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Mini Review

A Review On Drug Master File

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ABSTRACT

Master file on drugs A "DMF" is a document that includes details about the procedures, facilities, or materials used in the manufacturing, processing, packing, and storage of one or more human pharmaceuticals. A DMF contains information about the chemistry, manufacturing, and control of a drug component. A DMF is filed when two or more companies work together to develop or produce a medicinal product. Businesses can protect their partner's intellectual property by completing a DMF and following the regulatory requirements for processing information disclosure. Details about a drug formulation's chemistry, stability, purity, manufacture, packaging, impurity profile, and cGMP status are available in the DMF.Without researchers, no single chemical entity would be marketed; in particular, medical researchers and specialists worked tirelessly to ensure that they would receive regulatory authority clearance; DMFs, which have two parts and five types as discussed in this review article, must be submitted to the Food and Drug Administration.

INTRODUCTION

Definition of DMF

A drug master file, or DMF, is a written report that is filed to the Food and Drug Administration that includes private information about the procedures, facilities, or materials that are used in the manufacturing, processing, packing, and storage of one or more human pharmaceuticals. (1,2) The pharmaceutical corporation drafts the DMF and, at its exclusive discretion, submits it to the appropriate regulatory agency in the intended medication market. A DMF is frequently needed to be submitted when two or more companies work together on the research and manufacturing of a pharmaceutical formulation or product. A company can protect its intellectual property with its partner and comply with legal requirements for processing information disclosure by filing a DMF. (3,4) A DMF is created using comprehensive data pertaining to the active pharmaceutical ingredient (API), a finished drug formulation, or a dosing form. It is known as the US-Drug Master File (US-DMF) in Europe and

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the European Drug Master File (ASMF) in the US. Any human dosage form containing a drug's chemistry, stability, purity, production, packaging, impurity profile, and cGMP status are all covered in detail by the drug's detailed manufacturer's label (DMF). (5,6) The term "DMF" describes the filing of data supporting a third party's submission to the FDA for review. The Chemical, Manufacturing, and Controls (CMC) of a drug product component are frequently the subject of the data. A DMF may contain information about pharmaceutical goods or other non-CMC information. (Alternatively) The Food and Drug Administration (FDA) may receive a DMF submission that provides confidential, comprehensive information about the facilities, practices, or materials utilised in the manufacturing, processing, packaging, and storage of one or more human pharmaceuticals. (7,8)

Parts of DMF

DMFs typically consist of two parts: (9,10)

1. **Part of the applicant:**

For marketing purposes, the licence holder is required to assess this non-confidential information.

2. **Restricted Part:**

Private information about the manufacturing process is contained in this section, which can only be provided to authorities.

Types of DMF (1,7,9)

Type I DMF:

The type I DMF covers the manufacturing site, facilities, operational protocols, and personnel. The author of this type of DMF might provide information to the FDA so that it might conduct site visits outside of the United States. A detailed description should be provided of the manufacturing site, the equipment's configuration, and its capacities. The holder is required to supply a map of the site, the entire area, and a physical address. The working layout can be shown using an example of the primary production and processing regions.

Table 1. Types of DMF

Sr.no	DMF types	Information
1	Type I	Data related to manufacturing units such as the name of manufacturing sites, facilities, operating procedures and professionals
2	Type II	Data related to the drug such as drug substances and intermediates, the materials involved in the manufacturing etc.
3	Type III	Data regarding the packaging material
4	Type IV	Data about the excipients, colorants, flavors, etc.
5	Type V	Reference information accepted by the FDA

Type II DMF:

Type II DMFs provide information on drug substances, drug substance intermediates, and materials used in the production of an API or a drug formulation. Type II DMFs are the most common to be filed, because they permit the inclusion of dosage from drugs manufactured under contract for a different company that would file an ANDA. (1,7,9)

Type III DMF:

Private specific information on the facilities, practices, or equipment used in the production, processing, packing, and storage of one or more human medicines can be provided through a Drug Master File (DMF), an FDA-mandated document. The FDA regulations and the legislation do not require the filing of a DMF. A DMF is never submitted unless the holder requests it. The data in the DMF may be used to support an export application, an investigational new drug application (IND), a new drug application (NDA), an abridged new drug application (ANDA), an alternate DMF, or updates and changes to these. (1,7,9) A DMF cannot be replaced by an export

application, an IND, an NDA, or an ANDA. It is neither accepted nor rejected. just. A DMF's main objective is to keep the holder's confidential information—like a manufacturing method—private. It also allows FDA reviewers to look at information to support applications that one or more applicants have provided. DMFs frequently address the Chemistry, Manufacturing, and Controls (CMC) of an ingredient used in a drug product, such as an excipient, a packing material, or the active pharmaceutical ingredient. Information on drug products or non-CMC information may be found in a DMF. (7,12)

Type IV DMF

Getting Ready Materials classified as Type IV DMF include Excipient, Colourant, Taste, and Essence. The production process, testing protocols, and standards for these additives need to be recorded. These materials' toxicological data must also be included in the same DMF. New additives must file a DMF if the USP-NF or the applicable regulations do not conveniently provide the CMC and safety information. A distinct Type V DMF or Module 4 of the Type IV DMF may provide a non-clinical safety assessment of the novel excipient. The safety information on the possibility of infectious agent contamination of animal-derived excipients must be provided, and the relevant parties must be notified right away. (9, 10)

DMF Type V:

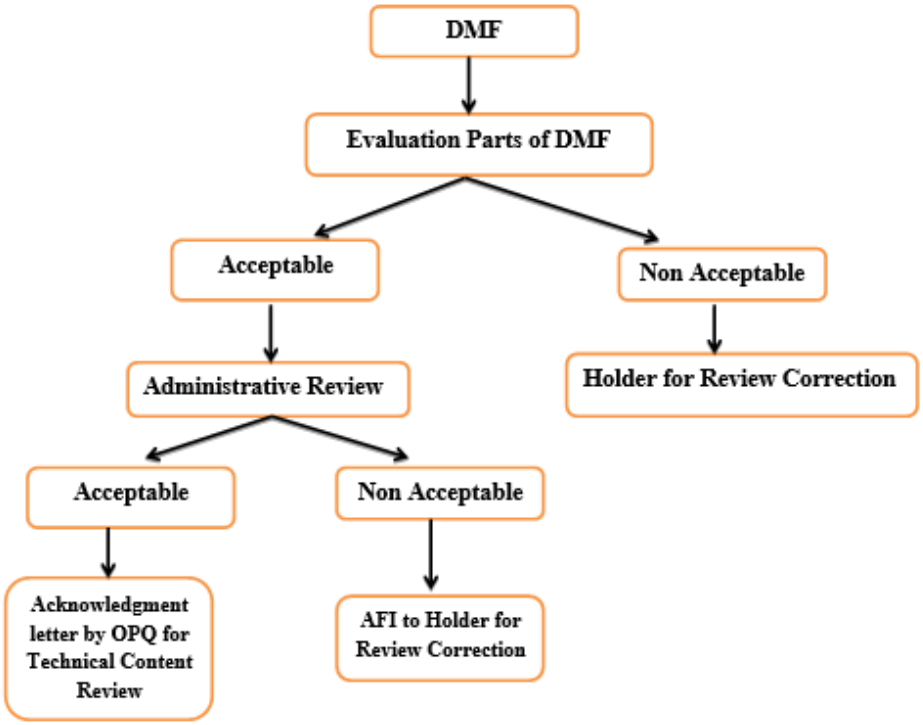
Information that is not covered by Type II and Type IV DMF can be transmitted via Type V DMF, including data from clinical and non-clinical investigations, shared system REMS, contract manufacturing facilities, sterilising procedures, and medical devices. Device master files may contain in-depth information regarding specific manufacturing methods, procedures, or components used in the production, processing, or packaging of medical devices. They may also contain information on completed medical devices. (1,6,13)

Table 2.The comparative study of DMFs between the US, EU, and India (11-15)

S.no	Parameters	US	EU	India
1.	Regulatory Authority	Food and Drug Administration (FDA)	CEP: European Directorate for Quality of Medicines and Healthcare (EDQM) ASMF: European Medicines Agency (EMA)	Central Drug and Standard Control Organization (CDSCO)
2.	Use of DMF in Support of Application	IND, NDA, ANDA	MAA	MAA
3.	Mandatory	No	No	No
4.	Information Provided	Drug Substance Intermediate, Drug Products, Flavours Etc.	Active Substance	API, Drug Products, Flavours, Colorants, etc.
5.	Fees for Assessment	Only for ANDA	No Fee	No Fee
6.	Submission in CTD Format	Required	Required	Required in Indian CTD format.

7.	Forms for DMF Filling	Not Applicable Except Type I DMF, Form FDA 3794	Not Applicable	Not Applicable
8.	Language	English	English	English
9.	Submission of DMF	eCTD format	eCTD format	eCTD format
10.	DMF Number Assigned by Reviewers	Yes	No	No
11.	Approved/Disapproved by Regulatory Authority	Not Approved and Only Accepted in Support of Applications	Only Accepted	Only Accepted
12.	Deficiency Letter	Applicable	Applicable	Applicable
13.	Changes and Approved	Applicable	Applicable	Applicable
14.	Appointment of In-Country Care Taker	Applicable	Applicable	Applicable
15.	Letter of Authorization	Applicable	Applicable	Applicable
16.	Closure or Withdrawal	Applicable	Applicable	Applicable
17.	Reactivation	Applicable	Applicable	Applicable

Mechanism of DMF Filing (1,7,9)



CONCLUSION:

Complete and accurate information regarding the active pharmaceutical ingredient or completed drug dosage form, as well as CMC data (chemistry, manufacturing, stability, purity, impurity profile, and packaging) for any drug product or excipient, are contained in the drug master file. DMFs are primarily used to support regulatory requirements for medicinal products, demonstrating their efficacy, safety, and quality in order to support the process of getting a market authorization grant.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this article.

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