STANDARD

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Batch Control Part 3: General and Site Recipe Models and Representation

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Preface

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This draft is structured to follow IEC (International Electrotechnical Commission) guidelines. Therefore, the first three clauses discuss the *Scope* of the standard, *Normative References*, and *Definitions*, in that order.

Clause 4, *Recipe Description*, is informative.

Clause 5 is normative. The intent of this clause is to describe the contents of general and site recipes.

Clause 6 is normative. The intent of the clause is to describe an object model of general and site recipes.

Clause 7 is normative. The intent of this clause is to describe a symbolic language for general and site recipe depiction.

Clause 8 is informative. The intent of this clause is to describe some aspects of general or site to master recipe transformation.

The annexes are informative.

This standard is intended for those who are:

a) responsible for defining product processing requirements;

b) involved in designing and/or operating batch manufacturing processes;

c) responsible for specifying controls and the associated application programs for batch manufacturing plants;

d) involved in the design and marketing of products in the area of batch control; or

e) use product information for the purposes of manufacturing or managing the manufacture of product.

The following individuals served as active members of ISA SP88 in preparing this Part 3 standard:

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Dedicated to Thomas G. Fisher

Almost alone, Tom Fisher initiated the highly visible and successful ISA SP88 batch control standards project, recruiting and energizing diverse committee members, serving as chairman through much of its early work, and continuing in the critical role of project editor until his untimely death. Generous with his time and unstinting in his efforts, Tom provided the leadership, technical expertise, editorial wisdom, and willingness to listen to and give credit to others that have been vital as the ISA 88 series has become a major force throughout the batch processing industries. Although this part of the standard was not finished when he passed away, it bears his imprint. It is dedicated to his memory as one of the giants in the industry.

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Foreword

The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

They have the form of recommendations for international use and they are accepted by the National Committees in that sense.

In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules insofar as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

The IEC has not laid down any procedure concerning marking as an indication of approval and has no responsibility when an item of equipment is declared to comply with one of its recommendations.

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Introduction

ANSI/ISA-88.01-1995, Batch Control Part 1: Models and Terminology (referred to as Part 1 throughout this standard) provides models and terminology applicable to batch control. ANSI/ISA88.00.02-2001, Batch Control Part 2: Data Structures and Guidelines for Languages (referred to as Part 2 throughout this standard) addresses data structures and guidelines for languages. This Part 3 standard defines additional information on general and site recipes. Clause 4 of this standard contains definitions of general and site recipes in greater detail than in Part 1. Clause 5 defines detailed description of the contents of general and site recipes. Clause 6 defines a data model that identifies objects and relationships that were addressed in Clauses 4 and 5. Clause 7 defines a method for depiction of general and site recipes that can be used for both simple and complex processing requirements, using both a tabular and a graphical notation. Clause 8 describes some aspects of general or site to master recipe transformation. The annexes provide complementary information.

Although this standard is intended primarily for batch processes, it may have considerable value for other types of processes as well.

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1 Scope

This Part 3 standard on Batch Control defines a model for general and site recipes; the activities that describe the use of general and site recipes within a company and across companies; a representation of general and site recipes; and a data model of general and site recipes.

2 Normative references

The following normative documents contain provisions that, through reference in this text, constitute provisions of this Part 3 standard. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of this standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid normative documents.

ANSI/ISA-88.01-1995, *Batch Control Part 1: Models and Terminology* (referred to in this standard as "Part 1").

ANSI/ISA-88.00.02-2001, *Batch Control Part 2: Data Structures and Guidelines for Languages* (referred to in this standard as "Part 2").

IEC 61512-1:1997, *Batch Control — Part 1: Models and Terminology*.

IEC 61512-2: 2001, *Batch Control — Part 2: Data Structures and Guidelines for Languages*.

ANSI/ISA-95.00.01-2000, *Enterprise-Control System Integration Part 1: Models and Terminology.*

ANSI/ISA-95.00.02-2001, *Enterprise-Control System Integration Part 2: Object Model Attributes.*

IEC 60050-351:1998, *International Electrotechnical Vocabulary — Part 351: Automatic Control.*

ISO/IEC DIS 19501-1: *Information Technology—Unified Modeling Language (UML) — Part 1:Specification.*

3 Definitions

For the purposes of this Part 3 standard, the following definitions apply. Definitions and concepts expressed in the Part 1 and Part 2 standards apply, except where differences are explicitly stated in this Part 3 standard. Definitions in IEC 60050-351:1998 were also used as a basis.

3.1 equipment-independent recipe:
a super class of a recipe type that is independent of equipment and follows the procedural model of general recipes.

3.2 master recipe transform component:
part of a master recipe that is used in the transformation of an equipment-independent recipe into a complete master recipe.

3.3 process procedure chart (PPC):
a method for the graphical representation of equipment-independent recipes.

3.4 product family:
a set of produced materials that are related by manufacturing business policy.

3.5 product grades:
a collection of similar materials with some variations in properties.