


DR. J. PHARMACHEM (INDIA)

| <b>MATERIAL SAFETY DATA SHEET</b> |   |
|-----------------------------------|---|
| <b>1</b>                          | <b>IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING</b>                 |
| <b>1.1</b>                        | <b>Product identifiers</b>  |
|                                   | Product Name Pentaerythritol tetrabenzoate  |
|                                   | CAS NO. 4196-86-5   |
| <b>1.2</b>                        | <b>Relevant identified uses of the substance or mixture and uses advised against</b>          |
|                                   | Identified uses Laboratory chemicals, Manufacture of substances                               |
| <b>1.3</b>                        | <b>Details of the supplier of the safety data sheet</b>                                       |
|                                   | COMPANY DR. J. PHARMACHEM (INDIA)   |
|                                   | 722/AB/15 'NIRMAL' ,LAXMI PARK COLONY,  |
|                                   | NAVI PETH , PUNE- 411 030.INDIA   |
|                                   | Telephone : 020-24530071  |
|                                   | Fax : 020-24530110  |
| <b>2</b>                          | <b>HAZARDS IDENTIFICATION</b>   |
| <b>2.1</b>                        | <b>Classification of the substance or mixture</b>   |
|                                   | <b>Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]</b>                  |
|                                   | Acute toxicity, Oral (Category 4)   |
|                                   | <b>Classification according to EU Directives 67/548/EEC or 1999/45/EC</b>                     |
|                                   | Harmful if swallowed.   |
| <b>2.2</b>                        | <b>Label elements</b>   |
|                                   | <b>Labelling according Regulation (EC) No 1272/2008 [CLP]</b>                                 |
|                                   | Pictogram  |
|                                   | Signal word Warning   |
|                                   | Hazard statement(s)   |
|                                   | H302 Harmful if swallowed.  |
|                                   | Precautionary statement(s) none   |
|                                   | Supplemental Hazard Statements none   |
|                                   | <b>According to European Directive 67/548/EEC as amended</b>                                  |



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|            | Hazard symbol(s)  | <b>X</b>  |
|            | R-phrase(s)   |   |
|            | R22   | Harmful if swallowed.   |
|            | S-phrase(s)   | none  |
| 2.3        | <b>Other hazards</b>  | none  |
| <b>3</b>   | <b>COMPOSITION/INFORMATION ON INGREDIENTS</b>   |   |
| <b>3.1</b> | <b>Substances</b>   |   |
|            | Synonyms  | 1,3-Propanediol,2,2-bis[(benzoyloxy)methyl]-dibenzoate<br>2,2-bis((benzoyloxy)methyl)dibenzoate-1,3-propanediol<br>3-propanediol,2,2-bis((benzoyloxy)methyl)-dibenzoate |
|            | Formula   | C33H28O8  |
|            | Molecular Weight  | 552.57 g/mol  |
|            | Component   | Concentration   |
|            | Pentaerythritol tetrabenzoate   |   |
|            | CAS-No. :4196-86-5<br>EC-No. :224-079-8   | -   |
| <b>4</b>   | <b>FIRST AID MEASURES</b>   |   |
| <b>4.1</b> | <b>Description of first aid measures</b>  |   |
|            | <b>General advice</b>   | Consult a physician. Show this safety data sheet to the doctor in attendance.   |
|            | <b>If inhaled</b>   | If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.   |
|            | <b>In case of skin contact</b>  | Wash off with soap and plenty of water. Consult a physician.  |
|            | <b>In case of eye contact</b>   | Flush eyes with water as a precaution.  |
|            | <b>If swallowed</b>   | Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.   |
| <b>4.2</b> | <b>Most important symptoms and effects, both acute and delayed</b>  |   |
|            | To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. |   |
| <b>4.3</b> | <b>Indication of any immediate medical attention and special treatment needed</b>   |   |
|            | No data available   |   |
| <b>5</b>   | <b>FIREFIGHTING MEASURES</b>  |   |
| <b>5.1</b> | <b>Extinguishing media</b>  |   |
|            | <b>Suitable extinguishing media</b>   | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.  |
| <b>5.2</b> | <b>Special hazards arising from the substance or mixture</b>  | Carbon oxides   |
| <b>5.3</b> | <b>Advice for firefighters</b>  | Wear self contained breathing apparatus for   |



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|     |   | firefighting if necessary. |
| 5.4 | <b>Further information</b>  | No data available          |
| 6   | <b>ACCIDENTAL RELEASE MEASURES</b>  |                            |
| 6.1 | <b>Personal precautions, protective equipment and emergency procedures</b>  |                            |
|     | Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.  |                            |
| 6.2 | <b>Environmental precautions</b>  |                            |
|     | Do not let product enter drains   |                            |
| 6.3 | <b>Methods and materials for containment and cleaning up</b>  |                            |
|     | Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.  |                            |
| 6.4 | <b>Reference to other sections</b>  |                            |
|     | For disposal see section 13.  |                            |
| 7   | <b>HANDLING AND STORAGE</b>   |                            |
| 7.1 | <b>Precautions for safe handling</b>  |                            |
|     | Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.   |                            |
| 7.2 | <b>Conditions for safe storage, including any incompatibilities</b>   |                            |
|     | Store in cool place. Keep container tightly closed in a dry and well-ventilated place.  |                            |
| 7.3 | <b>Specific end uses</b>  |                            |
|     | no data available   |                            |
| 8   | <b>EXPOSURE CONTROLS/PERSONAL PROTECTION</b>  |                            |
| 8.1 | <b>Control parameters</b>   |                            |
|     | <b>Components with workplace control parameters</b>   |                            |
| 8.2 | <b>Exposure controls</b>  |                            |
|     | <b>Appropriate engineering controls</b>   |                            |
|     | Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.  |                            |
|     | <b>Personal protective equipment</b>  |                            |
|     | <b>Eye/face protection</b>  |                            |
|     | Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).  |                            |
|     | <b>Skin protection</b>  |                            |
|     | Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.<br>The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. |                            |
|     | <b>Body Protection</b>  |                            |
|     | Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace  |                            |
|     | <b>Respiratory protection</b>   |                            |
|     | For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher   |                            |



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|      | level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or GEN (EU). |  |
| 9    | <b>PHYSICAL AND CHEMICAL PROPERTIES</b>   |  |
| 9.1  | <b>Information on basic physical and chemical properties</b>  |  |
| a)   | Appearance  | Form :Crystalline Particles -lumps / granules<br>Colour : White to Off-white |
| b)   | Odour   | No data available  |
| c)   | Odour Threshold   | No data available  |
| d)   | pH  | No data available  |
| e)   | Melting range/freezing range  | 103-108°C.   |
| f)   | Initial boiling point and boiling range   | 684.3 °C at 760 mmHg   |
| g)   | Flash point   | 286.2 °C   |
| h)   | Enthalpy of Vaporization  | 100.36 kJ/mol  |
| i)   | Index of Refraction   | 1.599  |
| j)   | Molar Refractivity  | 150.55 cm <sup>3</sup>   |
| k)   | Vapour pressure   | 1.4E-18 mmHg at 25 °C  |
| l)   | Density   | 1.255 g/cm <sup>3</sup>  |
| m)   | Oxidizing properties  | No data available  |
| n)   | Solubility in water   | Insoluble  |
| o)   | Partition coefficient: noctanol/water   | No data available  |
| p)   | Polarizability  | 59.68×10 <sup>-24</sup> cm <sup>3</sup>                                      |
| q)   | Decomposition temperature   | No data available  |
| r)   | Molar Volume  | 440.2 cm <sup>3</sup>  |
| s)   | Surface Tension   | 52.8 dyne/cm   |
| 9.2  | <b>Other safety information</b>   |  |
|      | IUPAC Name  | [3-Benzoyloxy-2,2-bis(benzoyloxymethyl)propyl] benzoate                      |
|      | Molecular Formula   | C33H28O8   |
|      | Molecular Weight  | 552.57 g/mol   |
|      | SMILES  | O=C(OCC(COC(=O)c1ccccc1)(COC(=O)c1ccccc1)COC(=O)c1ccccc1)c1ccccc1            |
|      | EINECS  | 224-079-8  |
| 10   | <b>STABILITY AND REACTIVITY</b>   |  |
| 10.1 | <b>Reactivity</b>   | no data available  |
| 10.2 | <b>Chemical stability</b>   | no data available  |
| 10.3 | <b>Possibility of hazardous reactions</b>   | no data available  |
| 10.4 | <b>Conditions to avoid</b>  | no data available  |
| 10.5 | <b>Incompatible materials</b>   | Strong oxidizing agents  |
| 10.6 | <b>Hazardous decomposition products</b>   | Other decomposition products - no data available                             |
| 11   | <b>TOXICOLOGICAL INFORMATION</b>  |  |
| 11.1 | <b>Information on toxicological effects</b>   |  |
|      | <b>Acute toxicity</b>   | LD50 Oral - rat - 1.158 mg/kg  |



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|------|--|--|------|
|      | <b>Skin corrosion/irritation</b>   | no data available  |      |
|      | <b>Serious eye damage/eye irritation</b>   | no data available  |      |
|      | <b>Respiratory or skin sensitization</b>   | no data available  |      |
|      | <b>Germ cell mutagenicity</b>  | no data available  |      |
|      | <b>Carcinogenicity</b>   | IARC: No component of this product presents at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |      |
|      | <b>Reproductive toxicity</b>   | no data available  |      |
|      | <b>Specific target organ toxicity - single exposure</b>  | no data available  |      |
|      | <b>Specific target organ toxicity - repeated exposure</b>  | no data available  |      |
|      | <b>Aspiration hazard</b>   | no data available  |      |
|      | <b>Potential health effects</b>  |  |      |
|      | <b>Inhalation</b>  | May be harmful if inhaled. May cause respiratory tract irritation.   |      |
|      | <b>Ingestion</b>   | Harmful if swallowed.  |      |
|      | <b>Skin</b>  | May be harmful if absorbed through skin. May cause skin irritation.  |      |
|      | <b>Eyes</b>  | May cause eye irritation.  |      |
|      | <b>Signs and Symptoms of Exposure</b>  |  |      |
|      | To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.  |  |      |
|      | <b>Additional Information</b>  |  |      |
|      | RTECS  | RZ2605000  |      |
| 12   | <b>ECOLOGICAL INFORMATION</b>  |  |      |
| 12.1 | <b>Toxicity</b>  | no data available  |      |
| 12.2 | <b>Persistence and degradability</b>   | no data available  |      |
| 12.3 | <b>Bioaccumulative potential</b>   | no data available  |      |
| 12.4 | <b>Mobility in soil</b>  | no data available  |      |
| 12.5 | <b>Results of PBT and vPvB assessment</b>  | no data available  |      |
| 12.6 | <b>Other adverse effects</b>   | no data available  |      |
| 13   | <b>DISPOSAL CONSIDERATIONS</b>   |  |      |
| 13.1 | <b>Waste treatment methods</b>   |  |      |
|      | <b>Product</b>   |  |      |
|      | Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. |  |      |
|      | <b>Contaminated packaging</b>  |  |      |
|      | Dispose of as unused product.  |  |      |
| 14   | <b>TRANSPORT INFORMATION</b>   |  |      |
| 14.1 | <b>UN number</b>   |  |      |
|      | ADR/RID  | IMDG   | IATA |
|      | -  | -  | -    |
| 14.2 | <b>UN proper shipping name</b>   |  |      |



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|      |   |                       |                     |
|------|---|-----------------------|---------------------|
|      | ADR/RID   | IMDG                  | IATA                |
|      | Not dangerous goods   | Not dangerous goods   | Not dangerous goods |
| 14.3 | <b>Transport hazard class(es)</b>   |                       |                     |
|      | ADR/RID   | IMDG                  | IATA                |
|      | -   | -                     | -                   |
| 14.4 | <b>Packaging group</b>  |                       |                     |
|      | ADR/RID   | IMDG                  | IATA                |
|      | -   | -                     | -                   |
| 14.5 | <b>Environmental hazards</b>  |                       |                     |
|      | ADR/RID   | IMDG Marine pollutant | IATA                |
|      | no  | no                    | no                  |
| 14.6 | <b>Special precautions for user</b>   |                       |                     |
|      | no data available   |                       |                     |
| 15   | <b>REGULATORY INFORMATION</b>   |                       |                     |
|      | This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.  |                       |                     |
| 15.1 | <b>Safety, health and environmental regulations/legislation specific for the substance or mixture</b>   |                       |                     |
|      | no data available   |                       |                     |
| 15.2 | <b>Chemical Safety Assessment</b>   |                       |                     |
|      | no data available   |                       |                     |
| 16   | <b>OTHER INFORMATION</b>  |                       |                     |
|      | <b>Further information</b>  |                       |                     |
|      | <p>The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Dr J Pharmachem (India) and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See <a href="http://www.jpharmachem.com">www.jpharmachem.com</a> and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.</p> <p>Month of creation :- November 2013<br/>Month of revision :- November 2016</p> |                       |                     |