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Data in Digital SDS Management Systems for OEHS Professionals

October 16, 2024

Agenda

- Introductions
- Data (and their sources) for OEHS professionals
- Challenges associated with data in traditional SDS formats
- Unlocking valuable data from SDS via digitalization
- Implementation of a digital SDS management system
- Real world application and use cases
- Future trends in digital SDS data management
- Q&A

Introductions

Today’s speaker

Erhi G-Das

Team Lead, Product Stewardship Solutions Engineering, EMEA, Sphera

Sphera is the leading global provider of **enterprise sustainability, risk and performance management** software, data and services.

ENVIRONMENT, HEALTH, SAFETY & SUSTAINABILITY

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OUR MISSION

To create a safer, more sustainable and productive world.

Data (and their sources) for OEHS Professionals

3 Keys Aspects of Data for OEHS Professionals

Know Your Data

Maintain Your Data

Use Your Data

Poll Question #1

What are some sources of data that you use in your regular activities as OEHS professionals?

Some typical sources of data for OEHS professionals

- Workplace monitoring and sampling e.g., data collected from installed real time sensors for air quality, water quality, noise levels etc.
- Incidents and Accidents Reports
- Health and Safety Surveys
- Medical Records*
- Safety Data Sheets

The humble Safety Data Sheet

“These seemingly mundane documents hold the key to understanding the hazards present in the workplace. With chemical inventories, we gain visibility into the substances workers encounter.

By combining this information with SDS, we unlock a treasure map of potential risks, enabling us to prioritize preventive measures”

Source: https://www.kha.com/the-complete-guide-to-industrial-hygiene-data/

Challenges of Traditional SDS Formats

Examples of Safety Data Sheets

Sigma-Aldrich.

www.sigmaaldrich.com

SAFETY DATA SHEET

Version 6.2
Revision Date 06/14/2023
Print Date 10/07/2023

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : 3,3'-Diaminobenzidine

Product Number : D8001
Brand : Sigma-Aldrich
Index-No. : 612-239-00-3
CAS-No. : 91-95-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302
Eye irritation (Category 2A), H319
Germ cell mutagenicity (Category 2), H341
Carcinogenicity (Category 1B), H350

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word Danger

Hazard statement(s)
H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H341 Suspected of causing genetic defects.
H350 May cause cancer.

Precautionary statement(s)

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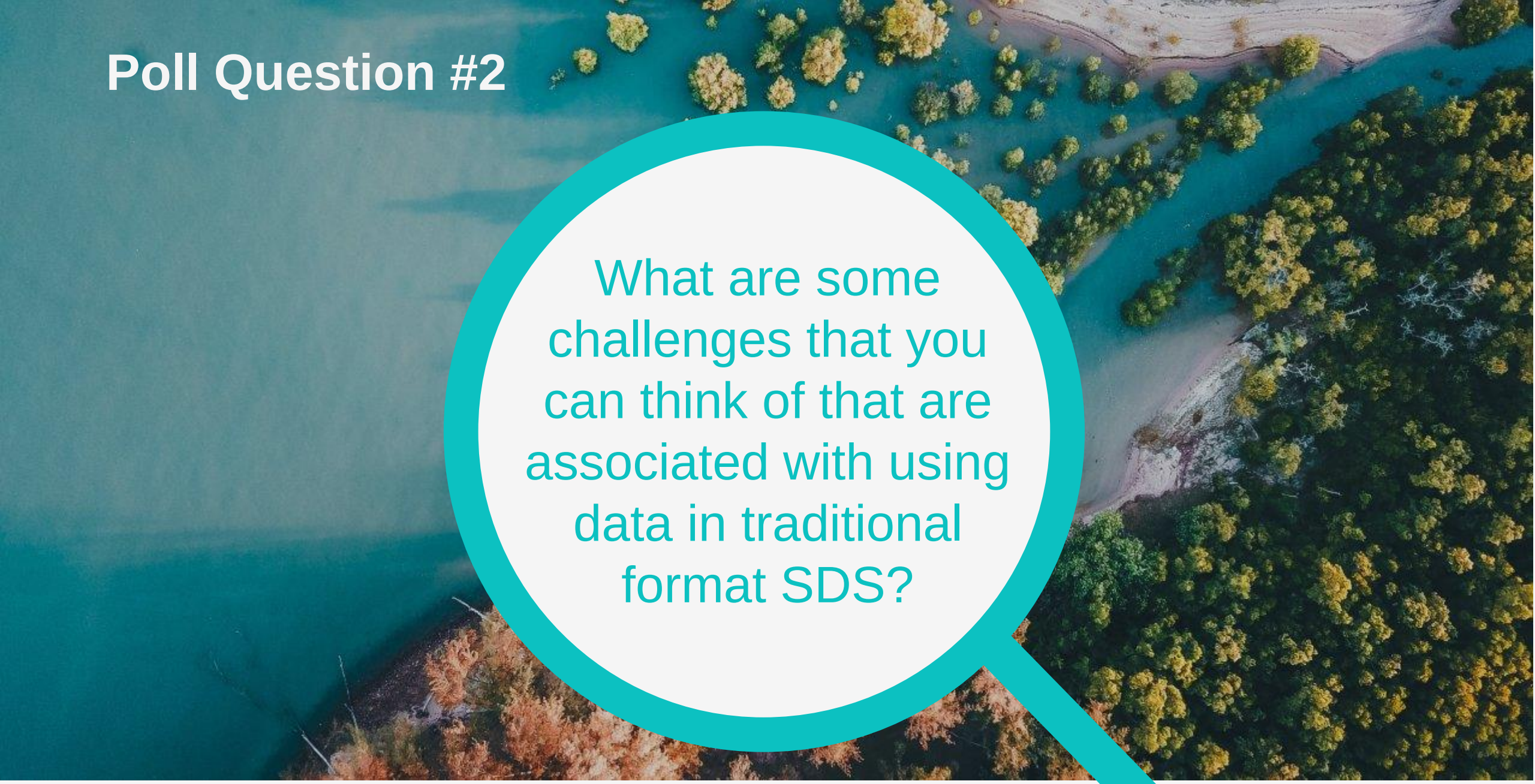
Poll Question #2



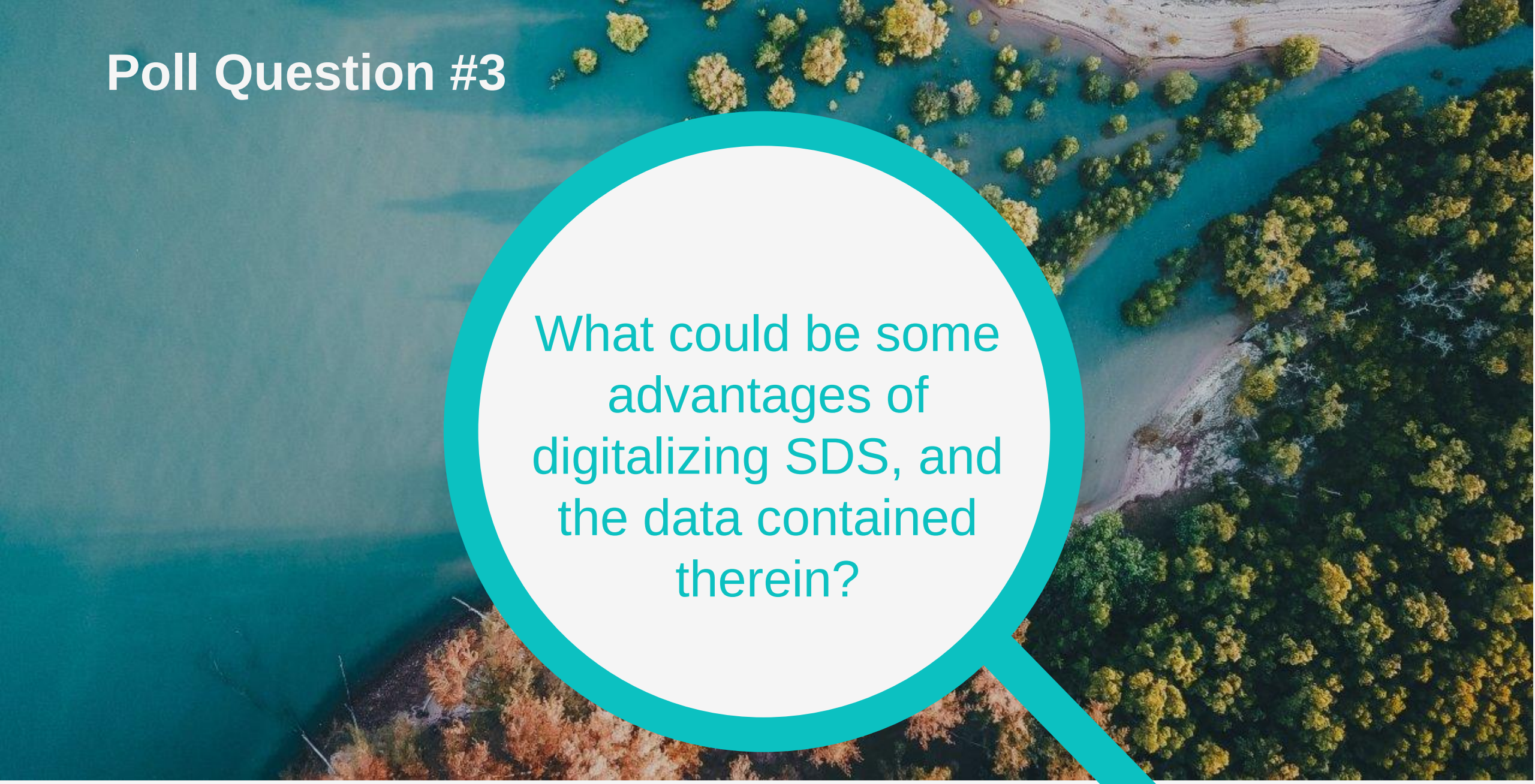
What are some challenges that you can think of that are associated with using data in traditional format SDS?

Examples of challenges linked to traditional format SDS

- Paper documents are hard to store, handle, etc.
- PDF documents have valuable data “locked in” them
- Hard to ensure everyone who needs to, has access to the documents
- Difficulty in ensuring you have the most current version of the SDS
- Hard to archive versions of SDS

Unlocking Valuable Data from SDS via Digitalization

Poll Question #3



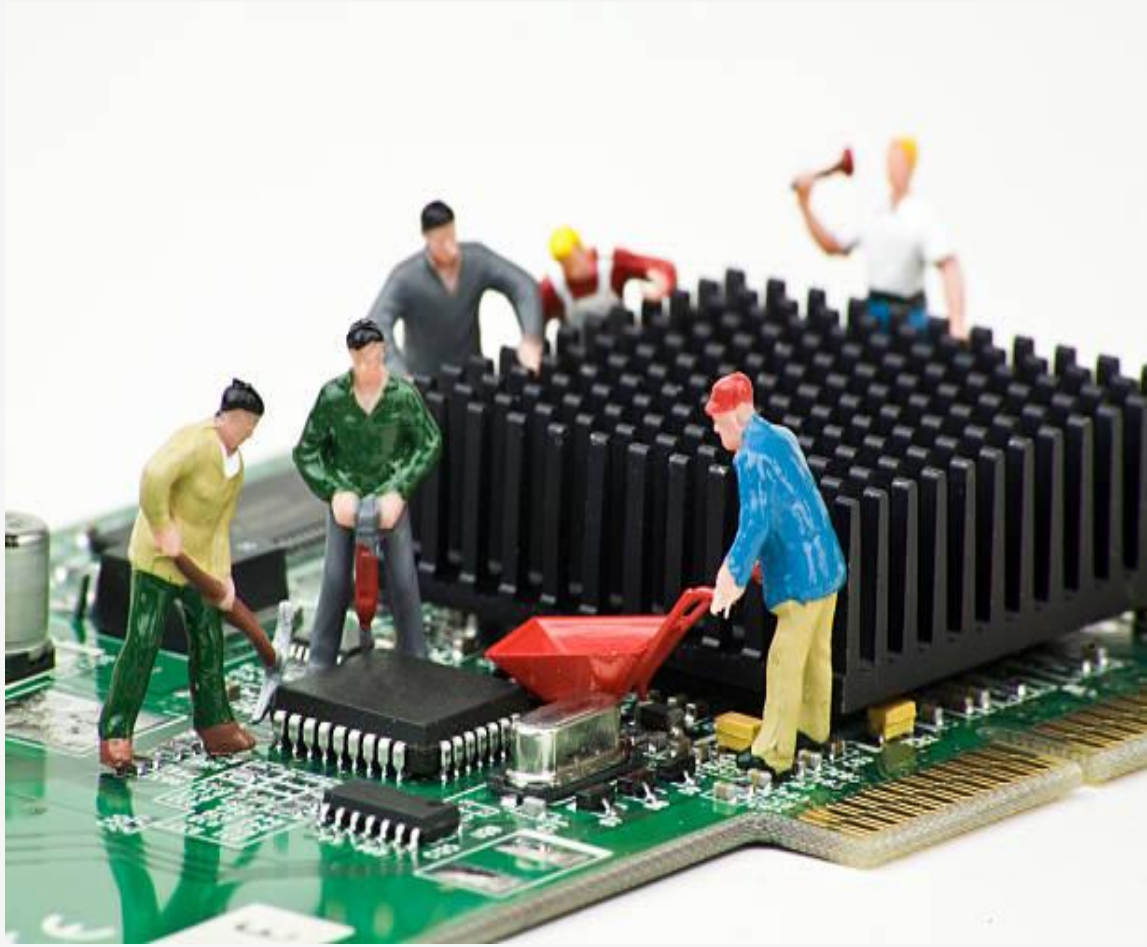
What could be some advantages of digitalizing SDS, and the data contained therein?

Centralized location, 24/7 access

- One central source of “truth” for all the organization’s SDS
- Potentially web-based, searchable and accessible 24/7 for those with relevant log-in permissions
- SDS accessible via multiple options including PC, laptops and mobile devices

Data Indexing

- Static data from the PDF SDS document is extracted, digitalized and made available within the SDS management solution
- Consistency in methodology of indexing said data; and standardizing data extracted for high quality digital data yield



Building up Specific Material Profiles

- SDS data can be combined with other inputted data to build organization specific material profiles
- Examples of other data that can be inputted include “material use”, “facility information”, “person responsible”, etc.

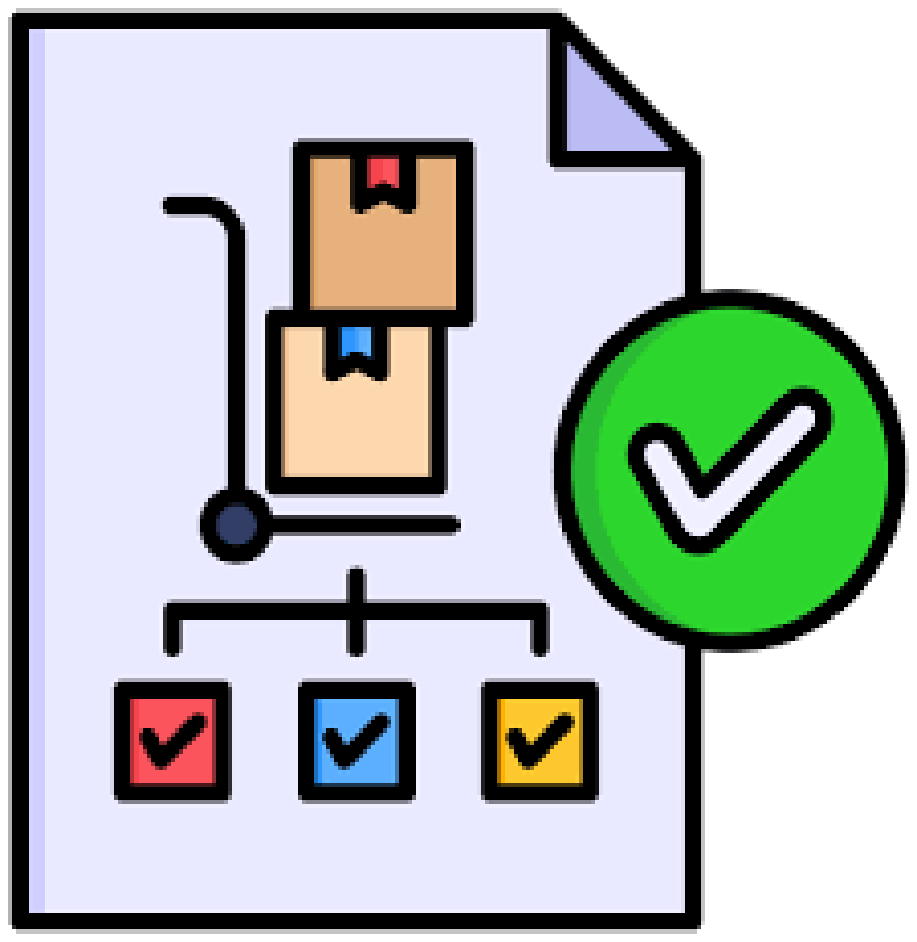
Leveraging indexed data for reports & analyses

- Once the data is “liberated” from the static SDS document, they are available for use along side other data within the digital SDS management system
- A good digital SDS management solution should have some form of in-built reporting and analytics functions, as standard

Implementation (and best practices) of Digital SDS Management System

Assigning the material to a specific location of use within the organisation

- A good SDS management system should allow users the flexibility to mirror their org structure within the solution
- Digitally linking a material and its SDS data to a location appears simple enough, *BUT CAN BE* vital to gaining operational insights

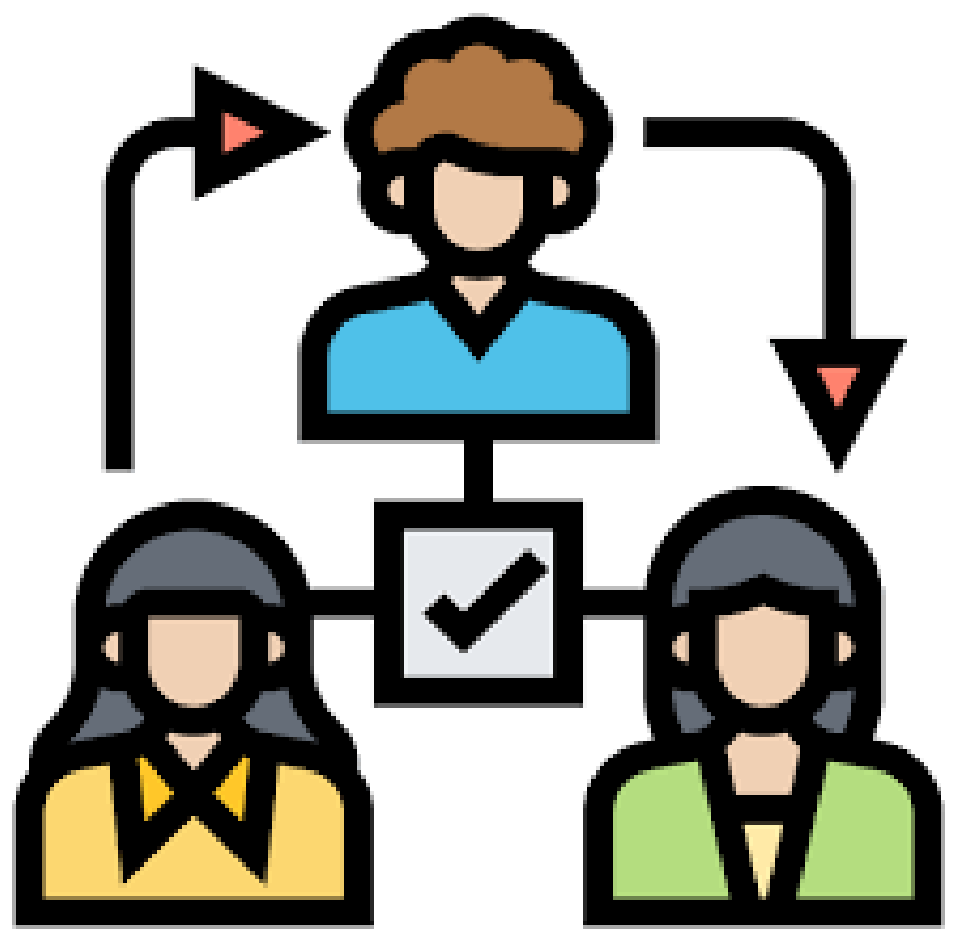


Ensuring that the SDS on record is always the most current version of the document

- It can be a challenge to ensure that the SDS you hold are always up to date
- A good digital SDS management system should provide some services to ensure that subscribers always have the most current versions of SDS

Built-in approval processes or workflow tools

- If the SDS management solution comes with a built-in, flexible and configurable workflow tool, subscribers can readily control what materials come into their organisation etc.
- A robust workflow tool would allow for certain automations within it such as notifications, initial screenings, etc.



Keeping track of inventory of materials on site

- With materials assigned to locations, you should be able to keep good track of your entire chemical inventory
- You may even be able to monitor quantities of materials available at any given time

Providing maintained regulatory content for cross-referencing

- The regulatory landscape for hazardous materials is constantly changing
- An SDS management solution that provides *AND* maintains some sort of regulatory content library would be of great use to subscribers

Real-world applications and use cases

Use Case: Protecting vulnerable staff

Scenario

- A pre
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  child

Administration CIT Ledgers MAPS Reports Search

Material Properties Report

Revise Report Criteria

Export

English (United States)

Chemical Areas

Chemical Managem... ID	Material Name	Manufacturer Name	Material Status	CAS	Chemical Areas	GHS Classifications: H341 Suspected of causing genetic defects.	GHS Classifications: H360 May damage fertility or the unborn child.	GHS Classifications: H36 damage the unborn
Chemical Areas:								
Chemical Areas: Default Receiving Area								
29538	Formaldehyde solution 37%	Fisher Scientific Company	Active		Default Receiving Area	Suspected of causing genetic defects.| Suspected of causing genetic defects.		
2348051	MasterSil 153MED (Part-B)	Master Bond, Inc.	Active		Default Receiving Area	Suspected of causing genetic defects.		
2872182	JB18118-2; SL-19; B87-1; D71-1	Kaneka North America LLC	Active		Default Receiving Area		May damage fertility or the unborn child.	
607559	(-)-Camphor-10-sulfonic Acid	Fluka Chemical Corp.	Active	35963-20-3	Default Receiving Area			
297714	(+)-1-(9-Fluorenyl)Ethyl Chloroformate, 18mM Solution in Acetone	Aldrich Chemical Company, Inc.	Active		Default Receiving Area			
2546175	910-175 CURING SOLUTION	PPG Industries Argentina S.R.L.	Active		Default Receiving Area			
2914880	A® 2044 Sodium Silicate Solution	PQ Corporation	Active	1344-09-8	Default Receiving Area			
568355	A® 2047 Sodium Silicate Solution	PQ Corporation	Active	1344-09-8	Default Receiving Area			

Use Case: Locating materials based on their properties

Scenario

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Administration CIT Ledgers MAPS Reports Search

English (United States)

Material Properties Report

Revise Report Criteria

Export

Chemical Areas

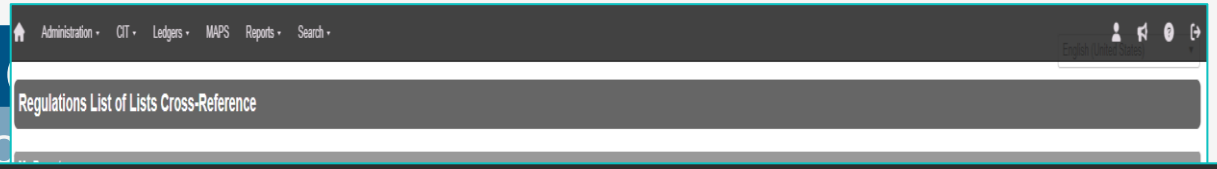
Chemical Managem... ID	Material Name	Manufacturer Name	Material Status	CAS	Chemical Areas	Physical Hazards: Flammable Gas	Physical Hazards: Flammable Liquid	Physical Hazards: Flan Solid
▸ Chemical Areas:								
▸ Chemical Areas: Default Receiving Area								
▸ Chemical Areas: Equipment A								
▾ Chemical Areas: Lab A								
44976	Methane	Airgas USA, LLC and its Affiliates	Active	74-82-8	Lab A	Flammable Gas		
297714	(+)-1-(9-Fluorenyl)Ethyl Chloroformate, 18mM Solution in Acetone	Aldrich Chemical Company, Inc.	Active		Lab A		Flammable Liquid	
2420411	1 10W-30	Exxon Mobil Corporation	Active		Lab A			
2799905	1J9 SILVER	PPG Industries, Inc.	Active		Lab A		Flammable Liquid	
1322040	2-Propanol	Sigma-Aldrich Inc.	Active	67-63-0	Lab A		Flammable Liquid	
243838	3,3'-Diaminobenzidine	Sigma-Aldrich	Active	91-95-2	Lab A			
2057603	3,3'-Diaminobenzidine	Sigma-Aldrich Chemie GmbH	Active	91-95-2	Lab A			
1052557	4,4'-Isopropylidenediphenol	Sigma-Aldrich Corporation	Active	80-05-7	Lab A			
2546175	910-175 CURING SOLUTION	PPG Industries Argentina S.R.L.	Active		Lab A		Flammable Liquid	

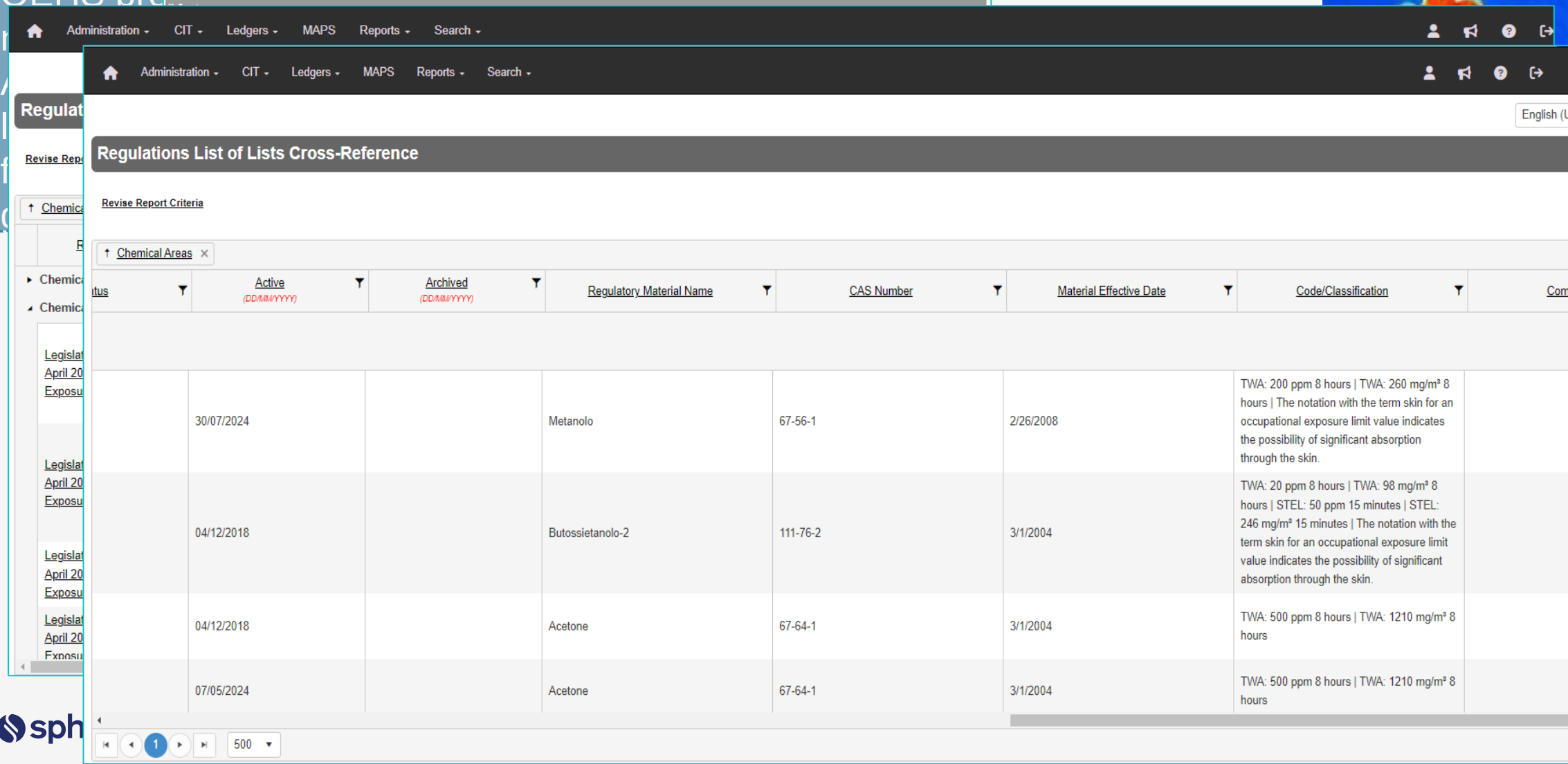
1 500 1 - 285 / 285

Use Case: Identifying exposure limit data

Scenari

- OEHS pro





Use Case: Extracting data for use elsewhere

Scenario

- OEHS needs data; SDS syste

	Regulation Name	Manufacturer	Chemical Areas	Ingredient	Ingredient CA	Conc	Concentration 1	Concen	Code/Classification	Comments
2	Legislative Decree no . 81 of 9 April 2008 - Occupational Exp	Sigma-Aldrich Inc.		Methanol	67-56-1	>=	10.000000000000000	%	TWA: 200 ppm 8 hours | TWA: 260 mg/m³ 8 hours | The nota	
3	Legislative Decree no . 81 of 9 April 2008 - Occupational Exp	Behr Process Corporation		Ethylene glycol	107-21-1	=	1.000000000000000	%wt	TWA: 20 ppm 8 hours | TWA: 52 mg/m³ 8 hours | STEL: 40 pp	
4	Legislative Decree no . 81 of 9 April 2008 - Occupational Exp	Avantor Performance Materials Inc		Ethyl acetate	141-78-6	=	99.000000000000000	%wt	STEL: 400 ppm 15 minutes | STEL: 1468 mg/m³ 15 minutes | '	
5	Legislative Decree no . 81 of 9 April 2008 - Occupational Exp	Hercules Chemical Company, Inc.		Sulfuric acid	7664-93-9	=	93.000000000000000	%	TWA: 0.05 mg/m³ 8 hours | Form: The atomisation is define	
6	Legislative Decree no . 81 of 9 April 2008 - Occupational Exp	Tanner Industries, Inc.							TWA: 20 ppm 8 hours | TWA: 14 mg/m³ 8 hours | STEL: 50 pp	As Chemical Group: ammonia
7	Legislative Decree no . 81 of 9 April 2008 - Occupational Exp	Tanner Industries, Inc.		Ammonium hydroxide	1336-21-6	=	10.000000000000000	%	TWA: 20 ppm 8 hours | TWA: 14 mg/m³ 8 hours | STEL: 50 pp	As Chemical Group: ammonia
8	Legislative Decree no . 81 of 9 April 2008 - Occupational Exp	Tanner Industries, Inc.		Ammonia, anhydrous	7664-41-7	=	10.000000000000000	%	TWA: 20 ppm 8 hours | TWA: 14 mg/m³ 8 hours | STEL: 50 pp	As Chemical Group: ammonia
9	Legislative Decree no . 81 of 9 April 2008 - Occupational Exp	Fisher Scientific Company	Default Receiving Area	Methyl alcohol	67-56-1	=	15.000000000000000	%wt	TWA: 200 ppm 8 hours | TWA: 260 mg/m³ 8 hours | The nota	
10	Legislative Decree no . 81 of 9 April 2008 - Occupational Exp	Fisher Scientific Company	Lab A	Methyl alcohol	67-56-1	=	15.000000000000000	%wt	TWA: 200 ppm 8 hours | TWA: 260 mg/m³ 8 hours | The nota	
11	Legislative Decree no . 81 of 9 April 2008 - Occupational Exp	Fisher Scientific Company	Lab B	Methyl alcohol	67-56-1	=	15.000000000000000	%wt	TWA: 200 ppm 8 hours | TWA: 260 mg/m³ 8 hours | The nota	
12	Legislative Decree no . 81 of 9 April 2008 - Occupational Exp	Sigma-Aldrich Inc.	Lab A						TWA: 2 mg/m³ 8 hours | Form: inhalable fraction | The nota	
13	Legislative Decree no . 81 of 9 April 2008 - Occupational Exp	Sigma-Aldrich Inc.	Lab A	4,4'-Isopropylidenedi	80-05-7	<=	100.000000000000000	%	TWA: 2 mg/m³ 8 hours | Form: inhalable fraction | The nota	
14	Legislative Decree no . 81 of 9 April 2008 - Occupational Exp	MacDermid Inc.		Sodium fluoride	7681-49-4	=	1.0000			
15	Legislative Decree no . 81 of 9 April 2008 - Occupational Exp	Rust-Oleum Corporation		Ethylbenzene	100-41-4	=	10.000			
16	Legislative Decree no . 81 of 9 April 2008 - Occupational Exp	Rust-Oleum Corporation		Toluene	108-88-3	=	20.000			
17	Legislative Decree no . 81 of 9 April 2008 - Oc									
18	Legislative Decree no . 81 of 9 April 2008 - Oc									
19	Legislative Decree no . 81 of 9 April 2008 - Oc									
20	Legislative Decree no . 81 of 9 April 2008 - Oc									
21	Legislative Decree no . 81 of 9 April 2008 - Oc									
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29	Legislative Decree no . 81 of 9 April 2008 - Oc									
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40	Legislative Decree no . 81 of 9 April 2008 - Oc									
41	Legislative Decree no . 81 of 9 April 2008 - Oc									
42	Legislative Decree no . 81 of 9 April 2008 - Oc									
43	Legislative Decree no . 81 of 9 April 2008 - Oc									

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Future Trends in Digital SDS Data Management

Poll Question #4

What do you think the future holds for digital SDS data management?

Some future trends in digital SDS data management

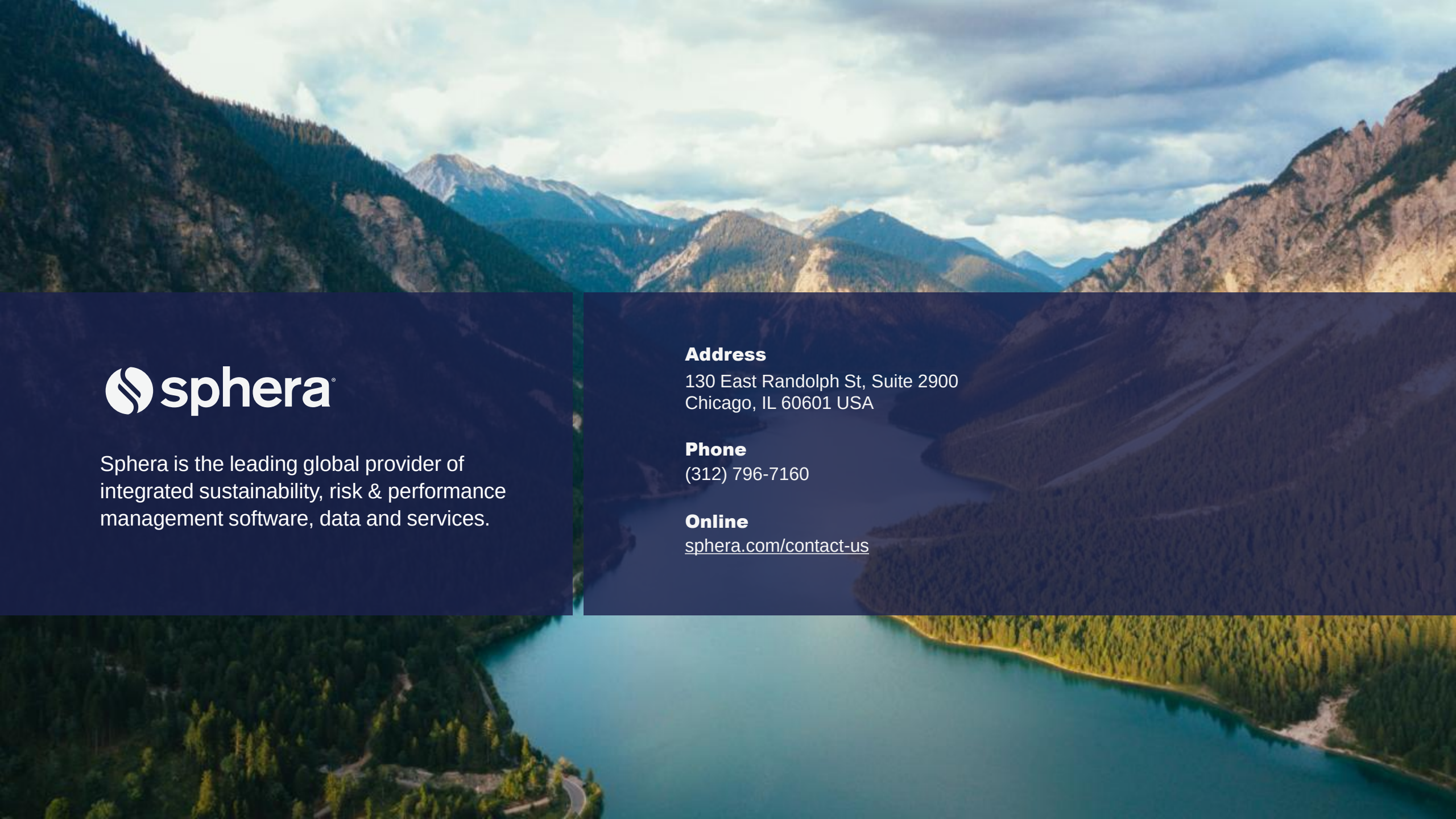
AI

Smarter Integration

Modern UX

Advanced Analytics

Q & A



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