SESSION 2

The Future of Standard 20/7E and Future Pharma Committee Activity Areas

ista
PHARMA COMMITTEE
TECHNICAL EXCHANGE

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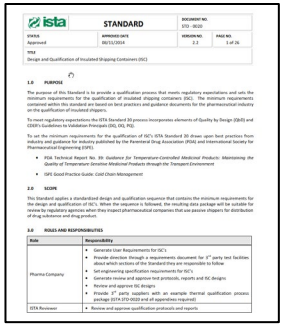
STD-0020:

- Design and qualification process that provides the structure and path to design, test, verify a specific Insulated Shipping Container (ISC) for use.
- Sets minimum requirements for qualifying insulated shippers


ista STANDARD

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TITLE: Design and Qualification of Insulated Shipping Containers (ISC)

1.0 PURPOSE

The purpose of this Standard is to provide a qualification process that meets regulatory expectations and sets the minimum requirements for the qualification of insulated shipping containers (ISC). The minimum requirements contained within this standard are based on best practices and guidance documents for the pharmaceutical industry on the qualification of insulated shippers.

To meet regulatory expectations the ISTA Standard 20 process incorporates elements of Quality by Design (QbD) and CGMP's Guidelines to Validation Principals (GV, VV, PV).

To set the minimum requirements for the qualification of ISC's ISTA Standard 20 draws upon best practices from industry and guidance for industry published by the Parenteral Drug Association (PDA) and International Society for Pharmaceutical Engineering (ISPE).

- PDA Technical Report No. 39 *Guidance for Temperature-Controlled Medicinal Products: Maintaining the Quality of Temperature-Sensitive Medicinal Products through the Transport Environment*
- ISPE Good Practice Guide: *Cold Chain Management*

2.0 SCOPE

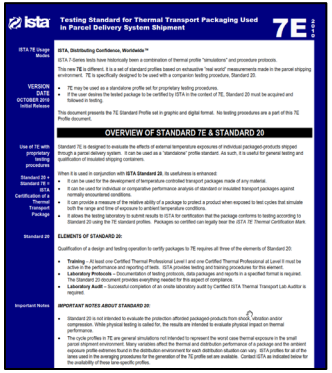
This Standard applies a standardized design and qualification sequence that contains the minimum requirements for the design and qualification of ISC's. When the sequence is followed, the resulting data package will be suitable for review by regulatory agencies when they inspect pharmaceutical companies that use passive shippers for distribution of drug substance and drug product.

3.0 ROLES AND RESPONSIBILITIES

Role	Responsibility
Pharma Company	• Generate User Requirements for ISC's • Provide direction through a requirements document for 3rd party test facilities about which sections of the Standard they are responsible to follow • Set engineering specification requirements for ISC's • Generate review and approve test protocols, reports and ISC designs • Review and approve ISC designs • Provide 3rd party suppliers with an example thermal qualification process package (ISTA STD-0020 and all appendices required)
ISTA Reviewer	• Review and approve qualification protocols and reports

STD-7E:

- Testing Standard for Thermal Transport Packaging Used in Parcel Delivery System Shipment.
- Includes heat and cold profiles developed from data gathered in real world transport.
- Intended to address issue of gauging ISC performance of designs across manufacturers by offering a standard profile for performance testing.


ista Testing Standard for Thermal Transport Packaging Used in Parcel Delivery System Shipment 7E

ISTA, Distributing Confidence, Worldwide™

ISTA 7-Series tests have historically been a combination of thermal profile "simulations" and procedure protocols.

This new 7E is different. It is a set of standard profiles based on exhaustive "real world" measurements made in the parcel shipping environment. 7E is specifically designed to be used with a companion testing procedure, Standard 20.

- 7E may be used as a standalone profile set for proprietary testing procedures.
- If the user desires the tested package to be certified by ISTA in the context of 7E, Standard 20 must be acquired and followed in testing.

This document presents the 7E Standard Profile set in graphic and digital format. No testing procedures are a part of this 7E Profile document.

OVERVIEW OF STANDARD 7E & STANDARD 20

Standard 7E is designed to evaluate the effects of external temperature exposures of individual packaged-products shipped through a parcel delivery system. It can be used as a "standalone" profile standard. As such, it is useful for general testing and qualification of insulated shipping containers.

When it is used in conjunction with **ISTA Standard 20**, its usefulness is enhanced:

- It can be used for the development of temperature controlled transport packages made of any material.
- It can be used for individual or comparative performance analysis of standard or insulated transport packages against normally encountered conditions.
- It can provide a measure of the relative ability of a package to protect a product when exposed to test cycles that simulate both the range and time of exposure to ambient temperature conditions.
- It allows the testing laboratory to submit results to ISTA for certification that the package conforms to testing according to Standard 20 using the 7E standard profiles. Packages so certified can legally bear the *ISTA 7E Thermal Certification Mark*.

ELEMENTS OF STANDARD 20:

Qualification of a design and testing operation to certify packages to 7E requires all three of the elements of Standard 20:

- **Training** – At least one Certified Thermal Professional Level I and one Certified Thermal Professional at Level II must be active in the performance and reporting of tests. ISTA provides testing and training procedures for this element.
- **Laboratory Protocols** – Documentation of testing protocols, data packages and reports in a specified format is required. The Standard 20 document provides everything needed for this aspect of compliance.
- **Laboratory Audit** – Successful completion of an onsite laboratory audit by Certified ISTA Thermal Transport Lab Auditor is required.

IMPORTANT NOTES ABOUT STANDARD 20:

- Standard 20 is not intended to evaluate the protection afforded packaged-products from shock, vibration and/or compression. While physical testing is called for, the results are intended to evaluate physical impact on thermal performance.
- The cycle profiles in 7E are general simulations not intended to represent the worst case thermal exposure in the small packaged-product environment. Many variables affect the thermal and distribution performance of a package and the ambient exposure profile extremes found in the distribution environment for each distribution situation can vary. ISTA profiles for all of the lanes used in the averaging procedures for the generation of the 7E profile set are available. Contact ISTA as indicated below for the availability of these lane-specific profiles.

ISTA Certified - Transport Lab vs Thermal Lab:

- Transport Testing Laboratory certification assures a laboratory is properly equipped to conduct ISTA pre transit package performance testing.
- Thermal Testing Lab certification enables compliance with ISTA Standard 20. A certified lab utilizing this process, in conjunction with thermal profile ISTA 7E, can qualify packaging solutions as 'Certified to ISTA Standard 20'.
  - Requires training and certification of lab personnel
  - Requires audit with initial certification and re-certification

ISTA Standard 20/7E General Overview

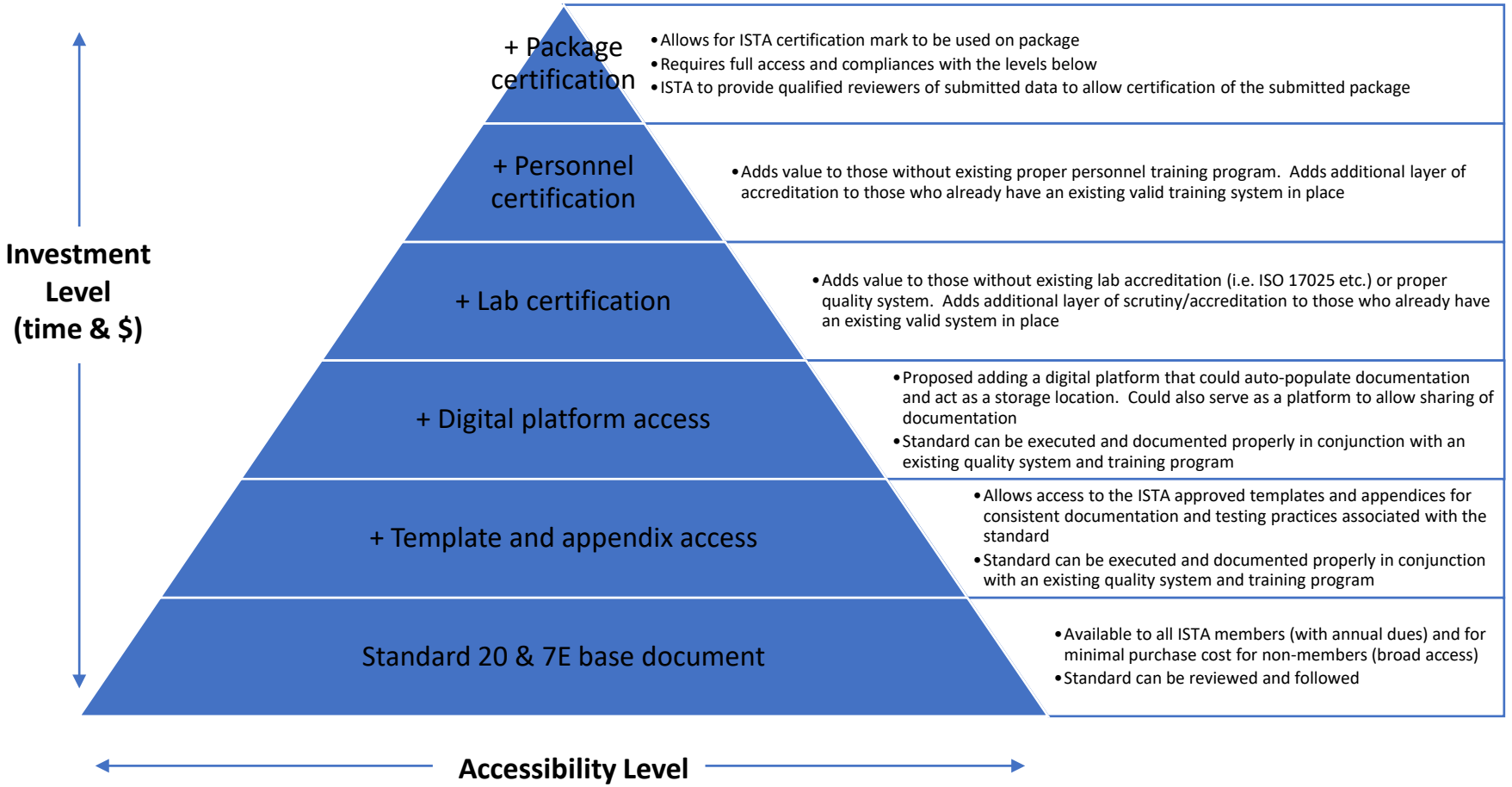
- Review and solicit feedback on one possible reorganization of Standard 20

<u>Identified Key Areas for Future Improvement & wider adoption</u>:

- Accessibility ($'s / time /availability)
- Flexibility (requirements of program and standard)
- Relevance & Intent (currently required? Restructuring and standard updates)

<u>Voice of Stakeholders</u>:

- Packaging supplier perspective – Scott Dyvig/Bill Mayer/TJ Rizzo
- Auditor perspective – Carolyn Williamson
- End user perspective – Arminda & Bryan?
- Independent test labs & other groups


+ Package certification
• Allows for ISTA certification mark to be used on package
• Requires full access and compliances with the levels below
• ISTA to provide qualified reviewers of submitted data to allow certification of the submitted package
+ Personnel certification
• Adds value to those without existing proper personnel training program. Adds additional layer of accreditation to those who already have an existing valid training system in place
+ Lab certification
• Adds value to those without existing lab accreditation (i.e. ISO 17025 etc.) or proper quality system. Adds additional layer of scrutiny/accreditation to those who already have an existing valid system in place
+ Digital platform access
• Proposed adding a digital platform that could auto-populate documentation and act as a storage location. Could also serve as a platform to allow sharing of documentation
• Standard can be executed and documented properly in conjunction with an existing quality system and training program
+ Template and appendix access
• Allows access to the ISTA approved templates and appendices for consistent documentation and testing practices associated with the standard
• Standard can be executed and documented properly in conjunction with an existing quality system and training program
Standard 20 & 7E base document
• Available to all ISTA members (with annual dues) and for minimal purchase cost for non-members (broad access)
• Standard can be reviewed and followed
Investment Level (time & $)
Accessibility Level

Open audience feedback and discussion:

- Pros & cons
- Alternative reorganization ideas?
- Would you use and promote Standard 20?

Next Steps:

- Vote if in favor or not of a reorganization of Standard 20 & full technical review

Committee Activity Overview

The ISTA Pharma Committee will sponsor different types of activities including:

- Best Practice Guidelines
- Short Technical Papers
- Benchmarking Discussion Groups
- Presentations
- Articles
- Data Sharing
- Technology Evaluations
- Industry Conference Discussions

Best Practice Guidance Overview

- The intent of the developed guidelines are to establish an **aligned industry best practices** for key industry topics.
- The goal is to have **principles described in this guideline be adopted by the entire pharmaceutical supply chain**, including manufacturers, suppliers of passive thermal packaging, logistic service providers, carriers, wholesalers, distributors, specialty pharmacies, and any other interested party.
- The **level of detail beyond the suggested industry best practice is the decision of the primary stakeholders** of the temperature-sensitive product, based on risk acceptance.
- While there are other guideline documents available in the industry, the ISTA Pharma Committee aims to **provide users with a how to guide to achieve success** on important industry topics **but allow users to work within their own internal procedures**.
- The goal for any activity from the ISTA Pharma Committee is to make the **content easily accessible to the industry as a whole and will be free of charge** when possible.

Committee Activity Status

Completed

1. "PCG-01: Reusable Passive Thermal Packaging System Best Practice Guideline" published August 2018
2. "PCG-02: Passive Thermal Packaging System Operational Qualification Best Practice Guideline" – published November 2020

In Process

1. PCG-00: Glossary of Terms – Available for Peer Review in March 2022
2. PCG-03: Performance Qualification/Verification Best Practice Guideline (final title to be determined) – Available for Peer Review in March 2022
3. PCG-04: Ambient Temperature Profile Best Practice Guideline (final title to be determined) –Available for Peer Review in March/April 2022

Future Topics of Interest

- Design Qualification
- Risk Assessment associated with Selecting and/or implementing temperature-controlled packaging
- Thermal Modeling
- Lane Qualification
- Sustainability
- Thermal Blankets/Covers
- RFP/URS Development
- Real-time monitoring
- Mechanical testing best practices: Bulk versus Parcel and Single Use versus Reusable
- Total Cost of Ownership
- Continuous Monitoring Strategies
- Qualification of Active ULD Solutions
- Temperature Monitoring Strategies
- Validation of Refrigerated trailers
- Ambient temperature lane data capture project
- Shipper Orientation
- Gene Therapy Strategy
- Ocean Freight
- Dry Ice Shippers
- Anti-counterfeiting and Product Security
- Long duration (>7 day) passive PCM and dry ice shippers
- Clinical, phase appropriateness testing strategy

2020 Next Activity Vote Review

- 70 Responses total
- Top 6 Topics
  - Performance Qualification/Verification
  - Ambient Temperature Profile Creation
  - Sustainability
  - Risk Assessment in Selecting Temperature-Controlled Packaging
  - Design Qualification
  - Mechanical Testing Best Practices
- The Next 4
  - Thermal Modeling
  - Dry Ice Shippers
  - Continuous Monitoring Strategies
  - Total Cost of Ownership

Topic	Votes
Performance Qualification/Verification	26
Ambient Temperature Profile Creation	22
Sustainability	19
Risk Assessment associated with Selecting temperature-controlled packaging	16
Design Qualification	16
Mechanical testing best practices: Bulk versus Parcel and Single Use versus Reusable	16
Thermal Modeling	15
Dry Ice Shippers	15
Continuous Monitoring Strategies	14
Total Cost of Ownership	13
Lane Qualification	12
Temperature Monitoring Strategies	11
Long duration (>7 day) passive PCM and dry ice shippers	11
Gene Therapy Strategy	11
Ambient Temperature Profile Comparison Methodology	10
Shipper Orientation	9
Real-time monitoring	9
Validation of Refrigerated trailers	8
Ambient temperature lane data capture project	7
Ocean Freight	7
Thermal Blankets/Covers	5
Clinical, phase appropriateness testing strategy	4
Qualification of Active ULD Solutions	4
RFP/URS Development	3
Anti-counterfeiting and Product Security	3
Fuutre Topics	1
Cell Therapy at (-196 Degree C)	1
Shipping with 2-8C service lane assesment	1
ISTA 7E and Standard 20 - current status and proposed updates	1
Simulated distribution testing.	1
What is the objective of this survey?	1
Strategies for documenting controlled temperature shipping systems in health authority submissions	1
Ecommerce. Evaluating performance of single item product shipping methods	1
Grand Total	**294**

Items to Consider when Voting on the Next Topics

- What do you think needs to be solved?
- What specific areas do you think should be addressed?
- What type of activity would address the need?
  - Best Practice Guidelines
  - Short Technical Papers
  - Benchmarking Discussion Groups
  - Presentations
  - Articles
  - Data Sharing
  - Technology Evaluations
  - Industry Conference Discussions

Next Steps

- You will receive a link to vote – please complete no later than **February 22nd, 2022**
- If you would like to join a specific project team or participate as an extended team member, please contact ISTA at ista@ista.org and include the Pharma Committee in the title.
- All new members will be added to the extended team and asked to provide peer review of all committee work.

We are looking for more involvement from all areas of the supply chain including:

- Medicinal product manufacturers
- Suppliers of passive thermal packaging
- Active thermal solution/service providers
- Transportation monitoring solution providers
- Logistic service providers
- Wholesalers
- Distributors
- Specialty pharmacies
- Industry subject matter experts
- and any other interested party.

Expectations of Membership

- Show respect among their peers
- Gain support from their organization to dedicate time & resources to participate in the group's efforts
- Actively engage in the development of technical content by sharing their/their company's views on individual topics but not share confidential information
- Be available and willing to participate in conference calls and in-person meetings, both for the group as a whole and individual sub-groups as needed
- Solicit the participation of key individuals or other organizations in the industry as required
- Allow their name to be used in association with any guidance developed by the group for which they are an active participant based on company approval
- Refrain from all commercial activity
- Attend monthly ISTA Pharma Committee Meeting: Committee Chair, Committee Members, and Core Team.

Additional questions or comments?

Send them via email to:

webinar@ista.org

Calendar of Events

- February/March 2022: Peer review of current activity work
- March/April 2022: Committee Member Nominations
- April 11-13, 2022: ISTA Forum TransPack & TempPack in San Diego, CA
- Q2 2022: Kick of new committee activities
- Q3/Q4 2022: Virtual Technical Exchange

ista FORUM 2022

TransPack | TempPack

APRIL 11-13 | SAN DIEGO, CALIFORNIA | MARRIOTT MARQUIS SAN DIEGO MARINA

PRE-FORUM TRAINING

April 11, 2022

- BioPharma Cold Chain 101
- URS to Operational Qualification
- Principles of Distribution Packaging
- Responsible Packaging by Design (RPbD) Training

Thank You