

# Learning Path Additive Manufacturing Data Preparation Specialist – Polymer



Additive Manufacturing  
Data Preparation Specialist – Polymer

Bring everything together and excel your personal skills

Article N°: 500008822  
Venue: Online and self-study  
Study Time: 64 hours  
Ideal length: 4 to 6 weeks  
Language: English

**Hardware & Software prerequisites**  
PSW P396  
EOS Material Set EOS PA2200 (license key 20088)  
EOS Material Set EOS TPU 1301 (license key 20217)  
Materialise Magics 24.1  
SG + Materialise EOS Build Processor

Learning Method

- E-Learning 
- Webinar 
- Video 
- Live Event 
- Practice Task 
- Certificate 
- Q&A Session 

Realize your full potential and become an expert in  
your Additive Manufacturing (AM) field, as a certified  
**EOS AM Data Preparation Specialist in Polymer**

Gain skills in

- Quick and efficient data preparation for polymer 3D printing
- Recognizing the main challenges of applications
- Leveraging software to make the impossible possible

Additive Manufacturing  
Data Preparation Specialist – Polymer

64 h

Phase 1  
**EOS Technology –  
Introduction**

*Generate knowledge about  
the EOS systems and software*

Phase 2  
**Build Up Your  
Know-How**

*Master the data  
preparation software*

Phase 3  
**Apply Your  
Knowledge**

*Increase the complexity of your build  
jobs and create repeatable quality*

Phase 4  
**Demonstrate What  
You Have Learned**



## Phase 1 EOS Technology – Introduction

### 1. Welcome

#### Video (0.5h)

In this short video, you will learn about the 4 phases, and receive an understanding of your learning path and methods you should use. Once you complete all of your learning path, then you will be able to:

- Understand 3D printing and SLS
- Apply data preparation theory to real cases
- Understand exposure parameter
- Know the characteristics of certain materials and chose the suitable materials
- Understand the different quality measurements

### 2. General Technology Introduction

#### E-Learning (2h)

Understand the process of 3D printing for polymer and receive a first insight into the EOS systems and their functionality. Learn about the data preparation process and the EOS system components such as recoater, build plate, and laser system.

### 3. Part Screening and Selection

#### E-Learning (4h), Practice Task (1h)

An easy adaptable method to determine which applications have the highest potential within your portfolio and evaluate the economical and the technical fit quickly and have a high-level assessment to determine a starting point for your journey.

Selection Exercise: Apply the part screening methodology to your own portfolio. You will fill out several scorecards of your own portfolio and discuss these with your colleagues, which will lead into a first rating of your portfolio into the ECO-TEC Matrix.

### 4. Get to Know Your New Job Role and Your Stakeholders

#### E-Learning (0.5h)

Realize the main tasks and responsibilities of an AM Data Preparation Specialist. Get to know your stakeholders and learn more about the handover process.

### 5. Data Preparation Basics – Materialise Magics

#### E-Learning (1h)

Learn the basics about data preparation for EOS polymer systems. We will focus on the building process as well as the digital chain for AM. You will learn how to create a scaled build scene, load parts, usage of fixing wizard, and z-compensation. Moreover, you will receive an introduction to the Materialise Magics software

### 6. Data Preparation Basic – PSW

#### E-Learning (1h)

Learn how to use the PSW software to apply standard exposure parameters. You will learn how to load default jobs, how to prepare a new job and how to save and export it.

### 7. Achieving Basic Quality

#### E-Learning (1h)

It goes without saying that quality is very important, especially as a Data Preparation Specialist, where your charter has a high impact on part quality. Therefore, you will spend time building up your quality knowledge regarding AM and SLS. You will get to know your role along the AM production chain and where you can influence part quality. After a definition of quality, you will learn about the Ishikawa model and how it helps you to create a quality case.

### 8. Exercises I – Materialise Magics

#### Practice Task (3h)

Apply your learning to your first tasks and get familiar with the data preparation software, Materialise Magics.

Compare your solution with our guide and ask remaining questions in the EOS online forum.

### 9. Exercise II – PSW

#### Practice Task (3h)

Apply your learning to your first tasks and get familiar with the data preparation software PSW.

Compare your solution with our guide and ask remaining questions in the EOS online forum.

## Phase 2 Build Up Your Know-How



### 10. Data Preparation: Positioning & Orientation

#### E-Learning (2h)

The EOS partner of choice for data preparation is Materialise and their software, Magics. It offers a wide range of functions to help you prepare your application for building. In this module you will learn more about measurements, layer-by-layer view as well as applying z-compensation. Therefore, you will get an introduction to positioning and orientation and the whole data preparation workflow.

### 11. Exposure Parameter

#### Webinar (3h)

In this module you will learn more about different exposure parameters and you will judge the usage of different exposure parameters depending on the parts criteria's (e.g. cost, time, quality).

### 12. Polymer Material Overview

#### E-Learning (1h)

Each material has its unique properties and will behave differently when melting. Some materials tend to have a bigger warpage, some less. By learning more about each material property, you will understand its implication for data preparation.

### 13. Case Study – Prepare your First Job in the Magics Software and evaluate your solution

#### Practice Task (8h)

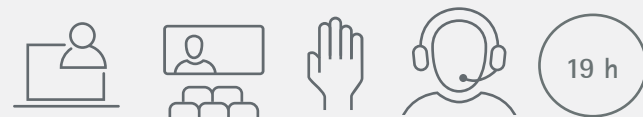
In this step you will apply all your learnings to the AM example. You are now ready for a more complex data preparation case. You will download different STL files and load them in your data preparation software. Here you will learn the difference in data import, how to use the main functions for orientation and positioning and where you should position the parts to guarantee the best results.

You will compare your solution with the EOS provided solution. All remaining questions can be asked in the EOS online forum.

### 14. Reflection

#### E-Learning (1h)

Reflect on your current learning progress and be encouraged to engage in online discussions. This will boost your motivation, as we know work and life can be challenging sometimes.



## Phase 3 Apply Your Knowledge

### 15. Data Preparation Advanced I

E-Learning (3h)

In this module you will learn more about data preparation. Topics will vary from data repair in Materialise Magics Software, such as a fixing wizard, as well as different layer thicknesses, and how it influences the part quality. Also, you will get a first understanding of beamoffset, z-compensation as well as scaling.

### 16. Data Preparation Advanced II

Webinar (5h)

With an EOS Expert you will apply your theoretical knowledge about positioning and orientation theoretical knowledge to real world examples.

### 17. Achieving Quality – Advanced

E-Learning (2h)

What is your influence of quality as data preparation specialist? Learn more about the EOS quality job to ensure high part quality and learn to use and judge it. You will also learn more about density testing.

### 18. Case Study – Apply your new skills to a more difficult build job

Practice Task (8h)

Nothing is better than real life examples, so now it is time to apply all your learnings to this intermediate case. In this case study the job preparation, positioning, and orientation, is already done and the parts are sliced. Your task is to load the given parts in PSW and choose the best exposure parameter for each part.

You will compare your solution with the EOS provided solution, and all remaining questions can be asked in the EOS online forum.

### 19. Questions & Answers: Prepare for Your Final Exam

Q&A (1h)

Do you have any open questions before you start with your final exam? Now is the time to ask our experts.



## Phase 4 Reflect on What You Have Learned

### 20. Practical Test: Final Exam Part I

Practice Task (8h)

Show your expertise for data preparation in this practical test. You will choose between different orientations and judge its advantages and disadvantages.

### 21. Theoretical Test: Final Exam Part II

Practice Task (1h)

Show your expertise for data preparation in this theoretical test.

### 22. Farewell

Video, Certificate, Live Event (4h)

Congratulations, you mastered the learning path and you are now an AM Data Preparation Specialist for Polymer! Have a look into your new future and receive your certificate.

# Additive Minds Academy Making Additive Manufacturing Expertise Accessible

Additive Minds Academy is the training and knowledge transfer provider of EOS. Our portfolio caters to a wide range of roles, such as machine operators, application specialists and production managers. All of our trainers have years of experience with EOS solutions and are familiar with the specific challenges that you are facing.

Our certified learning paths combine online education with traditional classroom methods. This blended learning concept gives you much flexibility – you decide the instruction method that best suits your learning style. Each learning path is an ideal sequence of learning activities that help you reach your full potential for AM as quickly as possible.

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Ready to learn?  
For further information please contact us:  
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