BMZ Federal Ministry for Economic Cooperation and Development

Material Management and Product Safety in the Chinese Toy Industry

中国玩具产业物料管理与产品安全

Training Course in Material Management – Trainer's Guide

物料管理培训——培训师指南

21 November 2014, Shenzhen

2014年11月21日，深圳

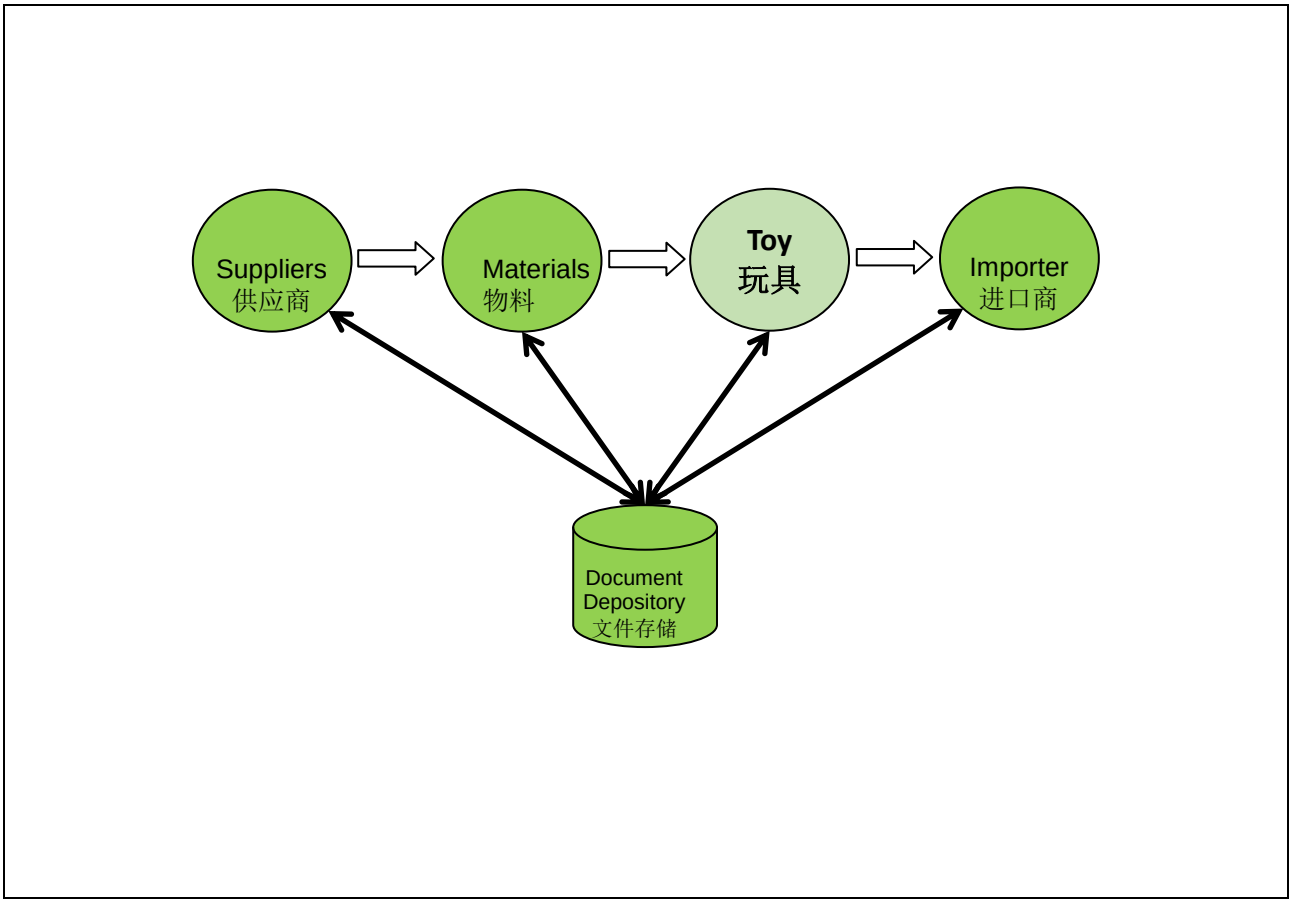
Schleich intelligent views develoPPP.de Implemented by giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Training Course in Material Management

Trainer's Guide

物料管理培训课程

培训师指南



Expert and Trainer:

Torben Rahbek

Table of Contents 目录

1 Introduction 简介 1

2 The Training 培训 1

2.1 Purpose 目的 1

2.2 Training objectives 培训对象 1

2.3 Structure 结构 2

2.4 Training method 培训方法 2

2.5 Participants 参与者 2

3 Workshop, Day 1, morning 研讨会第一天早晨 3

3.1 Welcome 欢迎词 3

3.2 Introduction 介绍 3

4 Workshop, Day 1, afternoon 第一天下午研讨会 9

4.1 Material Management in Practice 物料管理实践 9

5 Workshop, Day 2 第二天 研讨会 15

5.1 Recap of Day 1 回顾第一天 15

5.2 Material Management Systems, Components 物料管理系统组成部分 16

5.3 An Advanced Material Management System, the Schleich Case 思乐公司先进案例 25

5.4 Implementation of Material Management Systems 实施物料管理系统 27

5.5 Conclusion, Wrap-Up 结论、总结 28

1 Introduction 简介

This is the trainer's guide to a 2-day workshop on material management. The guide takes the trainer through the course slide by slide explaining the intention behind the slides and highlighting issues that should be emphasized for the participants.

这份文件是为期两天的物料管理培训的《培训师指南》。该指南为培训师解释每一页幻灯片背后的意图，并突出标明需要给参与者强调的内容。

The guideline follows the structure of the course closely and presents the hints and instructions to the training between the slides.

该指南紧密遵循课程结构，在幻灯片中介绍培训的相关提示和说明。

The workshop was prepared as part of the project "M-Nr. 2332 Schleich Traceability of Chinese Toys Products" that is undertaken by the Deutsche Gesellschaft fur Internationaler Zuzammenarbeit, GIZ. The development of the workshop had the task number 81178114.

此次培训是项目“M-Nr. 2332 思乐——中国玩具产品的可追溯性”的一部分，由德国国际合作机构 GIZ 负责。此培训的任务编号为“81178114”。

2 The Training 培训

2.1 Purpose 目的

The purpose of the training is to give Chinese manufacturers a basic understanding of material management and the pitfalls.

这次培训的目的是为中国制造商提供一个对物料管理和其误区的基本理解

2.2 Training objectives 培训目的

The training objectives are that the participants will:

- know what material management is;
- understand why material management is important;
- know the critical control points in material management;
- and learn about issues in implementing material management.

培训目标是使参与者能够：

- 了解物料管理是什么
- 明白为什么物料管理很重要
- 了解物料管理中的关键控制点是什么
- 学习实施物料管理的相关知识

2.3 Structure 结构

The training is divided over two days with the structure that can be seen below

培训分为两天，结构如下：

Day 1 第一天 ***morning:早晨*** • Welcome, introduction 欢迎词，介绍 • Material management, introduction 物料管理，介绍 • Legislation 立法 (Slides 1 – 28) ***afternoon:下午*** • Material management tasks 物料管理任务 (Slides 29 – 56)	***Day 2:第二天*** • Material management systems 物料管理系统 • Implementation 实施 • Evaluation 评估 (Slides 57 - 109)

Figure 1. Structure for material management workshop

表 1：物料管理研讨会结构框架

2.4 Training method 培训方法

The intention is that the workshop should be interactive with a lot of activity from the participants' side. 通过参加者的一系列活动实现研讨会的互动性。

The workshop will alternate between presentations from the trainer and discussions in small groups. Each working group would be made up of people all coming from the same company: Ideally, each group should consist of 3 – 7 participants.

In total, there should be 4 – 6 working groups and 20 – 30 participants.

研讨会中演示文稿和小组讨论交替进行。每个小组成员要来自同一个公司，每组 3-7 人。总计，4-6 个小组，20-30 人。

2.5 Participants 参与者

The training is aimed at businesses that on the one hand are so large that they are able to implement material management and on the other hand are so small that they do not already have it.

培训针对的公司规模是既可以植入物料管理，目前又还没有物料管理的公司。

The participants should be people responsible for the organizational development of the factories. They should have a high level of education in engineering or business administration. They would presumably hold positions like managing director, quality manager, purchase manager, development manager, production manager or similar.

参与者应是工厂组织发展相关负责人，具有工程或工商管理的高教育水平，所处总经理、质量管理经理，采购经理，开发经理，生产经理或类似职位。

3 Workshop, Day 1, morning 研讨会第一天早晨

3.1 Welcome, slide 1 – 3 欢迎词（幻灯片 1-3）

The purpose of this session is to present the trainer and the course for the participants.

展示培训师和参与者要接受的培训课程。

Training Course in Material Management 物料管理培训课程 Hotel Something, Shenzhen Y and (Y+1) November 2014 Torben Rahbek	Training Objectives 培训目标 • To know what material management is 了解物料管理是什么 • To understand why material management is important 明白为什么物料管理很重要 • To know the critical control points in material management 了解物料管理中的关键控制点是什么 • To learn about issues in implementing material management 学习物料管理实施中的问题 This is a pilot => Evaluation 首次培训=> 需要评估	Programme 日程安排 **Day 1第一天** ***morning:上午*** • Welcome, introduction 致欢迎辞，介绍 • Material management, introduction 简述物料管理 • Legislation 立法 ***afternoon: 下午*** • Material management tasks 物料管理的任务 **Day 2:第二天** • Material management systems 物料管理系统 • Implementation 如何实施运作 • Evaluation 评估 Alternating presentations and exercis Please ask questions 讲解和练习交替进行 请提问
(Remember to insert correct place and date in the slide.) （记住要标注正确的地点和日期）		

3.2 Introduction, slide 4 – 28 介绍（幻灯片 4-28）

The purpose of this session is to introduce the participants to the basics of material management and provide them with an understanding of why it is important.

这节的目的是向参会者介绍物料管理的基础并借此让参会者理解物料管理的重要性。

The session starts with the introduction and from slide 14 it moves into a discussion of the legislation that govern toys safety and chemicals in toys in Europe. The session ends (from slide 24) with an introduction to the sources for identifying additional national requirements.

这节开始是一段介绍，接着从 14 页开始转入关于欧洲玩具安全和玩具化学物质安全立法的讨论，会议结束前，介绍如何获取确认其他的国家的条例要求。（从第 24 页幻灯片开始）

Day 1, Morning
Introduction to Material Management
第一天，上午
简述物料管理

Programme 日程

Day 1, morning:第一天，上午

- Material management 物料管理
  - Introduction 简述
  - Our focus: Quality, safety and traceability
  - 关注重点：质量、安全和可追溯性
- Exercise 练习
- Legislation立法

Material Management, Introduction
物料管理，简介

Definition:定义

Material management is the process by which an organisation manages the materials that it buys, stores, moves and changes to produce its products to its customers with a minimum supply chain risk.

物料管理指一个部门负责物料的购买、储存、移动和改变，以最小的供应链风险向消费者提供产品的过程。

Material Management, Introduction
物料管理，简介

Important elements: 要素

- Specification and purchasing 规格和采购
- Storage and storage control 存储和存储控制
- Transportation and handling 运输和处理
- Manufacturing 制造业
- Handling of excess material (scrap) 处理多余物料（废料）

"Get the appropriate material of the right quality and the right quantity at the right place in the right time."

使用合适的物料：质量合格，数量正确，在正确的时间放在正确的地方。

Material Management, Introduction
物料管理，简介

The focus of this training 此项培训的重点是：

- Safety 安全
- (Quality) 质量
- Traceability 可追溯性

"Get **the appropriate material of the right quality** and the right quantity at the right place in the right time."

使用合适的物料：质量合格，数量正确，在正确的时间放在正确的地方。

Material Management, Inroduction
物料管理，简介

Why is material management important for a toy manufacturer?

为什么物料管理对玩具制造商很重要？

The workshop focusses on acquiring the appropriate material in the right quality, i.e. the properties of the material.

本次研讨会的重点：获取质量良好的合适物料，比如注意该材料的特性性能

Material Management, Why?
物料管理，为什么？

Legal requirement 立法要求

- Toys must be safe – wrong or unknown materials may make them unsafe

  玩具必须是安全的，使用错误的或者不知名的材料会使玩具变得不安全。
  - Contamination 污染
  - Scrap 废料
  - new supplier 新供应商
- Manufacturers must know what is inside the toy in every detail – otherwise it is prohibited to sell the toy in Europe

  制造商必须详细清楚玩具里面有什么，否则将禁止向欧洲出售玩具。

Material Management, Why?
物料管理，为什么？

The manufacturer's perspective 从制造商的角度来说

- It pays off 它带来的回报:
  - Fewer recalls of unsafe products => lower costs

    不安全产品召回少=>低成本
  - Better relations to European importers => better prices

    与欧洲进口商保持良好的关系=>更好的价格
  - Better reputation for Chinese toys => more business => better prices

    中国玩具获得更好口碑=>更多生意=>更好借钱

Material Management, Why?
物料管理，为什么？

The parent's perspective 从父母角度来说

- Toys must be safe for our children!

  玩具必须对我们孩子是安全的！
- Toys can be unsafe for two reasons:

  玩具不安全有两个原因：
  - Mechanical flaws (small parts, sharp edges or sharp pins and points)

    机械瑕疵（小零件，锐利边缘或锐利的针和点）
  - Chemical risks (poisoning, long-term effects, carcinogenic, reproductive damages)

    化学风险（中毒，长期影响，致癌，生殖系统损害）

Material Management, Introduction 物料管理，简介 • Chemical risks (poisoning, long-term effects, carcinogenic damages, reproductive damages): 化学风险（中毒，长期影响，致癌，生殖系统损害） • Difficult or impossible for parents to identify 父母很难或不可能发现 • Chemical risks can be prevented through proper material management • 恰当的物料管理可以防止产生化学风险		

Here the workshop starts to discuss legislation and safety requirements for toys.
研讨会开始讨论玩具立法以及玩具安全要求

Legislation, Toys 立法，玩具 • Toys Safety Directive (2009/48/EC) 玩具安全指令 • Directive (2011/65/EU) – "ROHS" • Directive 2008/98/EC - waste • Directive 2006/95/EC – "LVD" • Directive 2006/66/EC – batteries and waste batteries 电池和废电池 • Directive 2004/108/EC – "EMC" • Directive 2012/19/EU – "WEEE" • Directive 1999/5/EC – "RTTE" • Directive 94/62/EC – packaging and packaging waste 包装和包装废品 • Regulation (EC) No 1223/2009 – cosmetic products 化妆品 • Regulation (EU) No 10/2011 – plastic materials intended to come into contact with food 与食物接触的塑料材料 • Regulation (EC) No 1272/2008 – classification, labelling and packaging of substances and mixtures物质和混合物的分类，标签，包装 • Regulation (EC) No 1907/2006 – "REACH" • Regulation (EC) 1935/2004 – materials and articles intended to come into contact with food 与食物接触的材料和物品 http://ec.europa.eu/enterprise/sectors/toys/documents/relevant-legislation/index_en.htm	Legislation, Toys, Chemicals 立法，玩具，化学品 • Toys Safety Directive (2009/48/EC) 玩具安全指令 • Directive (2011/65/EU) – "ROHS" • Directive 2008/98/EC – waste 废品 • ~~Directive 2006/95/EC – "LVD"~~ • ~~Directive 2006/66/EC – batteries and waste batteries~~ • ~~Directive 2004/108/EC – "EMC"~~ • ~~Directive 2012/19/EU – "WEEE"~~ • ~~Directive 1999/5/EC – "RTTE"~~ Not chemical risks 非化学风险 • Directive 94/62/EC – packaging and packaging waste 包装和包装废品 • Regulation (EC) No 1223/2009 – cosmetic products 化妆品 • Regulation (EU) No 10/2011 – plastic materials intended to come into contact with food 与食物接触的塑料材料 • Regulation (EC) No 1272/2008 – classification, labelling and packaging of substances and mixtures 物质和混合物的分类，标签，包装 • Regulation (EC) No 1907/2006 – "REACH" • Regulation (EC) 1935/2004 – materials and articles intended to come into contact with food 与食物接触的材料和物品	Legislation, Toys 立法，玩具 • Toys Safety Directive (2009/48/EC) 玩具安全指令 • Waste 废品 • Directive 2008/98/EC – waste 废品 • Directive (2011/65/EU) – "ROHS" waste 废品(electrical products) 电子产品 • Directive 94/62/EC – packaging and packaging waste 包装和包装废品 **Toys that are likely to come into contact with food** 很可能与食物接触的玩具 • Regulation (EU) No 10/2011 – plastic materials intended to come into contact with food 与食物接触的塑料材料 • Regulation (EC) 1935/2004 – materials and articles intended to come into contact with food 与食物接触的材料和物品 **Cosmetics** 化妆品 • Regulation (EC) No 1223/2009 – cosmetic products 化妆产品 **Chemical playsets** 化学玩具套装 • Regulation (EC) No 1272/2008 – classification, labelling and packaging of substances and mixtures 物质和混合物的分类，标签，包装 EN 71-4
It starts by listing all legislation that is applicable to toys. The link points to a EC website where the legislation is listed. 罗列出所有适用于玩具的立法 相应的立法都有一个对应的网站链接	Some of the listed legislation doesn't concern chemical risks and it not discussed in the workshop. 罗列出的一些不涉及化学风险的立法，不需要再研讨会上讨论	

Legislation, Toys 立法，玩具

Toys Safety Directive (2009/48/EC): 玩具安全指令

- Article 10(2): "Toys, including the chemicals they contain, shall not jeopardise the safety or health of users or third parties when they are used as intended or in a foreseeable way, bearing in mind the behaviour of children"

第10条（2）：玩具，包括其含有的化学物质，在按规定使用或在考虑到孩子行为的可预见的使用情景下，不得损害用户或第三方的安全和健康。

- Annex II, chapter III contains very detailed requirements

附件二，第三章包含非常详细的规定

Supported by standards (EN 71-series) EN71系列标准

Legislation versus Standards
立法VS标准

- Legislation (i.e. "directives" or "regulations") describe obligatory requirements. They must be fulfilled.

立法（即指令或者规定）描述了强制性的要求。必须被履行。

- But the requirements are often very broad and general

但是这些要求通常比较宽泛和概括

- Standards are tools that help the manufacturer prove that he fulfils the obligatory requirements from the legislation

标准是一种工具，帮助制造商检验他们履行了立法上的强制性要求

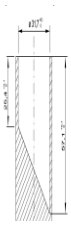
Legislation versus Standards
立法 VS 标准

Example 例子

- TSD Annex II, 1.4(c): 玩具安全指令附件II，1.4（C）：

)"Toys and their parts must be of such dimensions as to not present a risk of asphyxiation by closing off the flow of air as a result of internal airway obstruction by objects wedged in the mouth or pharynx or lodged over the entrance to the lower airways."

玩具及其组件部件必须符合规格 … 体楔入在口腔、咽部或卡在下呼吸 … 致气流封闭，导致窒息。



- EN 71-1

The purpose of these 3 slides is to emphasise the difference between standards and legislation.
这三张幻灯片的目的是强调标准和立法之间的区别

Toys Safety Directive
玩具安全指令

http://ec.europa.eu/DocsRoom/documents/4965/attachments/1/translations/ns/renditions/native

Available in Chinese language
有中文版本

Annex II, chapter III: 附件II，第III章

11. Toys shall not contain the following allergenic fragrances:

No	Name of the allergenic fragrance	CAS number
(1)	Alanroot oil (Inula helenium)	97676-35-2
(2)	Allylisothiocyanate	
(3)	Benzyl cyanide	
(4)	4 tert-Butylphenol	
(5)	Chenopodium oil	
(6)	Cyclamen alcohol	

11. 玩具不应含有以下致敏香料：

序号	致敏香料名称	CAS 编号
(1)	Alanroot oil (Inula helenium) 土木香	97676-35-2
(2)	Allylisothiocyanate 异硫青酸烯丙酯	1957-6-7
(3)	Benzyl cyanide 苯乙腈	140-29-4
(4)	4 tert-Butylphenol 4-叔丁基苯酚	98-54-4
(5)	Chenopodium oil 荆芥油	8006-99-3
(6)	Cyclamen alcohol 仙客来乙醇	4756-19-8
(7)	Diethyl maleate 马来酸二乙酯	141-05-9

Toys Safety Directive 玩具安全指令

- The Toys Safety Directive contains many such specific restrictions but also general restrictions, e.g. Annex II, item III.3:

玩具安全指令包括许多具体的限制，也有概括的限制，如附件二，第III.3项：

"(...) substances that are classified as carcinogenic, mutagenic or toxic for reproduction (CMR) of category 1A, 1B or 2 under Regulation (EC) No 1272/2008 shall not be used in toys, in components of toys or in micro-structurally distinct parts of toys."

条例(EC)No 1272/2008 下的1A，1B或2中 物质分为致癌、致突变或损害生殖系统，这些物质不能使用在玩具中或者玩具零部件中或玩具不同部分的微结构中。

- 400 substances listed in EN 71-series; 2.000 CMR substances

EN 71-系列中列出的400种物质；2.000 CMR 物质

- It is impossible to test for everything

对每一种物质进行检测是不可能的。

Legislation, Toys 立法，玩具

Toys Safety Directive (2009/48/EC), annex IV:

玩具安全指令（2009/48/EC），附件IV

"The technical documentation shall contain, in particular: 技术文件应当包含，尤其是：

(a) a detailed description of the design and manufacture, including a list of components and materials used in the toy as well as the safety data sheets on chemicals used, to be obtained from the chemical suppliers;

具体的设计和制造商描述，包括玩具组件和使用的材料以及使用的化学物品的安全数据，可以从化学品供应商处获得。

(a) the safety assessment(s) carried out in accordance with Article 18;"

安全评估（S）按照第18条进行的;"

Otherwise it is strictly forbidden to sell the toy in Europe.

否则，严格禁止在欧洲销售的玩具。

Here it is important to stress that it is practically impossible to verify through testing that a toy meets all EU safety requirements. Other means are necessary.

这里需要重点强调：若想通过测试玩具是否满足所有欧盟安全要求来验证其是否合格，这是不可能的。所以需要采取其他的措施。

Legislation, Toys 立法，玩具

Stay up-to-date 最近更新

- Check European Commission's website regularly (http://ec.europa.eu/enterprise/sectors/toys/index_en.htm)
  (much information translated to Chinese)
  定期查看欧盟委员会的网站（很多信息已翻译成中文）
- Subscribe to newsletters (European Commission)
  订阅电子报（欧盟委员会）
- Get help from consultants/AQSIQ/toy manufacturer associations
  从咨询公司/国家质检总局/玩具生产商协会获得帮助

Here the presentation starts to discuss additional national requirements and how to identify them. The discussion takes Germany as example.

这里开始讨论其他的国家的要求以及如何识别它们。讨论以德国为例。

Legislation, Toys 立法，玩具

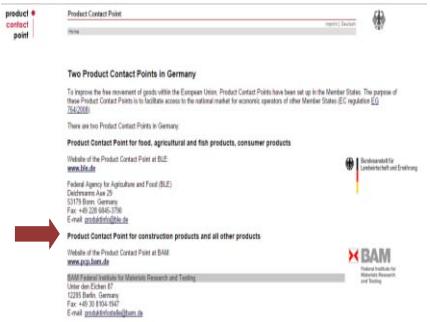
Caution: There may be specific national rules in individual EU countries
注意：可能在个别欧盟国家有个别具体要求

- All EU Member States must nominate a product contact point
- 每个欧盟成员国必须提名一个产品联络点
- A manufacturer can ask the product contact point for information on national rules and exceptions
  制造商可以询问产品联络点，获得国家条例和例外规定的信息
- List of product contact points: 产品联络点列表
  http://ec.europa.eu/enterprise/intsub/a12/index.cfm?fuseaction=a12.menucontacts
- European Commission guideline on Technical Documentation, Annex II:欧盟委员会技术文件指南，附件II
  http://ec.europa.eu/DocsRoom/documents/4241/attachments/1/translations/ns...

German point contact point
德国产品联络点

BAM Federal Institute for Materials Research and Testing

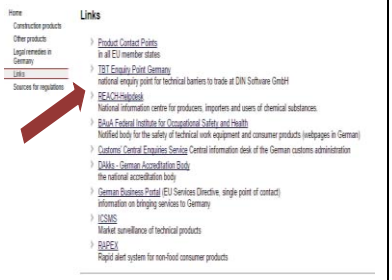
www.pcp.bam.de BAM联邦理工学院材料研究与测试



German point contact point
德国产品联络点

Focus on "non-harmonized" products, but also links to other relevant German bodies:

关注"非统一"产品，但也链接其他相关的德国组织机构:



Specific German information 具体德国信息

European Commission guideline on Technical Documentation
欧盟委员会技术文件指南

- Page 90, chemical requirements – none German
  90页，化学要求-非德语
- Page 95, other requirements:
  95页，其他要求

The final topic in this session is a discussion in the small groups. The intention is to have the participants reflect on what they just heard so they find out where they will face the biggest challenges.

The trainer should allow some 15 – 30 minutes for discussion followed by a short session where he asks each group to briefly present their main concerns.

会议最后的议题以小组讨论形式进行。目的是，使参与者反思出他们在培训中听到的内容，使他们找出他们面对的最大挑战在哪里。

培训师应当为讨论留出 15-30 分钟时间，之后让每个小组就他们主要关心的内容做简短的陈述。

Discussion 讨论 Question: 问题 • What is new in this in your opinion? 您认为这里什么是新的? • Where do you see the biggest challenges? 您认为最大的挑战是什么? • What would you expect would be the easiest part in this? 您希望哪个环节最容易? Discuss in small groups (company wise) – 15 minutes 15分钟小组讨论（以公司的形式） Present your thoughts in plenum 在会上展示您的想法		

End of morning session. 上午部分结束

4 Workshop, Day 1, afternoon 第一天下午，研讨会

4.1 Material Management in Practice, slide 29 – 56 物料管理实践，29-56 幻灯片

The purpose of this session is to present the most important activities and the critical control points in material management for the participants.

The session starts with an overview of the components in the afternoon session.

这节的目的是向参会者展示物料管理中最重要的活动和关键控制点。这节以一页关于下午内容的概览开始。会议开始时，首先介绍下午的会议概要。

Day 1, Afternoon Material Management in Practice 第一天下午 物料管理实践	Programme 日程 Day 1, afternoon: 第一天下午 • Material management, the tasks 物料管理，任务 o Design of toy 玩具设计 o Purchase 采购 o Handling of scrap/excess materials 处理废料或多余物料 o Chemical safety assessment, documentation (Bill of materials) 化学安全评估文件（物料清单） • Exercise 练习 • Introduction to material management systems 简述物料管理系统	

And then the workshop goes through each of these topics one by one.
研讨会上对各个标题逐个展开。

Material Management, the Tasks 物料管理任务 • Design of toy 玩具设计 o Prohibited materials 禁用的物料 o Limit values 限制值 • Purchase 采购 o First-time purchase of a new material 新材料的首次采购 o The following deliveries 后续交付 o Huge variation in volume? 数量上的巨大波动? • Handling of scrap/excess materials 处理废料或多余物料 • Chemical safety assessment 化学安全评估 o Documentation (Bill of materials) 文件（物料清单）	Material Management, the Tasks 物料管理任务 Design of toy 玩具设计 • Which materials (from your stock) are legal to use for this toy and use: 玩具使用那些物料是合法的呢? o Threshold values from legislation 立法规定的门槛值 o Age grading (small children that put everything in the mouth)? 年龄段（把东西随便往嘴里塞的小孩） o Intended use (contact with food) 用途（与食物接触） • New materials to be purchased? 采购新物料? o Information to purchase department 采购部的信息	Material Management, the Tasks 物料管理任务 Acquire and check technical documentation: 获得和检查技术文档 • Shows what is in your toy 显示玩具中的物质材料 • Necessary to prove that toy meets the legislation 有必要证明玩具符合立法要求 • Acquire from supplier of materials/substances 从物料/物质供应商索取 • Check that it meets your specifications 检查它是否符合您的要求 • For each material/substance in your toy 玩具中的每一种物料/物质 • In English (for export to EU) 英语书写（出口到欧盟的玩具）

List of the critical activities in the design phase 设计阶段的关键活动列表	Critical control points: • Not all materials can be used for toys • How old children is the toy intended for? • What is the intended use (contact with food, mouthing) 关键控制点 • 不是所有的物料都能适用于玩具 • 玩具是针对几岁的孩子的？ • 预期使用是什么？（与食物接触，还是与嘴接触）	Important to stress that the toy manufacturer must know exactly what is in all his materials. Don't buy un-documented materials. 强调玩具制造商务必完全了解，玩具物料中具体是什么。 不要购买没有记录的物料。
Material Management, the Tasks 物料管理任务 (Material) Safety Data Sheet 物料安全数据表 • Regulation 1907/2006 (REACH), article 31: 1. identification of the substance and the producer; 辨认物质和生产者 2. hazards identification; 危害识别 3. information on ingredients;成分信息 4. first-aid measures; 急救措施 5. fire-fighting measures; 消防措施 6. accidental release measures;泄露应急措施 7. handling and storage; 处理和储存 8. exposure controls and personal protection; 曝光控制、人身保护 9. physical and chemical properties; 物理和化学性能 10. stability and reactivity; 稳定性和反应性 11. toxicological information 毒理学信息 12. ecological information; 生态信息 13. disposal considerations; 废弃物处置 14. transport information; 运输信息 15. regulatory information; 监管信息 16. other information. 其他信息	Material Management, the Tasks 物料管理任务 (Material) Safety Data Sheet 物料安全数据表 • Example 例子 • Page 2: Composition, information on ingredients 材料构成、成分信息 • Pitfalls:误区 ○ Identifies hazardous substances; does not give full formulation of all ingredients 识别有害物质，没有给出完整配方成分 ○ Contamination, ask for more information if necessary 污染，如有需要请咨询更多信息	Material Management, the Tasks 物料管理任务 ıer technical documentation: 其他技术文件 Bill of substances 物质清单 Supplier's Declaration (example):供应商声明（例子） ○ "I, the undersigned, hereby declare on behalf of XX-company that the material YY does not contain substances that are classified as carcinogenic, mutagenic or toxic for reproduction (CMR) of category 1A, 1B or 2 under Regulation (EC) No 1272/2008." 本人在此代表XX公司声明如下：YY物料不含条例(EC) No 1272/2008中类别1A,1B或2 中列出的致癌、突变和危害生殖的物质。 ○ date and signature 日期和签名 Check relevance 检查相关性 Make it specific 使之具体 Traceable back to Bill of Materials! 追溯到物料清单
	Stress that the manufacturer must evaluate the technical documentation critically. 强调：制造商务必严格评估技术文件	Stress that supplier's declarations must be specific and relevant. 强调供应商声明务必是具体的、相关的。

Material Management, the Tasks
物料管理任务

Technical documentation is important

技术文件很重要

- Illegal to sell a toy in Europe without it

  在欧洲出售没有技术文件的玩具是违法的
- It proves that you have done your job and that the material in that toy is safe

  它会证明你完成了相应工作以及玩具中的物料是安全的
- If you don't get it …如果没有技术文件…
- … or you find errors 或者你发现了错误…
- **Then quarantine the material until the issue is solved**

  那么隔离材料，直到问题解决。

Stress that technical documentation must be available. Otherwise it is illegal to sell the toy in Europe.

强调技术文件务必得有价值，否则在欧洲出售玩具是违法的。

Material Management, the Tasks
物料管理任务

Testing 测试

- Not obligatory, depends upon credibility in the supply chain 非强制性，但是取决于供应链的信誉、可靠性
- If you want to test:若想测试
  - Targetted tests – what do you suspect to be in the material (contaminations)

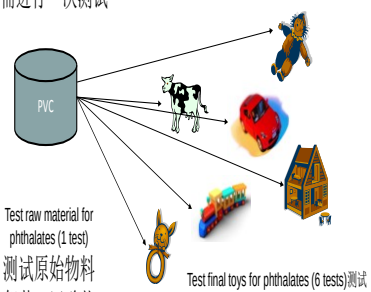
    针对性测试，你怀疑玩具中有何物质（污染物）
  - Test to check the supplier 测试检测供应商
  - Risk based: 风险存在于
    - High risk => test every batch 高风险=>测试每一批
    - Low risk => probably never test 低风险=>可能从未测试过
- **Always check that your materials meet your specification upon purchase 总是检测物料是否符合您的具体采购要求**

Material Management, the Tasks
物料管理任务

Testing 测试

- If you test, be sure to link the test report to the material so you only have to test once => savings on test costs

如果进行测试，确保将测试报告附在物料中，这样就只需进行一次测试



Test raw material for phthalates (1 test)
测试原始物料邻苯二甲酸盐（1个测试）

Test final toys for phthalates (6 tests)测试最终玩具的邻苯二甲酸盐（6个测试）

These two slides disusses testing. The point is that it is better (less costly) to test the raw materials than to test every product that the material is used for.

But important to note that testing is voluntary, so the manufacturer should only use it when he doesn't trust the technical documentation or to verify it.

这两张幻灯片讨论的是测试。对原物料进行测试比测试每件产品要好。但是，要把每次测试结果都记录下来，这样的话，在制造商不信任技术文件或需要验证技术文件时，就可以使用测试结果记录。

Material Management, the Tasks
物料管理任务

Purchase - following deliveries 购买，如下交付

- Check if requirements have changed

  若需求改变，则需检查
- Materials must still meet your specification

  物料务必仍满足您的具体要求规格
- Collect Safety Data Sheets and Supplier's Declarations

  收集安全数据表和供应商声明
- Batch numbering

  批次号
- Testing? Perhaps to check your supplier

  测试？或许检查您的供应商
- **Quarantine materials if you find issues**

  如果有问题，需要隔离材料

Stress that the manufacturer should continue to acquire and review technical documentation for follow-up deliveries.

制造商为了后续交付，需要继续要求和审查技术文件。

Material Management, the Tasks
物料管理任务

Purchase – huge production increase 购买，巨大产量增加

- Discuss with your supplier – before! 之前与供应商进行讨论
- Can he meet your demands? 供应商能满足您的要求吗？
- How will he do it? 他打算怎么做？
- Ensure that the material doesn't change: It must meet your specification

  确保物料不改变：必须满足您要求的规格
- Multiple suppliers on critical materials?

  关键材料上有多个供应商？

This is a commonly seen weak point. If the manufacturer is asked urgently to increase the production, it is often seen that he buys substandard material to deliver the order.

这是一个常见的弱点。如果制造商被急切要求增加生产，经常发生这样的情况，制造商为了交付订单去购买不合格的材料。

Material Management, the Tasks
物料管理任务

Scrap and excess material 废料和多余物料

- Must be strictly controlled 务必严格控制
- Never put it "back in the barrel"

  不可以重新放回到物料桶中
- Make your own "bill of substances" for it

  制定自己的物质清单
- Store it separated 分开储存
- Check what product types it can be used for (Toys? Other plastic ware?)

  检查下这些废料和多余物料能用于生产哪种类型的产品?(玩具？其他塑料制品)

Another weak point. Scrap and excess material is different from the original material (for instance because the manufacturer has mixed colourants in).

另一个弱点是，废料和多余的物料与原始物料是不一样的。（例如，制造商会混合着色剂在其中）

Material Management, the Tasks
物料管理任务

What if a manufacturer produces a wide range of products (toys for babies, toys for larger children, utensils, cleaning tools)?

对于生产各年龄段玩具的制造商（婴儿玩具、稍大些孩子玩具、餐具、清洁工具）有何规范措施?

- Use the same plastic material for all products? 所有的产品使用相同的塑料材质吗?
  - Highest specifications => More expensive 最高规格=>更昂贵
  - Buying higher quantities gives better prices? 买的越多，价格越便宜吗?
- Or different plastics according to product
  或者根据产品需要使用不同的塑料材质?
  - More complex material management => Higher costs, higher probability for errors
    更复杂的物料管理=>更高成本，更高的错误概率
- Trade off 抉择

Material Management, the Tasks
物料管理任务

Design phase, safety assessment 设计阶段，安全评估

Purpose:目的

- To document that the toy does not contain forbidden substances or substances in forbidden concentrations
  证明，玩具不含有禁止的物质或者不含有超过标准的物质量。

How:

- Bill of materials 物料清单
  - Must document everything in the toy 务必列明玩具中包含的一切物质
  - Must show amounts, concentrations and accessibility 务必显示出物质的量、浓度和可用性

Then we have 3 examples of bill-of-materials.

The first example shows the principles.

The second example shows the format that manufacturers should follow.

The third example illustrates that bill-of-materials can be very long.

我们有 3 个物料清单的例子。第一个向我们展示的是原则，第二个是制造商应当遵循的形式。第三个插图向我们展示：是物料清单可以是很长的。

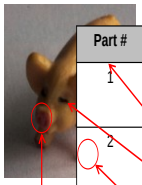
Material Management, the Tasks
物料管理任务

Bill of materials in principle 物料清单的原则

Example, pig 以小猪玩具为例

Material Management, the Tasks
物料清单任务

The principle in bill of materials物料清单原则



Part #	Description	Weight	Material
1	Body 身体	1,5 gram	Polyethylene 聚乙烯
2	Eyes 眼睛	0,003 gram	Black paint 黑色漆
3	Nose, toes 鼻子，脚趾	0,01 gram	Red paint红色漆
4, 5, ...	Packaging, print on package, label, print on label, etc.包装，包装印刷，标签，		

Must identify substance clearly and uanimously
必须清晰一致地辨认物质

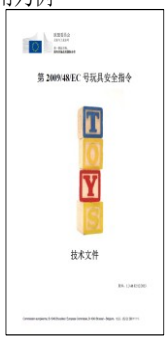
First example, a very simple product.

Shows the principles behind the bill-of-materials – to list all contents in the toy.

第一个例子是非常简单的一件产品。向我们展示的是物料清单遵循的原则：罗列出玩具中所有包含的内容。

Bill of Materials 物料清单

Example from guideline from European Commission 以欧盟委员会指南为例

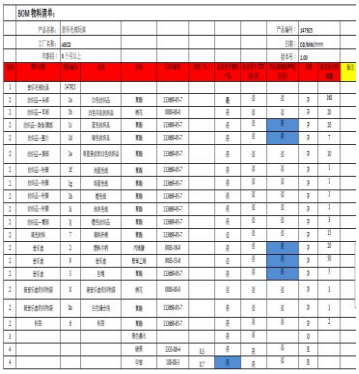


Bill of Materials 物料清单

Standardised format 标准化格式

- Level 等级
- Part name 零部件名称
- Part number 零部件号
- Description 描述
- Material 物料
- CAS number CAS 号
- Concentration in % 浓度（% 表示）
- Accessible in final product? 最终产品可以使用吗?
- SDS available? SDS 可用?
- Supplier's sub declaration供应商的子声明
- Source 来源
- Weight of part in grams 零部件的重量（以克为单位）
- Notes 注释

Bill of Materials 物料清单



The second example that illustrates the format for bill-of-materials that manufacturers should use when manufacturing toys.

第二个例子是，绘制出物料清单的形式，制造商在生产玩具时可以使用。

Bill of Materials 物料清单

Age Grade 年龄段

- Because there are further restrictions on toys for small childern (0-3 years)

  因为对0-3岁的小孩的玩具有更多限制
- A small child puts everything in its mouth 这样的小孩把一切东西都往嘴里塞

Bill of Materials 物料清单

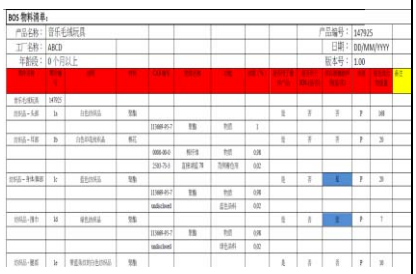
Level:等级

- Used for a break-down of the toy 用于玩具分类
- Level 1: The finished toy 等级1：完工的玩具
  - Level 2: Toy parts (including packaging) 等级2：玩具零部件（包括包装）
    - Level 3: Materials from toy parts 等级3：玩具零部件的材料
      - Level 4: Substances from toy materials 等级4：玩具物料中的物质
- Further levels possible (sub-assemblies) 更多等级（子组件）

Bill of Materials 物料清单

Further details in Bill of Substances (BOS):更多细节在物质清单里

- Necessary when Bill of Materials doesn't give all information (textiles, mixtures) 若物料清单没有列全所有信息（如纺织品、混合物），就需要物质清单



Discussion of some details from the bill-of-materials.

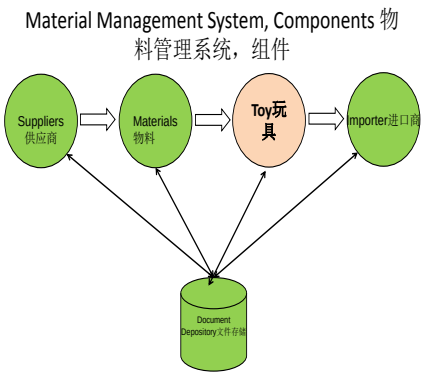
讨论物料清单的一些细节

Bill of Materials 物料清单 Comments, conclusion:评论，结论： • Bill-of-material can grow very long 物料清单可以很长 => 1.500 – 2.000 lines • Must clearly identify all materials in the toy (manufacturer, brand name, type number, batch number if possible) 必须明确识别玩具中的所有物料（制造商、品牌，型号，批号） • Must link to safety data sheets, bill of substances, test reports, etc. 必须附上安全数据表、物质清单和检测报告等。	The third example illustrates that a bill-of-materials can grow very long if the toys is complex. 第三个例子中绘制出的物料清单显示，如果玩具构造很复杂，那么物料清单可以是很长的。	
The session (and the day) ends with an exercise. The participants should discuss in the small groups. The trainer should bring a simple toy (with some 7 – 10 components) – one item for each group – and ask the participants to take the toy apart and develop a draft bill-of-materials. The trainer should stress that he doesn't expect the participants to explain what materials are inside the product, but to practice the format in the bill. Therefore it is OK to use very generic descriptions like "red plastics" or "plastics plus red colorant". The intention is to check that the participants remembers to include everything. The trainer should allow some 30 – 45 minutes for discussion followed by a 15 – 30 minutes session where he asks each group to present their result. (To speed up things, the trainer can ask the first group to present its results and then ask the other groups to comment and add whatever they have found that the first group may be missing,) 练习之后，结束会议。参与者应当分小组讨论。培训人员应当带一个由 7-10 个零部件组成的简单小玩具，每个小组分一个。要求参与者拆开玩具，列出物料清单。培训人员应当强调，他不期待参与者对玩具中有什么零部件和物料进行叙述，而是需要参与者学会练习制作书写物料清单。因此，可以使用非常通用的描述，如"红色的塑料"或"塑料加红着色剂。目的是检查参与者是否记住玩具中的每个零部件。15-30 分钟之后，当每个小组展示完其成果之后，培训员应当给出 30-45 分钟的时间进行讨论。（为加快进度，培训员可以让第一个小组做展示，然后请其他小组进行评论，并提问他们是否发现第一组缺少了什么东西。）	Bill of Materials – Exercise 物料清单–练习 Try to develop a bill of materials for a product 尝试列出一份产品的物料清单 • Use "the EU BOM format": 使用欧盟BOM格式 – Level 等级 – Part name 零部件名称 – Part number零部件号 – Description 描述 – Material 物料 – CAS number CAS号 – Concentration in % 浓度（%） product? 在最终产品里有? – SDS available?SDS可用? – Supplier's sub declaration 供应商的子声明 – Source来源 – Weight of part in grams 零部件重量（克为单位） – Notes 注释	

The final topic of the day is a brief introduction to the components in a material management system and the different sorts of documents that must be included.

The purpose is to introduce day 2.

最终的话题是对物料管理系统中的组成部分以及不同的文件种类进行简要的介绍。为第二天做铺垫。

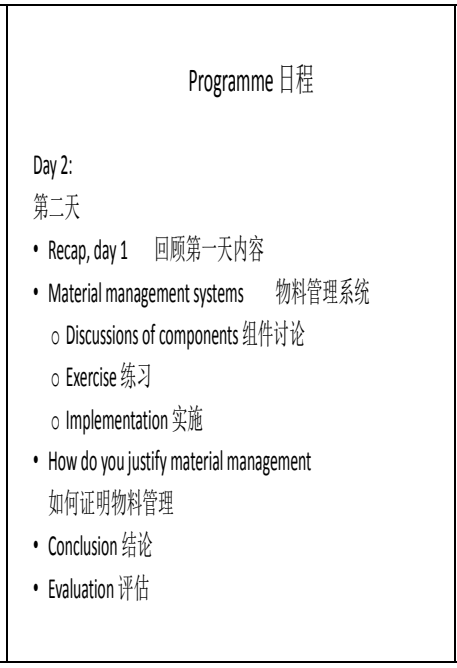


5 Workshop, Day 2 第二天 研讨会

5.1 Recap of Day 1, slide 57 – 63 回顾第一天，57-63 张幻灯片

The purpose of this session is to repeat the most important highlights from the first day for the participants.

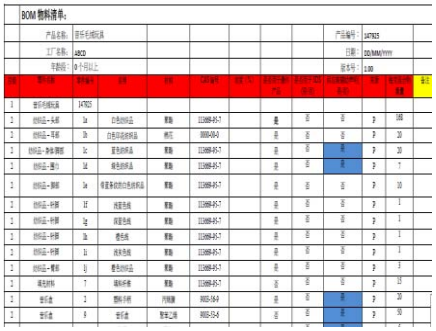
目的是，重复第一天幻灯片中展示的重要知识。



Recap, Day 1回顾第一天

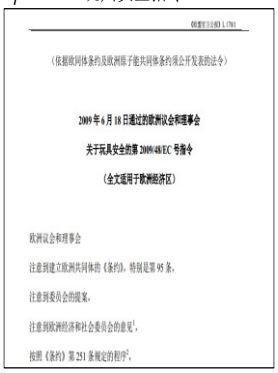
- Bill of Materials from European Commission guideline "Technical Documentation"

  欧盟委员会："技术文件"指南中的物料清单



Recap, Day 1回顾第一天

- Toys Safety Directive玩具安全指令



（依据欧同体条约及欧洲原子能共同体条约颁公开发表的法令）

2009 年 6 月 18 日通过的欧洲议会和理事会

关于玩具安全的第 2009/48/EC 号指令

（全文适用于欧洲经济区）

欧洲议会和理事会

注意到建立欧洲共同体的《条约》，特别是第 95 条，

注意到委员会的提案，

注意到欧洲经济和社会委员会的意见[1]，

按照《条约》第 251 条规定的程序[2]，

- http://ec.europa.eu/DocsRoom/documents/4965/attachments/1/translations/ns/renditions/native

Recap, Day 1回顾第一天

- TSD - explanatory guidance document

  TSD 解释性指导文件

玩具安全指令 2009/48/EC

解释性指导文件

- http://ec.europa.eu/DocsRoom/documents/5261/attachments/1/translations/ns/renditions/native

Recap, Day 1回顾第一天

- TSD - explanatory guidance document

  TSD 解释性指导文件

第 2009/48/EC 号玩具安全指令

技术文件

- http://ec.europa.eu/DocsRoom/documents/4241/attachments/1/translations/ns/renditions/native

5.2 Material Management Systems, Components, slide 64 – 88

物料管理系统组成部分，幻灯片 64-88

The purpose of this session is to discuss the components in a material management system and the sort of information should be filed.

The whole session uses an interactive approach where the trainer briefly introduces a component and then asks the participants to discuss what information they would like see stored here.

Afterwards, the trainer introduces a common situation that is known to create problems and asks the participants how this situation is handled with the system.

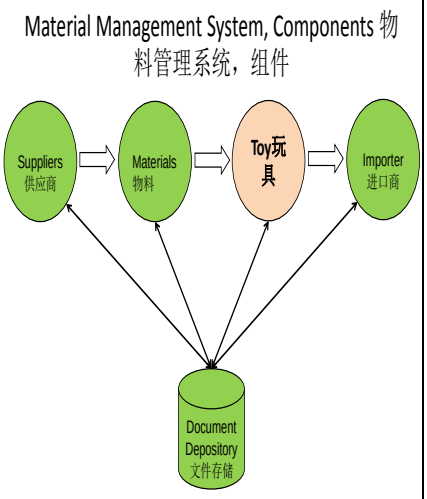
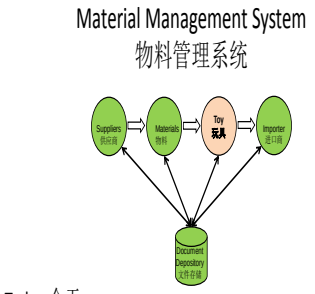
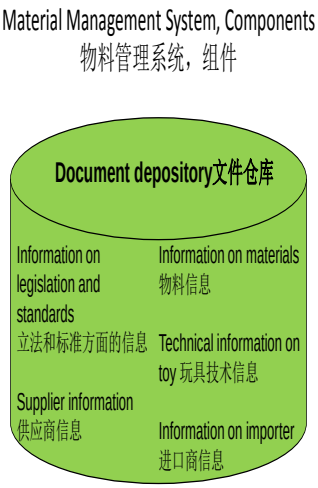
The intention is that the participants should get a deeper understanding of the topics by actually working with them themselves.

目的是，讨论物料管理系统中的组成部分以及信息种类。

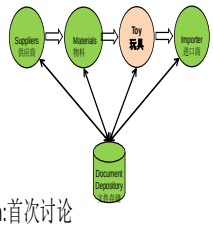
整个会议中使用了互动的方法，培训人员简要介绍一个部分，然后请参与者回答，他们希望将什么样的信息储存在这里。然后，培训员介绍一个较为通常的场景，创造一个问题，然后请参与者回答，如何用系统处理这个问题。

目的是，参与者通过自己切实地操作，达到更深入的理解。

First, there is an overview of the main components in a material management system.
首先，对物料管理系统的主要组成部分有一个整体的了解。

<table>
<tr>
<td> 
</td>
<td> 
</td>
<td> 
</td>
</tr>
<tr>
<td></td>
<td>Stress that a material management system can be implemented in many ways, e.g. as a paper-based system. Not necessarily as an IT system.
强调：物料管理系统可以通过很多方式进行操作，例如，依据纸质系统。IT 系统不是必须的。</td>
<td></td>
</tr>
</table>

Introduce the first component – the toy. 介绍第一部分——玩具

<table>
<tr>
<td>Material Management System
物料管理系统
 

First discussion:首次讨论
What information should the material management system store about the toy? 物料管理系统应当储存哪些玩具信息?
• Please discuss in small groups 请小组讨论
• 30 minutes 30分钟</td>
<td>Ask the participants to discuss for 15 – 30 minutes what information they would like to see stored for the toy.
When they have finished, the trainer should ask the first group to present their ideas. Write them on a list (on a flip chart or a whiteboard. Ask the other groups to add their suggestions. Alternatively, the trainer could ask the class to give him ideas. He should then ask each group one by one at the end to ensure that all ideas have been collected.
让参与者讨论 15-30 分钟，问题是：他们希望将玩具的什么信息进行储存。完成之后，培训员应当问第一小组展示下他们的想法，记录下来。然后问第二小组他们有什么建议。培训员也可以问整个班级对第一小组有什么建议。最后，他应当询问每个小组，确保收集到所有的意见和想法。</td>
<td></td>
</tr>
<tr>
<td>Material Management System
物料管理系统
Contents - ideas:内容
• Specification of toy 玩具规格
• Age grade年龄段
• Test report(s)检测报告
• Declaration of conformity
符合性声明
• List of components
组件列表
• Bill of materials 物料清单
• Chemical safety assessment
• 化学安全评估</td>
<td>The trainer should show his list and emphasise that it is only for inspiration. The other ideas that have come up in the discussions can enrich the list.

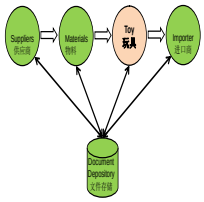
Next, the trainer should ask the participants what information should be stored if the toys is changed?
培训员应当展示下他的列表，强调，这只是为了激发灵感。讨论中出现的其他想法可以添加在列表上。
接下来，培训员应当询问参与者，如果玩具改变了，那么什么样的信息应当储存下来。</td>
<td>Material Management System
物料管理系统
Contents - ideas:内容
• Specification of toy玩具规格
• Age grade 年龄段
• Test report(s)检测报告
• Declaration of conformity
符合性声明
• List of components
组件列表
• Bill of materials
物料列表
• Chemical safety assessment
化学安全评估
What if the toy is modified?玩具被修改了怎么办？</td>
</tr>
</table>

The participants should discuss for 15 – 30 minutes. When they have finished, the trainer should collect the ideas the same way as before.

参与者应当讨论 15-30 分钟完成讨论之后，培训员应当按照之前的方法搜集他们的想法。

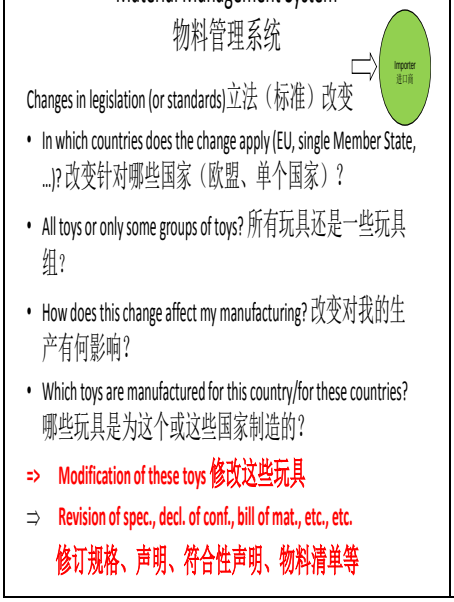
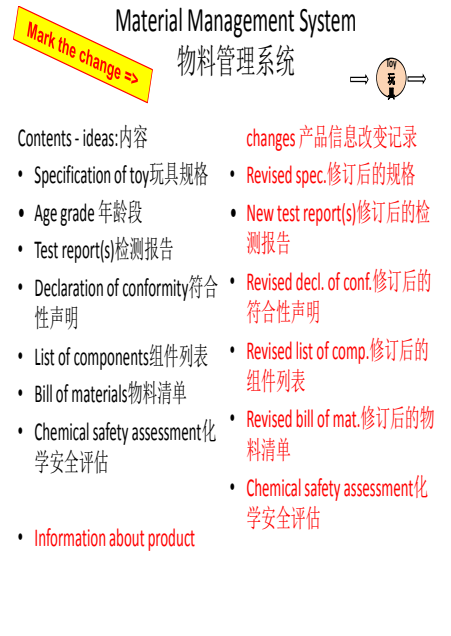
Material Management System 物料管理系统 Contents - ideas:内容 • Specification of toy玩具规格 • Age grade 年龄段 • Test report(s)检测报告 • Declaration of conformity符合性声明 • List of components组件列表 • Bill of materials 物料清单 • Chemical safety assessment化学安全评估 • Information about product changes 产品信息改变记录 • Revised spec.修改后的规格 • New test report(s)新的测试报告 • Revised decl. of conf.修改后的符合性声明 • Revised list of comp.修改后的组件列表 • Revised bill of mat.修改后的物料清单 • Chem afety assessment化学安全 	The trainer presents his list and stresses that it must be enriched with the ideas from the participants. The trainer should emphasise that the files hold this information about product changes – an issue that is often overlooked. 培训员展示他的列表，强调，参与者的想法应当补充到列表当中。 培训员应当强调，该文件保存产品变更信息，这是一个常常被忽略的问题。

Introduce the second component – the importer.介绍第二部分——进口商

Material Management System 物料管理系统  Second discussion: 第二轮讨论 • What information should the system store about the importer? 系统应当储存进口商的哪些信息? • Please discuss in small groups 请小组讨论 • 30 minutes 30分钟	Ask the participants to discuss for 15 – 30 minutes what information they would like to see stored for the importer. When they have finished, the trainer should the trainer should collect the ideas from the participants. 请参与者讨论 15-30 分钟，问题是：进口商什么样的信息应当被储存起来。完成讨论之后，培训员应当将参与者的想法搜集整合起来。

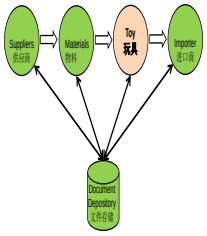
The trainer presents his list and emphasises that it is for inspiration. 培训员展示他的列表，强调这可以储存并激发灵感。	Stress that the country of import decides the safety requirements, etc. 强调：进口国决定安全要求。	Next, the trainer should ask the participants what happens if the legislation changes? 然后，培训员应当请参与者回答，若立法改变了怎么办？

The participants should discuss for 15 – 30 minutes. The trainer collects their ideas.
参与者讨论 15-30 分钟， 培训员搜集整合想法

First action is identify those countries where the change applies. Second, the manufacturer should analyse the changes and see what product changes that necessitates. Third, these toys must be changed. 首先要确认，立法改变了的国家。 然后，制造商应当分析这些改变并考虑，产品需要做哪些改变。再次，这些玩具必须得被改变。	And fourth, the information about the product changes is filed like discussed before. 然后，应当像之前讨论的那样，提交产品改变的信息。	

Introduce the third component – the materials. 介绍第三部分——物料

Material Management System 物料管理系统  Third discussion:第三轮讨论 • What information should the system store about the materials?系统中应当储存物料的哪些信息? • Please discuss in small groups 请小组讨论 • 30 minutes 30分钟	Ask the participants to discuss for 15 – 30 minutes what information they would like to see stored for each material or substance. When they have finished, the trainer collects the replies. 请参与者讨论 15-30 分钟，问题是：每种物料或物质的哪些信息应当被储存？ 完成讨论之后，培训员搜集参与者的回答。

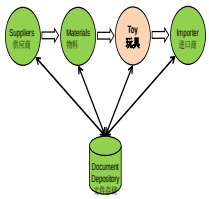
Material Management System 物料管理系统 Materials 物料 Contents - ideas:内容 • Identification of material确认物料 • Batch number 批次号 • Material Safety Data Sheets 物料安全数据表 • Bill of Substances (as appropriate)物质清单（适当的） • Supplier's declaration (as appropriate)供应商声明（适当的） • Test report(s) (as appropriate)检测报告（适当的） • Identification of supplier(s)供应商身份证明 • Restrictions on amounts 数量限制	Material Management System 物料管理系统 Contents - ideas: 内容 • Identification of material 确认物料 • Batch number 批次号 • Material Safety Data Sheets 物料安全数据表 • Bill of Substances (as appropriate) 物质清单（适当的） • Supplier's declaration (as appropriate) 供应商声明（适当的） • Test report(s) (as appropriate)检测报告（适当的） • Identification of supplier(s)供应商身份证明 • Restrictions on amounts 数量限制 Referenced in the Bill Of Materials for the Toy 引用在玩具的材料清单	Material Management System 物料管理系统 Contents - ideas:内容 • Identification of material确认物料 • Batch number 批次号 • Material Safety Data Sheets 物料安全数据表 • Bill of Substances (as appropriate) 物质清单（适当的） • Supplier's declaration (as appropriate) 供应商声明（适当 • Test report(s) (as appropriate) 检测报告（适当的） • Identification of supplier(s) 供应商身份证明 • Restrictions on amounts 数量限制 What if a material is changed? (Or agreed amounts exceeded?) 物料改变了怎么办？ （或超过了商定好了
The trainer should show his list and emphasise that his list must be enriched with the ideas from the participants. 培训员应当展示下他的列表，强调参与者应当将他们的想法添加到他的列表中。	Emphasise that there must be a clear link from the information about the materials in the system and the bill-of-materials. 系统中的物料和物料清单信息应当给出一个清晰的链接。	Next, the trainer should ask the participants what actions should be taken if the material is changed? 培训员应当提问参与者，若物料改变，怎么办呢？

The participants should discuss for 15 – 30 minutes. The trainer collects their ideas.
参与者有 15-30 分钟的讨论时间。培训员搜集整合他们的想法。

Material Management System 物料管理系统 Changes in materials 物料改变 • Which toys are affected? 那些玩具会受到影响 • How do you transfer from one material to the other? 如何从一种材料转变成另一种? => **Revision of Bill of Materials for these toys** 这些玩具的修订后物料清单 => **Check the chemical safety** assessment 检查化学安全评估 => Revision of spec, decl. of conf., etc.? 修订规定、符合性声明等	Material Management System 物料管理系统 Mark the change =>标记变化 Contents - ideas:内容 • Specification of toy玩具规格 • Age grade年龄段 • Test report(s)检测报告 • Declaration of conformity符合性声明 • List of components组件列表 • Bill of materials物料清单 • Chemical safety assessment化学安全评估 • Information about product changes产品信息改变记录 • Revised spec.修订后的规格 • New test report(s)修订后的检测报告 • Revised decl. of conf.修订后的符合性声明 • Revised list of comp.修订后的组件列表 • Revised bill of mat.修订后的物料清单 • Chemical safety assessment化学安全评估	Material Management System 物料管理系统 Your importer increases his orders 你的进口商增加了他的订货量 Agreed amounts of materials exceeded 超过商定好的物料的数量 Risky:风险 • Can your supplier deliver **exactly the same material** in higher amounts? 你的供应商能够供应大量同等物料吗? • Other supplier? (=> new material) 其他供应商呢？（=>新物料） • "Same" material in other quality (=> new material) 另种质量的"相同"物料（=>新材料） ⇒ **Handle as a change of Materials** 当做物料改变来处理

First action is identify those toys that are affected (i.e. that are produced from the material that changes). Second, the manufacturer should revise the bill-of-materials. Third, the manufacturer must check the safety assessment to see if the legal requirements are still met. 首先要确认受影响的玩具。（它们使用了改变了的物料） 然后，制造商应当改变物料清单。 最后，制造商务必要检查安全评估，看看是否符合法律规定的要求。	And fourth, the information about the changes must be filed like discussed before. 再次，务必记录改动的信息。	A common way that leads to an (unintended) change of material is when the importer increases his orders significantly. Stress that if the supplier of the material is unable to deliver exactly the same material, then it must be handled as a change of materials. 通常导致物料改变的途径是，当进口商突然增加他的订单。 如果物料供应商不能够准确提供相同的物料，那么这时候就发生了物料改变，要按照物料改变进行处理。

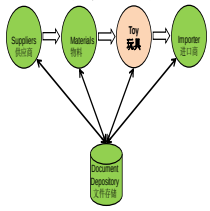
Introduce the fourth component – the supplier (of the materials).
介绍第四部分——物料供应商

Material Management System 物料管理系统  Fourth discussion:第四轮讨论 • What information should the system store about the suppliers?系统应当储存供应商的哪些信息? • Please discuss in small groups 请小组讨论 • 30 minutes 30分钟	Ask the participants to discuss for 15 – 30 minutes what information they would like to see stored for each supplier. When they have finished, the trainer collects their ideas. 请参与者讨论 15-30 分钟，问题是：针对每个供应商，他们想要储存什么信息。讨论完毕之后，培训员搜集整合他们的想法。

Material Management System 物料管理系统 Contents - ideas:内容 • Identification of supplier (name, address, telephone number, etc.)确认供应商（名字、地址、电话号码等） • (Commercial) agreements商业协议 • Track record (your experiences and evaluation of the supplier)跟踪记录（你的经验和供应商的评价）	Material Management System 物料管理系统 Contents - ideas:内容 • Identification of supplier (name, address, telephone number, etc.)确认供应商（名字、地址、电话号码等） • (Commercial) agreements商业协议 • Track record (your experiences and evaluation of the supplier)追踪记录（你的经验和供应商评价） What if a supplier is changed? 供应商改变了怎么办？	
The trainer should show his list and emphasise that his list must be enriched with the ideas from the participants. 培训员应当展示下他的列表，强调参与者应当将他们的想法补充到列表中。	Next, the trainer should ask the participants what actions should be taken if a suppiler is changed? 然后，培训员应当请参与者回答：如果供应商改变，他们应当怎么做呢？	

The participants should discuss for 15 minutes.
When they have finished, the trainer should collect the ideas the same way as before.
参与者讨论 15 分钟。之后，培训员应当将他们的想法按照之前的方法搜集整合起来。

Material Management System 物料管理系统 Change of supplier 供应商改变 ... means change of materials 意味着物料改变 • Which materials are affected? 哪些物料会受到影响呢？ ⇒ Handle as change of materials 作为物料改变来处理	Explain that changing a supplier would normally mean that the material will change, so it sould be handled as a change of materials. 解释供应商改变通常意味着，物料也会改变，因此，应当视为物料改变。

Material Management Systems 物料管理系统  Not necessarily IT system – can be a simple, paper-based system:IT系统并不必要——可以是一个简单、纸质的系统 • Easy to establish the system 系统容易建立 • Time-consuming to establish the data 耗时建立数据 • Requires thorough maintenance of data要求彻底的		
Wrap-up 总结		

5.3 An Advanced Material Management System, the Schleich Case, slide 89 – 101

先进的物料管理系统，以思乐公司为例，幻灯片 89-101

The purpose of this session is to present an example of an advanced material management system.

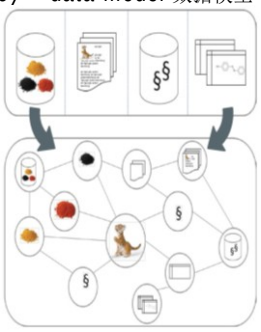
The contents of this session are subject to change.

目的是，展示一个先进的物料管理系统例子。这部分内容会改变。

The Schleich Case思乐公司案例 An advanced IT based material management system 依据先进IT的物料管理系统 	The Schleich Case思乐公司案例 *trace4toy* – a semantic-based tool for easy material management *trace4toy*——按字面理解，一种简单物料管理 • Cross-links data from international, distributed production and supplier processes 从遍布国际的生产和供应流程中获取交叉数据链 ○ Substances and ingredients of products 产品的物质和组成成分 ○ Stability properties 稳定性能	The Schleich Case思乐公司案例 *trace4toy* – a semantic-based tool for easy material management (continued) 玩具追踪——按字面理解，一种简单物料管理（继续） • Supports consideration of international safety regulations and safety guidelines 支持将国际安全规定和安全指南纳入考虑之中 • Supports quality management for supplied products 支持对供应的产品进行质量管理 ○ Traceability 可追溯性 ○ Audits and examinations审计和检测

The Schleich Case思乐公司案例

trace4toy – data model 数据模型



The Schleich Case思乐公司案例

Principles:原则

- Divides Data Sets into „Worlds“ (World of Materials, World of Regulations, World of Substances)
  将数据包拆分为物料世界、规范世界和物质世界
- Integration of ERP Data (ERP = Enterprise Ressource Planning)
  ERP数据集成（ERP：企业资源规划）
- Distributed maintenance of materials
  分布式物料维护

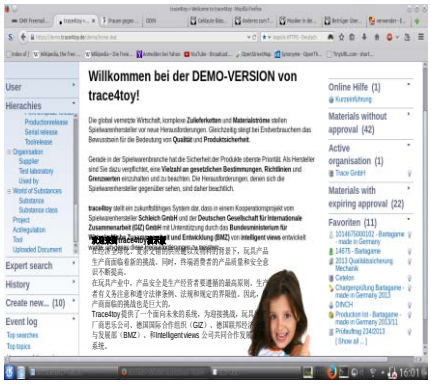
The Schleich Case思乐公司案例

Front end 前端

- Web based 以网络为依据
  - No external client needed 不需要外部客户
  - Excel-Export for all data 所有数据用Excel导出
  - Structured queries 结构化查询
- Support multilingualism 支持多种语言
  - German, English, Chinese 德语、英语和中文
- Access rights 访问权限
  - Role based rights model for all users
    为所有用户准备基于角色的权限模型

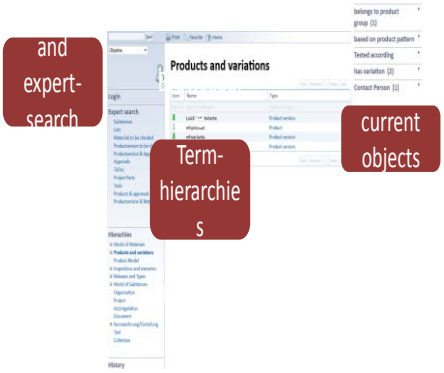
The Schleich Case思乐公司案例

The opening page 打开的网页



The Schleich Case思乐公司案例

Front end - look

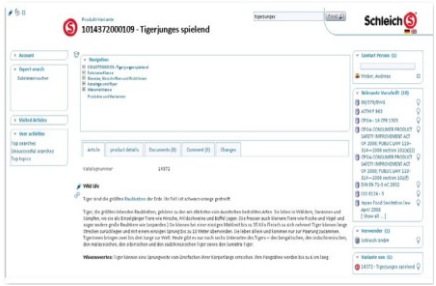


The Schleich Case思乐公司案例

Linking toys to labels, materials, etc. (”building relations”) 连接玩具标签，材料等（“建立关系”）

The Schleich Case思乐公司案例

Product view产品视图



The Schleich Case思乐公司案例

Adding a new material 增加一种新物料

The Schleich Case思乐公司案例

Adding a new production log 增加新的产品

The Schleich Case思乐公司案例 Adding a new supplier增加新的供应商 	For these 3 last slides, it is important to draw the lines back to what was discussed during the material management system (slides 64-88) where we discussed more abstractly how to add a new supplier, add a new material and distinguish between different lots. 物料管理系统的 64-88 张幻灯片中我们较抽象地讨论了如何增加新的供应商、新材料和区分不同批次，最后三张幻灯片中，有必要回顾下当时我们讨论的内容。

5.4 Implementation of Material Management Systems, slide 102 – 109

实施物料管理系统，幻灯片 102-109

The purpose of this session is to present the participants for some of the issues that they should discuss when they have decided to implement a material management system.

目的是，向参与者展示一些在实施物料管理系统过程中需要讨论的课题。

Implementation of Material Management Systems 物料管理系统实施	Material Management, Implementation物料管理系统实施 Decision:决定 • Simple or complex system 简单或复杂的系统 Questions:问题 • Maintenance? 维护? • Demand for input? 输入需求? • Requirements for output? 输出要求? • Expenses? 费用? • Interfaces to other systems in your company (e.g. quality control)?链接到您的公司内其他系统（如质量控制）?	Material Management Systems, Implementation物料管理系统实施 Material management is not a question of IT or not – **IT is just a tool 物料管理不是IT问题，IT只是一个工具** Organisational issues 组织性问题 • Which departments will be involved in the system哪些部门要参与到系统中? • Who will own the system 谁拥有系统? • Who will deliver input 谁提供输入? • Who will use the output 谁使用输出? • Who will maintain data 谁维护数据?

Material Management Systems, Implementation 物料管理系统实施 Clarify roles, tasks and obligations 明确角色、任务和义务 • Who will do what? 谁做什么? o Purchase 采购 o Storage 储存 o Manufacturing 制造 o Design and engineering 设计和工程类工作 o Quality management 质量管理 o Documentation 文件	Material Management Systems, Implementation 物料管理系统实施 Training 培训 • Different training needs for different roles 不同角色有不同培训需求 • How to train 如何培训 • Start-up training, mai • ntenance 开始培训，维持 • Training of new staff 培训新员工 • Who will do the training (in-house experts or external partners) 谁做培训师?（企业内部专家还是外部伙伴?）	Material Management Systems, Implementation 物料管理系统实施 New roles and responsibilities 新角色和责任 • System owner 系统拥有人 • Data owner 数据拥有人 • Super users (?) 超级用户 • User groups (?) 用户组 • Development of system 系统发展 • Maintenance of system 系统维护 • Gatekeepers (legislation, materials) “信息传递者”（立法、物料） • Communication 交流
Material Management Systems, Implementation 物料管理系统实施 Implementing the system 系统实施 • “Big bang” or gradually 突击性或者逐步地 • Communication交流 o Employers 雇主 o Customers (importers) 消费者（进口商） o Stakeholders (owners, authorities, …) 利益相关者（拥有者，主管部门，…）	Material Management Systems, Implementation 物料管理系统实施 Discussion:讨论 Material management will cost money. How do you justify an increase in prices for your customers? 物料管理需要资金成本。您如何向客户合理解释价格上涨? Prepare your arguments, and list the customers' counterargument and your replies. 请准备好您的论点，并列出客户的反驳观点和您的回复。	

5.5 Conclusion, Wrap-Up, slide 109 – 113

结论、总结，幻灯片 109-113

The purpose of this session is to repeat the most important topics from the two days and to provide a number of useful links to the participants.

The contents of the two last slides must be adapted to the normal practice of the trainer.

目的是，重复两天来的重要议题，提供给参与者有用的链接。

培训员的常规训练务必要采用最后两张的幻灯片的内容。

Conclusion – recap结论回顾

- Caution when purchasing material first time
- 第一次购买物料时注意事项
- Caution in continuous deliveries – large changes in volume
  持续交付时，数量出现大的变化时的注意事项
- Handling of scrap or excess material 处理废料和多余物料
- Acquire and check technical documentation
  - (Material) Safety data sheets 物料安全数据表
  - Bill of substances 物质清单
  - Self-declarations 自我声明
- Material management system to support your work
  物料管理系统可以支持您的工作
- Thorough maintenance of data is crucial
  彻底详细的数据维护是至关重要的。

Useful links有用链接

- Relevant legislation for toys: 涉及玩具的重要立法 http://ec.europa.eu/enterprise/sectors/toys/documents/relevant-legislation/index_en.htm
- Toys safety directive in Chinese language: 玩具安全指令（中文） http://ec.europa.eu/DocsRoom/documents/4965/attachments/1/translations/ns/renditions/native
- Technical documentation guidance document (CN): 技术文件指南（中文） http://ec.europa.eu/DocsRoom/documents/4241/attachments/1/translations/ns/renditions/native
- Overview of Toys Safety guidance documents: 玩具安全指导性文件概览 http://ec.europa.eu/enterprise/sectors/toys/documents/guidance/index_en.htm
- European Commission's website for toys safety: 欧盟关于玩具安全的网站http://ec.europa.eu/enterprise/sectors/toys/index_en.htm
- List of product contact points: 产品接触点列表 http://ec.europa.eu/enterprise/intsub/a12/index.cfm?fuseaction=a12.menucontacts

Evaluation评价

- What did you find useful and good in this training?
  此次培训中您认为有用有益的知识是什么？
- What would you recommend me to increase?
  您建议我还需要添加哪些知识？
- What would you recommend me to decrease?
  您建议我削减哪些内容？
- Any other good ideas or advice
  或其他想法或建议？

Contact details?联系细节？

Torben Rahbek
tr@torbenrahbek.dk

版本说明
编著
德国国际合作机构（GIZ）

机构地址
波恩和埃施博恩

中国玩具生产物料管理与产品安全战略联盟

Dag-Hammarskjöld-Weg 1-5
65760埃施博恩
电话： +49 6196 79-0
传真： +49 6196 79-1115

电邮：info@giz.de
网址：www.giz.de

合作方：思乐（Schleich）有限公司，施瓦本格明德

图片提供
思乐（Schleich）有限公司（封面、封底图片）

时间：2014年11月

德国国际机构对本出版物中的内容负责

受德国联邦经济合作与发展部（BMZ）、经济合作处委托

BMZ通讯地址

BMZ 波恩
Dahlmannstraße 4
53113 波恩
电话： +49 228 99 535- 0
传真： +49 228 99 535-35000

BMZ 柏林 | im Europahaus
Stresemannstraße 94
10963 柏林
电话： +49 30 18 535-0
传真： +49 30 18 535-2501

电邮：poststelle@bmz.bund.de
网址：www.bmz.de

Impressum
Herausgeber:
Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

Sitz der Gesellschaft
Bonn und Eschborn

Strategische Allianz zu Materialmanagement und Produktsicherheit in der Herstellung von Spielwaren in China

Dag-Hammarskjöld-Weg 1-5
65760 Eschborn
T +49 6196 79-0
F +49 6196 79-1115

info@giz.de
www.giz.de

In Kooperation mit Schleich GmbH, Schwäbisch Gmünd

Bildnachweis
Schleich GmbH (Titel und Rückseite)

Stand: November 2014

Die GIZ ist für den Inhalt der vorliegenden Publikation verantwortlich.

Im Auftrag des
Bundesministeriums für wirtschaftliche Zusammenarbeit
und Entwicklung (BMZ);
Referat Zusammenarbeit mit der Wirtschaft;

Postanschrift der BMZ-Dienstsitze

BMZ Bonn
Dahlmannstraße 4
53113 Bonn
T +49 228 99 535-0 T
F +49 228 99 535-3500 F

BMZ Berlin | im Europahaus
Stresemannstraße 94
10963 Berlin
+49 30 18 535-0
+49 30 18 535-2501

poststelle@bmz.bund.de
www.bmz.de