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Pharma – 2012 :Suitability of plasticised polymers for hot melt extrusion process ethyl alcohol as desolvating agent -Amol M. Sabale -Tatyasaheb Kore College of Pharmacy

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Polymer for hot melt extrusion must exhibit thermoplastic characteristics in order to permit melt extrusion process and they must be stable at processing temperature. Other important characteristics are: suitable glass transition (Tg) of 50-180oC, low Hygroscopicity and no toxicity since large amount of polymers are used. Extrudability of polymer is mainly determined by glass transition temperature and melt viscosity. Polymers having high molecular weight can hardly be extruded due to their high melt viscosity. Moreover, a high Tg required high processing temperature which can degrade sensitive drug. As a general rule, an extrusion should be run at temperature 20-40oC above the Tg. Most polymers exhibit thixotropic behaviour which means that the viscosity declines as function of increasing shear stress. So the study is designed to determine the influence of several plasticizers on the Tg and melt viscosity of polymer. Plasticization is that the process of adjusting the structure of a polymer to form it easier to bend. Internal plasticization of a rigid polymer are often administered by chemically modifying the polymer or the monomer in order that the pliability of the polymer is increased. Plasticizers do their job by acting as a sort of "lubricant" between segments of polymer chains. Without the plasticizer, those chains of molecules would sit on top of every other as rigidly as uncooked spaghetti during a box. Many various materials use plasticizers — PVC, rubber, plastics then on. Some common phthalate plasticizers are: Bis(2-ethylhexyl) phthalate (DEHP), utilized in construction materials and medical devices. Diisooctyl phthalate (DIOP), all-purpose plasticizer for PVC,PVA, rubbers, cellulose plastics, and polyurethane. Diethyl phthalate (DEP). The key difference between polymers and plastics is that plastic may be a specific sort of polymer. Plastics are comprised of an extended chain of polymers, where polymers are composed of smaller, uniform molecules. Plasticizers increase the flow and thermoplasticity of a polymer by decreasing the viscosity of the polymer melt, the glass transition temperature (Tg), the melting temperature (Tm) and therefore the coefficient of elasticity of the finished product without altering the elemental chemical character of the plasticized material. Plasticization is that the process of adjusting the structure of a polymer to form it easier to bend. Internal plasticization of a rigid polymer are often administered by chemically modifying the polymer or the monomer in order that the pliability of the polymer is increased. Plasticizers are among the foremost widely researched of all chemical substances.All other plasticizers haven't been classified for any adverse health effects and don't cause adverse effects by means of an endocrine mechanism. Hence they're not endocrine disruptors. Polymer additives are the chemicals that are added to polymer matrix to enhance the process-ability of polymers, enhance the service lifetime of the polymer product or to suit some special end use requirement of the merchandise. Plasticizers are chemical compounds that enable the assembly of concrete with ca. 15% less water content. Superplasticizers allow reduction in water content by 30% or more. These additives are employed at the extent of a couple of weight percent. Plasticizers and superplasticizers retard the curing of concrete. Enzymes are composed primarily of proteins, which are polymers of amino acids. They're special proteins that speed up reaction s by lowering the energy of activation needed to start out the chemical reaction. No, u cannot call enzyme because the polymer. Numerous factors affect various mechanical properties of polymers, including relative molecular mass, processing, extent and distribution of crystallinity, composition of polymer, and use temperature. Plastination may be a technique or process utilized in anatomy to preserve bodies or body parts, first developed by Gunther von Hagens in 1977. Initiation of cross-border co-operations between scientists and institutions is facilitated at the conference. This is an excellent opportunity for delegates from universities and institutions to interact with leading industry experts and debate on the latest regulatory updates.The water and fat are replaced by certain plastics, yielding specimens which will be touched, don't smell or decay, and even retain most properties of the first sample. If you'll remember, plasticizers are made up of main phthalates in an ether to be utilized in various materials. However, they're also made with several other chemical ingredients to supply them with their elastic and versatile methods. Skin absorption of phthalates as 'significant' as inhalation. A gaggle of yank, Danish and German researchers say they need shown experimentally that absorption of phthalates from the air, via the skin, is simply as important as inhalation. Industry having vast availability of talented and skilled scientific manpower; to make scientific and business collaborations with all the pharma industries /companies globally with an aim and vision of making INDIA as top player in global pharma industry. Processing additives are added to polymers to enhance its processing character without affecting the physical properties of the polymer. They include lubricants (internal and external lubricants), processing aids, and heat stabilizers. These additives are added to switch the optical property of the polymer. The foremost common polymer additives are stabilizers, plasticizers, lubricants and flame retardants. Stabilizers are added to prolong the useful lifetime of a polymer formulation by protecting it from thermal and light-assisted oxidation. DNA may be a polymer. The monomer units of DNA are nucleotides, and therefore the polymer is understood as a "polynucleotide." Each nucleotide consists of a 5-carbon sugar (deoxyribose), a nitrogen containing base attached to the sugar, and a phosphate group. Steroids aren't considered true lipid polymers because their molecules don't form a carboxylic acid chain. Instead, steroids are composed of 4 fused carbon ring-like structures. Nucleic Acids: molecules consisting of nucleotide monomers linked together to make polynucleotide chains.

Biography

Amol M. Sabale, doing M.Pharm (Pharmaceutics) in Tatyasaheb Kore College of Pharmacy, Warananagar, Shivaji University, Kolhapur. Qualified GPAT and entrance examination for NIPER in 2011. Presented posters in various national and international conferences.

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