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Development of a Textile with Silica coating for environmental friendly control of insects in Agricultural production

Deliverable [5]: *[Die set-up in lab scale]*

Version 1.0: first version delivered on 31-08-2018

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Project Details:

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Project Acronym: AgriTexSil

Proposal Number: T2DGE-0120

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Lead beneficiary: ITA

Involved Partners: Thrace NG

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Abbreviations:
ITA: Institut für Textiltechnik, Germany
UTH: University of Thessaly, Greece
ThraceNG: Thrace Nonwovens & Geosynthetics S.A.
P&S: Powder and Surface GmbH

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1. Introduction

1.1 Die and material selection

The filter testings have been carried out at ITA within the first four months. For the chosen polymer and die on the filter tester "A800" of ITA to ensure long term spinning of the material with the selected die. The goal of this work package is to find a die set-up to achieve 6 h of spinnability and at the same time not to overshoot a pressure limit of 120 bar. The principle die-set up was defined is depicted in figure 1:

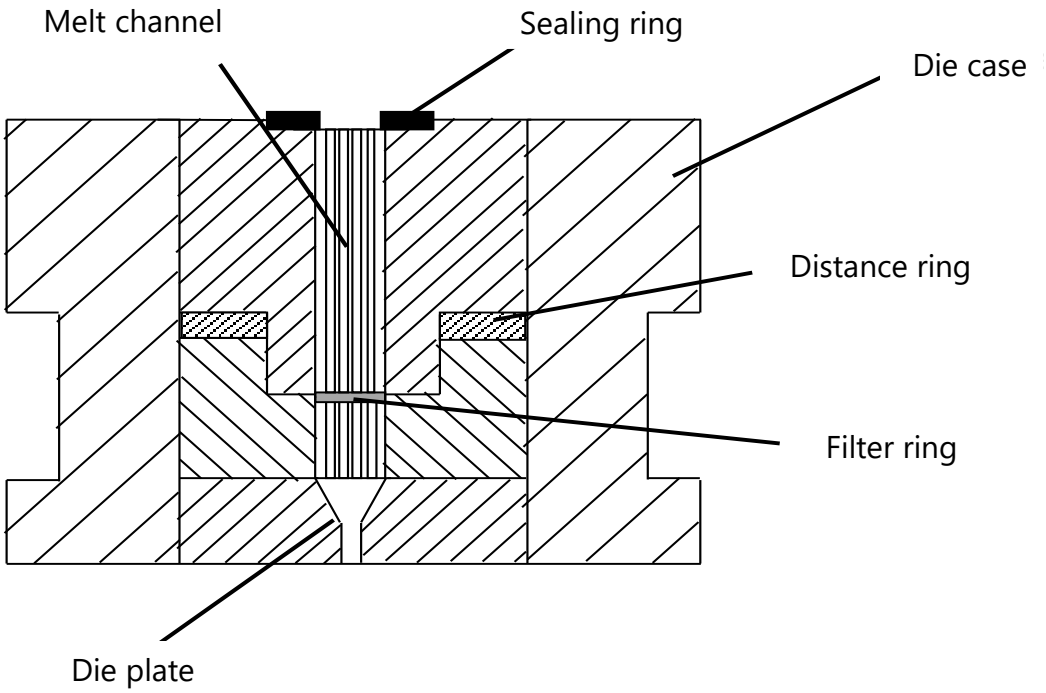

Figure 1. Die set-up for a mechanical and thermal homogenization of the melt

1.1.1 Polymer

The filter testings have been carried out at ITA within the first four months. After examination together Thrace NG, an HDPE was chosen as basis polymer (REPSOL ALCUDIA M5309). This polymer is produced by REPSOL S.A., Madrid, Spain, and is suitable for the production of flexible mono filament insect nets. As a first step, a compound has been produced, consisting of 96.5 % w/w. table 1 shows the most important material properties. Moreover the compound contains 2.5 % w/w of UV-stabilizer and 1 % w/w of a processing aid.

Del [5]: [Die set-up in lab scale]

The deliverable is available upon request

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