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| **Application ID (as it appears in the application form / change notification form)** |
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* [X] in this document indicates a document to be named including page number – submitted for evidence. Grey text (for guidance) may be replaced/deleted.
* In case of a Change Notification, please only fill in the applicable sections.

# Short Product Description relevant for Irradiation Sterilization

*Note: Please replace italic text with respective information*

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| **Short description incl. picture of the device** - in case of changes, as far as relevant |
| Description of the device as far as relevant for sterilization (pictures for clearer understanding):  *To be added*  *Product schematic and / or photo of product, size, material, Intended Use / Intended Purpose according to IFU (inclusive total application duration, body contact, implantable, patient group), packaging description, picture*  Variants under assessment:  *To be added*  *Product variants (e.g. same product in different SBS (Sterile Barrier System Specifications), Multiple products in same SBS)*  *Description of the Sterile Barrier System Specifications used at sterilization* |

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| **Has this product previously been assessed by TÜV SÜD Product Service?** |
| *If yes, please provide 10-digit order no. usually starting with 071xxxxxxx, or equivalent traceable information* |

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| **Manufacturing facility and certification status of the applicable sterilization sites / facilities** | | |
| *Manufacturing site to be named (device) including sterile packaging* | *Please provide the applicable QMS Certificate 13485 of the used sterilization site* | |
| *Manufacturing site to be named (device) if multiple site can produce the device /or parts thereof contributing to a different bioburden* | *Please provide the applicable QMS Certificate 13485 of the used sterilization site* | |
| *Sterilization site to be named for routine sterilization and Dose distribution measurement* | *Please provide the applicable QMS Certificate 13485 of the used sterilization site* | Gamma   E-beam   X-ray |
| *Sterilization site to be named for Dose Verification Experiment* | *Please provide the applicable QMS Certificate 13485 of the used sterilization site* | Gamma   E-beam   X-ray |

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| **External laboratories if used for sterilization validation and certification status of the laboratory** | |
| *Name of the laboratory* | *Please name the test done by the laboratory (e.g. microbiology BI testing, sterility testing, bioburden, endotoxin testing). Please provide the applicable accreditation certificate (e.g. ISO 17025 or GLP)* |
| *Name of the laboratory* | *Please name the test done by the laboratory (e.g. microbiology BI testing, sterility testing, bioburden, endotoxin testing). Please provide the applicable accreditation certificate (e.g. ISO 17025 or GLP)* |

# Production related Information

## Equipment Specification

*Note: Please replace italic text with respective information. Please add additional lines if required.*

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| **Equipment including Identifier (e.g. int. ID/ serial number)** | **Site** | **Applicable processing category operated by the equipment for the device in question** | **Type of irradiation technology** | **Irradiation source** | **Measurement equipment (e.g. timer, dosimeters…) calibrated (statement sufficient)** |
| *e.g. Irradiator A10* | *Inhouse or external source* | *Please name the processing category* | Gamma   E-beam   X-ray | *e.g. Co60 E-beam 6 MeV* | Yes  No |
| *e.g. Irradiator X16* | *Inhouse or external source* | *Please name the processing category* | Gamma   E-beam   X-ray | *e.g. Co60v E-beam 6 MeV* | Yes  No |
| *…* | *…* | *…e.g.* | *…* | *…* | *…* |

## If Applicable: Cleaning of Product in Manufacturing before Sterilization

Note: Please replace italic text with respective information. Please add additional lines if required.

In case of changes, as far as relevant.

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| **Cleaning process description** | |
| Are parameters that are specific for the medical device defined, such as specific load configuration, positioning, connection, accessories, process chemicals, pressures or temperature limit(s)? | yes documented in *[X,p.y]*   no *please justify:*  Please describe the cleaning cycle: |
| Were cleaning studies performed at validation of the used equipment to approve the respective cleaning process step is able to deliver appropriate performance? | yes documented in *[X,p.y]*   no *please justify:* |
| Are process residuals within limits?  (Endotoxins, particles, org. inorganic contaminations, detergent residues with adequate risk related to the device and body contact) | yes documented in *[X,p.y]*   no *please justify:* |
| Are preventive maintenance (e.g. exchange of cleaning media and or equipment) operations defined including frequencies. | yes documented in *[X,p.y]*   no *please justify:* |

## If Applicable: Disinfection of Product in Manufacturing before Sterilization

*Note: Please replace italic text with respective information. Please add additional lines if required.*

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| **Disinfection process description** | |
| Are parameters that are specific for the medical device defined, such as specific load configuration, positioning, connection, accessories, process chemicals, pressures or temperature limit(s)? | yes documented in *[X,p.y]*   no *please justify:*  Please describe the disnfection cycle: |
| Were disinfection studies performed at validation of the used equipment to approve the respective disinfection process step is able to deliver appropriate performance? | yes documented in *[X,p.y]*   no *please justify:* |
| Are process residuals within limits?  (Endotoxins, particles, org. inorganic contaminations, disinfectant residues with adequate risk related to the device and body contact) | yes documented in *[X,p.y]*   no *please justify:* |
| Are preventive maintenance (e.g. exchange of disinfection media and or equipment) operations defined including frequencies. | yes documented in *[X,p.y]*   no *please justify:* |

## If Applicable: Clean Room Control / Validation

*Note: Please replace italic text with respective information. Please add additional lines if required.*

*This section is applicable to be filled in case of first evaluation of the clean room or in case of changes occurred to the clean room (e.g. new clean room, modification of the cleanroom and changes to the setup of the points listed in the table below).*

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| Cleanroom | *Please identify the cleanroom where the manufacturing takes place* |
| Are action and alert Limits set appropriately for the subsequent product bioburden in cleanroom processes? | yes documented in *[X,p.y]*   no *please justify:*  Acceptance criteria:  Airborne particles [*size*]: particles/m3  Airborne microbiological contamination: cfu/m3  Surface microbiological contamination: cfu/m2  Product Bioburden: cfu *(type – spores, fungi, anaerobe, bacteria)* |
| Monitoring points are defined for the above-mentioned measurements | yes documented in *[X,p.y]*   no *please justify* |
| Was IQ, OQ, PQ of the cleanroom successfully established? | yes documented in *[X,p.y]*   no *please justify:* |
| Is all measuring equipment in a calibrated state? | yes documented in *[X,p.y]*   no *please justify:* |
| Are utilities and media under surveillance | yes documented in *[X,p.y]*   no *please justify:*  *Please specify what media and related acceptance criteria are defined.*  *e.g. for water, compressed air…* |
| Are environmental parameters defined | yes documented in *[X,p.y]*   no *please justify:*  Please specify where applicable:  Temperature:  Humidity:  Pressure gradient:  Air change rates: |

## Process Specification

*Note: Please replace italic text with respective information for inhouse and outsourced processes.*

*Please add additional lines if required.*

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| Sterilization process/process category | *Please specify the identifier or the applied sterilization process* |
| Production frequency | Single Batch Production/Validation *“infrequent” production”*    Multiple Batch Production/Validation *“frequent” production* |
| Product density rage covered by the sterilization cycle | *Please specify the product densities that are covered by the above-mentioned process.* |
| Is re-sterilization allowed? | Yes  *Please name the amount of resterilizations allowed*  No |

## Basic Validation Development Data

*Note: Please replace italic text with respective information.*

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| Validation method | VDmax15 (Overkill for Ø Bioburden < 1.5)    VDmax25 (Overkill for Ø Bioburden <1000)    Method 1 (Bioburden)    Method 2 (Fraction Positive)    Other: *Please specify and add rationale for not using a standardized method* |

## PPQ Physical Performance Qualification – Dose Distribution Determination

*Note: Please replace italic text. Please add additional lines if required.*

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| **Dose distribution determination (dose mapping)** | |
| Dosimeter type/manufacturer used during dose mapping? | *Please specify the dosimeter and type (e.g. PMMA Dosimeter, Alanine dosimeter etc…) and manufacturer. Traceability to a national standard institute* |
| Are there multiple different pathways the product can take though the sterilizer? | yes documented in *[X,p.y]*   no  If yes, please describe the different pathways:  *Please provide a scheme, description or processing map to show the route taken.* |
| Is there only one fixed routine load covered by the performed dose mapping? | yes documented in *[X,p.y]*   no  *If no, please describe the different loads and how they are covered by a separate dose mapping* |
| How are the products arranged, packed and palletized before routine sterilization? | *Please describe and add pictures to this submission. The respective data is documented in [X]* |
| Was the above-described load used at dose mapping? | yes *[X,p.y]*  no *Please provide a description and justification* |
| How many dose mapping runs were performed? | *Please specify how many singular runs through the sterilizer with dosimeter readings were done. The respective data is documented in [X]* |
| Placement scheme and rationale of Dosimeters and amount thereof is provided? | Yes, documented in *[X,p.y]*   No, *please justify:* |
| Relation between monitoring (Reference position) and minimum and maximum dose? | *Is the dose measured at a refence position or in the minimum and maximum dose positions of the load in routine irradiation?* |
| What is the defined maximum dose which does not damage sterile barrier or product? | *Please specify the value that is covered by product development and functional testing for the device in question documented in [X]* |
| Was physical product and sterile barrier testing performed after worst case sterilization? | Yes, documented in *[X,p.y]*   No, *please justify:* |

## MPQ

*Note: Please replace italic text with respective information for inhouse and outsourced processes. Please add additional lines if required.*

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| **Bioburden determination** | | | |
| Is the product part of a product family? | | Yes  No | |
| If yes, please describe the product family(ies) regarding EN ISO 11137-2 section 4.2 (Defining product family and bioburden) | | *Please provide a rational based on the respective product family definitions (among: bioburden, raw materials, manufacturing place and steps…) and why the respective product are members of the same family. The respective data is documented in [X]* | |
| Reference product(s) (master product, simulated product...) chosen to be tested for the microbiological validation (bioburden and sterility testing) | | *Please specify reference product(s)*  Rationale for selection of reference product(s):  *Please add – The respective evidence data is documented in [X]* | |
| Which Sample item portion (SIP) is used for Bioburden Testing? | | *Please add the used SIP; please also add a rationale if a SIP <1 was used.* | |
| Was the packaging considered for bioburden? | | yes  no (please justify why it was not to considered)  *e.g. for double sterile barrier packaging the bioburden of the packaging has to be taken into account.* | |
| Tested types of microorganisms: | | Aerobic  Anaerobic  Fungi  Spores  This is documented in *[X]*  Rationale if not all four categories have been tested:  *Please add* | |
| Is Endotoxin Testing required for the product? | | yes  no *Please specify the method and related results. The data is documented in [X].* *(e.g. in case of direct contact to blood, CNS, eye or other systemic exposure)*  If yes, frequency of testing:  *Please specify*  This is documented in *[X]* | |
| Recovery Factor (RF) | | *What is the Bioburden Recovery Factor?*  This is documented in *[X]* | |
| How was the RF determined? | | *Please specify how the RF was determined, e.g. exhaustive extraction or inoculation method*  This is documented in *[X]* | |
| Detection limit of the bioburden determination | | *Please specify the sensitivity of the Bioburden test (e.g. >1 CFU or >3,5 CFU). Please add a justification if the detection limit was used for the average bioburden calculation (e.g. result ”<3,5 CFU” was rated as “average = 3,5”)*  This is documented in *[X]* | |
| Actual Bioburden Results (incl. RF) | | Averages | Number of tested devices |
|  | Lot 1 | *X* CFU *Please fill in…* | *e.g. 10* |
| Lot 2 | *Y* CFU *…the total number…* | *e.g. 10* |
| Lot 3 | *Z* CFU *…of tested devices…* | *e.g. 10* |
| Overall Average | *A* CFU *…per production Lot* | |
| Determined verification dose according to EN ISO 11137-2 | | *X,X kGy* This is documented in *[X]* | |

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| **MPQ processing – dose verification experiment** | |
| Which SIP is used for sterility testing? | *Please specify the used Sample Item Proportion (SIP)*  This is documented in *[X]* |
| Was the packaging considered for the sterility test? | yes  no *(please justify why it was not considered)*  *e.g. for double sterile barrier packaging the outside of the inner sterile barrier packaging must be sterile..* |
| What was the achieved verification dose? | *Please add the result* kGy  This is documented in *[X]* |
| Result: How many unsterile / sterile samples were found? | *e.g. dose determination 1+/100 (last dose audit 0+/10)*  This is documented in *[X]* |
| Test on sterility incubation conditions: | Media: *Please add*  Incubation conditions (time, temperature): *Please add*  This is documented in *[X]* |
| Method validation:  Was a bacteriostasis / fungistasis test performed? | yes  no (please justify)  If yes, please specify strains used for test:  *Please name the strains that are documented in [x]* |

# Routine Processing

*Note: Please replace italic text with respective information.*

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| **Routine Processing** | |
| Sterilization Load Density / Range allowed for the sterilization cycle | *[e.g. g/cm³]*  This is documented in *[X]* |
| Is the routine load (density and distribution thereof in the load) identical to the load used at dose mapping? | yes  no (please justify) |
| Allowed Dose Range for the whole load [kGy] | *Please specify what dose range is allowed to be achieved in the load based on the routine sterilization cycle description*  This is documented in *[X]* |
| The routine release related dose is measured in the following position | *Please specify the positions in the load used for routine release of the load.*  This is documented in *[X]* |
| Bioburden Limits/levels (Alert, Action): | Alert limit/level: *cfu/device*  Action limit/level: *cfu/device*  This is documented in *[X]* |
| On which rationale are the bioburden limits/levels based? |  |
| Please provide bioburden trending data of the last year | *Please provide the bioburden trending data as a summary of the last year, if not available at least for the validation LOT.* |

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| **Revalidation** | |
| How often are dose audits performed? | *Please specify the dose audit frequency*  This is documented in *[X]* |
| How often is bioburden determined? | *Please specify the bioburden frequency*  This is documented in *[X]* |
| How often is a dose mapping performed? | *Please specify the dose mapping frequency*  This is documented in *[X]* |
| How often is the validity of product families and processing categories evaluated? | *Please specify the frequency of verifying the sterilization*  This is documented in *[X]* |
| Please specify the requalification requirements | *What are further criteria that trigger a revalidation study (e.g.product changes…)?*  This is documented in *[X]* |

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| **Regulatory release by client:** |  |  |  |
|  | Date | Signature | Name |
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|  |  |  | Name of Legal Manufacturer |

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