact with water emit flammable gases: NO</p> <p>Oxidizing liquids:NA</p> <p>Oxidizing solids:NA</p> <p>Organic peroxides:NA</p> <p>Metal corrosion:NA</p> <p>• Other safety information:</p> <p>Properties of explosive atmospheres (Mixtures): Gases and vapors: NA Dusts: Not established</p> <p>Physical chemical properties of nanoparticles:NA</p> <p>Limiting oxygen concentration:NA</p> <p>Bulk density: 0.38 gms/ml</p> <p>Stability in organic solvent and identity or relevant degradation products: NA</p> <p>Evaporation rate:NA</p> <p>Conductivity:NA</p> <p>Surface tension:NA</p> <p>Dissociation constant in water:NA</p> <p>Oxidation –reduction Potential:NA</p> <p>Fat solubility (solvent-oil to be specified):NA</p>
10	Stability and reactivity	<p>• <b>STABILITY AND REACTIVITY</b></p> <p>• Reactivity: Reactive with oxidizing agents, metals, acids.</p> <p>• Chemical Stability: The product is stable for standard</p>

		<p>use and stable under normal conditions</p> <ul style="list-style-type: none"> <li>• Possibility of hazardous reaction: Not classified</li> <li>• Conditions to avoid : NA</li> <li>• Incompatible materials: NA</li> <li>• Hazardous decomposition products: These products are carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO, NO<sub>2</sub>...).</li> </ul>																				
11	Toxicological information	<ul style="list-style-type: none"> <li>• <b>TOXICOLOGICAL INFORMATION</b></li> <li>• Toxicokinetics,metabolism and distribution: Information on toxicological effects:</li> <li>• Substances:</li> </ul> <p>Acute toxicity:</p> <table border="1"> <thead> <tr> <th></th><th>Effect dose</th><th>Species</th><th>Method</th><th>Remark</th></tr> </thead> <tbody> <tr> <td>Acute oral toxicity</td><td>LD50: 2000 mg/Kgs</td><td>Rat</td><td>LD 50</td><td></td></tr> <tr> <td>Acute dermal toxicity</td><td>LD50</td><td>NA</td><td></td><td></td></tr> <tr> <td>Acute inhalative toxicity</td><td>LC50</td><td>NA</td><td></td><td></td></tr> </tbody> </table> <ul style="list-style-type: none"> <li>• Skin corrosion/irritation:H-315</li> <li>• Serious eye damage/irritation:NA</li> <li>• Irritation to respiratory tract: H-335</li> <li>• Respiratory or skin sensitization: NA</li> <li>• CMR effects (carcinogenicity,mutagenicity and Toxicity for reproduction)</li> </ul> <p>Carcinogenicity:</p> <p>There is inadequate evidence for the carcinogenicity of Atenolol in humans. There is inadequate evidence for the carcinogenicity of Atenolol in experimental animals. Overall evaluation: Atenolol is not classifiable as to its carcinogenicity to humans (Group 3). Classified None. By NTP, None. by OSHA, None. By NIOSH. 3 (Not classifiable for human.) by IARC.</p>		Effect dose	Species	Method	Remark	Acute oral toxicity	LD50: 2000 mg/Kgs	Rat	LD 50		Acute dermal toxicity	LD50	NA			Acute inhalative toxicity	LC50	NA		
	Effect dose	Species	Method	Remark																		
Acute oral toxicity	LD50: 2000 mg/Kgs	Rat	LD 50																			
Acute dermal toxicity	LD50	NA																				
Acute inhalative toxicity	LC50	NA																				

		<p><b>Mutagenicity:</b> Classified <b>POSSIBLE</b> for human. Causes damage to the following organs: blood, lungs, upper respiratory tract, endocrine, skin.</p> <p><b>Genotoxicity:</b> Not classified</p> <p><b>Special Remarks on Toxicity to Animals:</b> Not available.</p> <p><b>Special Remarks on Chronic Effects on Humans:</b> Not available.</p> <p><b>Special Remarks on other Toxic Effects on Humans:</b> Not available.</p> <p><b>Other Toxic Effects on Humans:</b> Hazardous in case of skin contact (irritant), of ingestion, of inhalation (lung irritant).</p> <p>• Summarized evaluation of the CMR properties: STOT-Single exposure</p> <table border="1"> <thead> <tr> <th>Single exposure</th> <th>Specific effect</th> <th>Affected organ</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>Acute oral toxicity</td> <td>NE</td> <td>NE</td> <td>NE</td> </tr> <tr> <td>Acute dermal toxicity</td> <td>NE</td> <td>NE</td> <td>NE</td> </tr> <tr> <td>Acute inhalative toxicity</td> <td>NE</td> <td>NE</td> <td>NE</td> </tr> </tbody> </table> <p>STOT-Repeated exposure</p> <table border="1"> <thead> <tr> <th>Repeated exposure</th> <th>Specific effect</th> <th>Affected organ</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>Sub-acute oral</td> <td>In clinical use on animals</td> <td>Kidney, fetus, ears, DNA.</td> <td></td> </tr> <tr> <td>Sub-acute dermal</td> <td>NE</td> <td>NE</td> <td></td> </tr> <tr> <td>Sub-acute inhalative</td> <td>NE</td> <td>NE</td> <td></td> </tr> <tr> <td>Sub-chronic oral</td> <td>NE</td> <td>NE</td> <td></td> </tr> <tr> <td>Sub-chronic dermal</td> <td>NE</td> <td>NE</td> <td></td> </tr> <tr> <td>Sub-chronic inhalative</td> <td>NE</td> <td>NE</td> <td></td> </tr> </tbody> </table>	Single exposure	Specific effect	Affected organ	Remark	Acute oral toxicity	NE	NE	NE	Acute dermal toxicity	NE	NE	NE	Acute inhalative toxicity	NE	NE	NE	Repeated exposure	Specific effect	Affected organ	Remark	Sub-acute oral	In clinical use on animals	Kidney, fetus, ears, DNA.		Sub-acute dermal	NE	NE		Sub-acute inhalative	NE	NE		Sub-chronic oral	NE	NE		Sub-chronic dermal	NE	NE		Sub-chronic inhalative	NE	NE	
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Sub-acute inhalative	NE	NE																																												
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Sub-chronic dermal	NE	NE																																												
Sub-chronic inhalative	NE	NE																																												



		Chronic oral	NE	NE	
		Chronic dermal	NE	NE	
		Chronic inhalative	NE	NE	
<p>• Route(s) of exposure: Eye contact. Inhalation. Ingestion.</p> <p>• Aspiration Hazard: Symptoms related to the physical ,chemical and toxicological characteristic:</p> <p>In case of ingestion: Not classified In case of skin contact: Not classified In case of inhalation: Not classified In case of eye contact: Not classified</p> <p>• Mixtures: Not applicable</p> <p>• Other information: Not specific</p>					

12	Ecological information	• ECOLOGICAL INFORMATION						
		• Toxicity:						
		Aquatic toxicity	Effect dose	Exposure time	SPECIES	Method	Evaluation	Remark
		Acute fish toxicity	LC 50	96 H	Data not available	Data not available	Data not available	Data not available
		Acute daphnia toxicity	EC 50	48 H	Data not available	Data not available	Data not available	Data not available
		Acute algae toxicity	IC 50	72 H	Data not available	Data not available	Data not available	Data not available
• Long Term Toxicity:								
	Effect dose	Exposure time	SPECIES	Method	Evaluation	Remark		
Long-term fish toxicity	LC 50	Data not available	Data not available	Data not available	Data not available	Data not available		

Chronic daphnia toxicity	EC 50	Data not available	Data not available	Data not available	Data not available	Data not available
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• Persistence and degradability:

Abiotic Degradation:

Half Time		Method	Evaluation	Remark
Sea water	NE	NE	NE	
Fresh water	NE	NE	NE	
Air	NE	NE	NE	
Soil	NE	NE	NE	

• Physical- and photo-chemical elimination

Biodegradation:

Degradation rate (%)	Time d	Method	Evaluation	Remark
NE	NE	NE	NE	
NE	NE	NE	NE	
NE	NE	NE	NE	

• Bioaccumulative potential

Partition coefficient n-octanol /water (log K<sub>ow</sub>):

Value	Conc	PH	Deg C	Method	Evaluation	Remark
NE	NE	NE	NE	NE	NE	NE
NE	NE	NE	NE	NE	NE	NE
NE	NE	NE	NE	NE	NE	NE

Bioconcentration factor (BCF):

Values	Species	Method	Evaluation	Remark
NE	NE	NE	NE	NE
NE	NE	NE	NE	NE
NE	NE	NE	NE	NE

• Mobility in soil :

Known or predicted distribution to environmental compartments:

Surface tension:

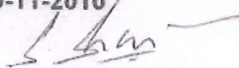

Value	Deg C	Conc	Method	Remark
NE	NE	NE	NE	NE
NE	NE	NE	NE	NE
NE	NE	NE	NE	NE



		• Adsorption/Desorption :						
		Transport	A/D Coef.	Log koc	Volatility rate	Method	Hysterisis	Remark
		Soil-water	NE	NE	NE	NE	NE	NE
		Water-air	NE	NE	NE	NE	NE	NE
		Soil-air	NE	NE	NE	NE	NE	NE
		<ul style="list-style-type: none"> <li>• Results of PBT and vPvB assessment :NE</li> <li>• Other adverse effects:NE <ul style="list-style-type: none"> <li>• Additional information: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise</li> </ul> </li> <li>• Bioaccumulative potential: The products of degradation are less toxic than the product itself.</li> <li>• Mobility in soil :Not Available</li> <li>• Other adverse effects : Not Available</li> </ul>						
13	Disposal considerations	<ul style="list-style-type: none"> <li>• DISPOSAL CONSIDERATIONS <ul style="list-style-type: none"> <li>• Waste treatment methods: Packaging material should be send for incineration</li> <li>• Product / Packaging disposal: Dispose of container and unused contents in accordance with federal, state, and local regulations</li> </ul> </li> <li>Waste codes / waste designations according to EWC / AVV:NA</li> <li>• Waste treatment options: Activated sludge process</li> <li>• Other disposal recommendations: Disposal should be performed in accordance with the federal, state or local regulatory requirements</li> <li>• Additional Information :Use hand gloves ,safety goggles, overalls and Dust Mask- P3 when handling in bulk</li> </ul>						



14	Transport information	<ul style="list-style-type: none"> <li>• <b>TRANSPORT INFORMATION</b></li> <li>• NON Hazardous for air, land, sea Transport (Not a DOT Controlled material)</li> <li>• Environmental hazards: Not established</li> <li>• Land transport (ADR/RID/GGVSE): UN-No: Not classified Proper shipping name:NA Class(es):Ref Section 2 Classification Code:NA Packing group:NA  Hazard label(s): Ref Section 2  Special provision: Not specific</li> <li>• Sea transport (IMDG-Code/GGVSee): UN No: Not classified Proper shipping name:NA Class(es): Ref Section 2 Packing group: NA Marine Pollutant: Not established Special provision(s): Not specific</li> <li>• Air transport (ICAO-IATA/DGR): UN No: Not classified Proper shipping name: NA Class(es): Ref Section 2 Packing group: NA Special provision(s): Not specific</li> <li>• Special precautions for user: Not Specific</li> <li>• Additional information: Not specific</li> </ul>
15	Regulatory information	<ul style="list-style-type: none"> <li>• <b>REGULATORY INFORMATION</b></li> <li>• Safety, health and environmental regulations/legislation specific for the substance or mixture: NA</li> <li>• EU regulations  Authorizations and/or restrictions on use:NA  Authorizations:NA  Restrictions on use:NA  Other EU regulations:NA</li> </ul>

		<p>Information's according 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline):NA</p> <p>National regulations (Germany):NA</p> <p>Restrictions of occupation:NA</p> <p>Störfallverordnung (12. BImSchV):NA</p> <p>Wassergefährdungsklasse (water hazard class):NA</p> <p>Technische Anleitung Luft (TA-Luft):NA</p> <p>• Chemical Safety Assessment: NA</p>
16	Other information	<p>• <b>OTHER INFORMATION</b></p> <p>• Indication of changes: First version( R-01/2010) Boiling point ,partition coefficient &amp; Molecular formula included</p> <p>• Abbreviations and acronyms:NA-Not applicable,NE-Not established</p> <p>• Key literature references and sources for data: MSDS sheets from science lab, United states national library of medicines-ChemIdPLUS Lite</p> <p>• Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]:NA</p> <p>• Relevant R-, H- and EUH-phrases (number and full text):Refer section 2.0</p> <p>• Training advice: Refer SDS before handling the substance</p> <p>• Further information: Preparation information :</p> <p>Prepared By:S S Shaikh-Manager EHS Date : 29-11-2010 Sign : </p> <p>Verified By : Vijay Kumar Suthari Date : 29-11-2010 Sign : </p>