

Standardization of Detailed Format of Safety Data Sheet (SDS) of Globally Harmonized System (GHS) of the United Nations (UN)

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Abstract:- This work was on the systematic standardization of SDS in the context of UN GHS. This research revolved around the problem of inconsistency in SDS formats and terminologies used worldwide, which may pose even bigger risks in terms of occupational health, environmental safety, industrial hygiene, regulatory compliance etc. Using the mixed-method, this paper assessed the current SDS practices, examined stakeholder perceptions, and proposed an all-inclusive parameter format that could be adapted to fit within established regulatory frameworks. Findings from the study indicated that a standardized SDS could improve clarity and usability, thus enabling better communication and safety practices across various industries.

Keywords:- Safety Data Sheet (SDS); Globally Harmonized System (GHS) Formatting; Standardisation; Detailed Format.

I. INTRODUCTION

In today's environment of trade globally and for the protection of nature, open and unmistakable communication of risks due to chemicals is unavoidable. SDS provide critical information in such communications as they would enable the passage of information regarding the properties, hazards, chemical substance handling, recommended safety precautions etc [1].

Inconsistent presentation and content of SDS across different jurisdictions make it challenging for multinational companies to comply with the requirements and raise risks associated with chemical management [2]. This study forms a part of the GHS, which is a universal framework in standardizing chemical classification, hazard communication etc.

II. RESEARCH PROBLEM STATEMENT

The absence of a uniform format for SDS leads to lack of standardization, hence, inconsistencies that act as barriers to effective hazard communication, pose regulatory compliance challenges, and increase the risks of occupational health and safety [3]. This study seeks to formulate an integrative parameter format of SDS which would be designed to meet the GHS guidelines and enhance international consistency in chemical hazard communication.

III. RESEARCH QUESTIONS

1. How do current disparities in SDS formats and content affect knowing and adhering to regulations regarding chemical safety?
2. What are the perceptions among industry stakeholders of current SDS practices, and what challenges do they face?
3. Which constituents are necessary for the formation of an all-inclusive parameter format for SDS that is compatible? [4]

IV. LITERATURE REVIEW

Literature review of formats on SDS and GHS implementation has documented key themes emerging. Studies promote standardized documentation in the workplace for better safety and care of the environment [5]. Issues in language, terminology, and formatting show the failure of effective communication and compliance with the stipulated measure [6]. In addition, stakeholder views show variations in the use of SDS across sectors. There is a need for combining regulatory requirements with application, which is taken as a unified approach.

V. METHODS

A mixed-methods research design was applied, combining qualitative interviews and quantitative surveys. Interviews with stakeholders were carried out from various manufacturing industries, pharmaceuticals, logistics etc to gain insights from those who would give the deepest understanding of current practices and challenges. Surveys were conducted on a larger audience to quantify the effectiveness of SDS, areas for improvement etc

VI. METHODOLOGIES

Qualitative: Thematic analysis of interview data to identify all parameters, emergent common challenges, preferences in the use of SDSs etc.

Quantitative: Statistical analysis of survey responses into revealing patterns in stakeholders' perspectives related to SDS is considered quantitative research.

Comparative Analysis: Review of the existing SDS formats in use across jurisdictions to identify differences and potential integration points in efforts toward standardization.

VII. THE PROPOSED DETAILED FORMAT OF SDS

The proposed detailed format is presented in Appendix 1 with 16 sections, 3 levels, 1124 line items etc

VIII. DATA SET

The data set included qualitative data based on 30 semi-structured interviews and quantitative data from 298 respondents who took the survey across different sectors. Furthermore, based on a comparative analysis of 5 SDSs from different regulatory environments, a base established for benchmarking existing standards and practices.

IX. ANALYSIS

The analysis conducted had summarized other common obstacles identified among the stakeholders: lack of understanding of chemical hazard information, inconsistency of terms etc. The survey shows that most stakeholders require a detailed, understandable format, which is aligned with GHS. Comparison served to emphasize the stark contrast in the variation in SDS structures and content, which further underlined the importance of standardization with complete details.

X. FINDINGS

The findings recommend a proposed detailed format for SDS given in appendix 1 with all inclusive parameters like chemical identity, hazard classification, handling, emergency measures etc in an exhaustive format. Stakeholders presented their views whereby they reported that such a standardized approach will facilitate clarity, compliance, safety etc across industries.

XI. CONCLUSION

This research article adds up to foundational knowledge about the need for standardized and detailed SDS that are in-line with GHS. The detailed format proposed addresses the differences currently in existence and upgrades hazard communication to enhance safety outcomes in the industrial safety management system.

XII. FUTURE RESEARCH

Implementation of this detailed SDS format should be conducted in several regulatory contexts as future research.

➤ NOTE

Only limited details of data set, analysis, results etc are presented here due to pre-thesis publication constraints and complete details would be shared for any future research on presentation of satisfactory justification of research to the primary author (Putalpattu Muni Prasad).

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ANNEXURE 1

#	level 1	level 2	level 3
1	<u>Section1A. Product Identification</u>		
2		Use of Substance/Preparation	
3			Industry sector
4			Way of Application
5			Specific Use
6			Recommended Restriction on Use
7			Remarks
8	<u>Section1B. Company Identification</u>		
9		Name (Country wise)	
10		Registration details (Country wise)	
11		Notification recipient(s) details	
12	<u>Section2. Hazards Identification</u>		
13		Composition	
14			Component Type
15			E V Value
16			UoM
17			OP Lower limit
18			OP Upper limit
19		GHS Classification (General)	
20			Regulatory basis
21			Regulatory list
22			Revision
23			Hazard Class
24			Hazard Category
25			Route of Exposure
26			Target Organ(s)
27			Hazard Statements
28			Additional Information
29			Remarks
30		GHS Labeling (General)	
31			Regulatory Basis
32			Regulatory List
33			Revision
34			Symbols
35			Signal Word
36			Hazard Statements
37			Suppl. Hazard Statements
38			Prec. Statemans: General
39			Prec. Statements: Prevention
40			Prec. Statements: Response
41			Prec. Statements: Storage
42			Prec. Statements: Disposal
43			Target Organs (Single Exp.)
44			Target Organs (Single, Oral)
45			Target Organs (Single, Inhal.)

46			Target Organs (Single, Dermal)
47			Target Organs (Repeated Exp.)
48			Target Organs (Rep., Oral)
49			Target Organs (Rep., Inhal.)
50			Target Organs (Rep., Dermal)
51			Additional Information
52			Remarks
53		Other Hazards (GHS)	
54			Other Hazards
55	<u>Section3. Composition/Inform. on Ingredients</u>		
56		Composition	
57			Component Type
58			E V Value
59			UoM
60			OP Lower limit
61			OP Upper limit
62		Chemical characterization	
63			Chemical Characterization
64		Hazardous Ingredients (GHS)	
65			Remarks
66	<u>Section4. First Aid Measures</u>		
67		First aid: general information	
68			Advice
69		First aid: inhalation	
70			Advice
71		First aid: skin	
72			Advice
73		First aid: eye	
74			Advice
75		First aid: ingestion	
76			Advice
77		Hints for Physician	
78			Symptoms
79			Hazards
80			Treatment
81	<u>Section5. Fire-Fighting Measures</u>		
82		Extinguishing media	
83			Suitable
84			Unsuitable
85		Hazards during fire-fighting	
86			Advice
87		Protective equipment for fire-fighting	
88			Advice

89		Fire-fighting / further advice	
90			Advice
91	<u>Section6. Accidental Release Measures</u>		
92		Personal precautions	
93			Advice
94		Environmental Precautions	
95			Advice: General
96			Advice: Air
97			Advice: Soil
98			Advice: Water
99		Methods for cleaning or taking up	
100			Advice
101		Further accidental release measures	
102			Advice
103	<u>Section7. Handling and Storage</u>		
104		Advice on safe handling	
105			Advice
106		Fire and explosion protection	
107			Fire and Explosion Protection
108		Temperature class	
109			Class
110		Classification of fires	
111			Class
112		Dust explosion class	
113			Dust Explosion Class St1 - St3
114		Storage requirements (SDS)	
115			Advice
116		Further info on storage conditions	
117			More Info on Storage Condit.
118		Mixed storage (general)	
119			Advice on Storage Condit.
120		Storage Class According to VCI (DE)	
121			Storage Class According to VCI
122		Storage stability	
123			Storage Period
124			Storage Temperature
125			Storage Moisture
126			Remarks
127	<u>Section8. Exposure Controls/Personal Protection</u>		
128		Composition	
129			Component Type
130			E V Value
131			UoM

132			OP Lower limit
133			OP Upper limit
134		Components with occupat. exposure limits	
135			Remarks
136		Occupational Exposure Limits (Europe)	
137			Regulatory Basis
138			Regulatory List
139			Revision
140			Value Type
141			Form of Exposure
142			Expressed As
143			Additional Information
144			Value in ppm (Standard Unit)
145			Value in ml/m3 (Standard Unit)
146			Value in mg/m3 (Standard Unit)
147			Value in Non-Standard Unit
148			Non-Standard Unit
149			Category Short-Time Exposure
150			Workplace
151			Remarks
152		Occupational Exposure Limits	
153			Regulatory Basis
154			Regulatory List
155			Revision
156			Value Type
157			Form of Exposure
158			Expressed As
159			Additional Information
160			Value in ppm (Standard Unit)
161			Value in ml/m3 (Standard Unit)
162			Value in mg/m3 (Standard Unit)
163			Value in Non-Standard Unit
164			Non-Standard Unit
165			Category Short-Time Exposure
166			Workplace
167			Remarks
168		Occupational Exposure Limits (NA)	
169			Regulatory Basis
170			Regulatory List
171			Revision
172			Value Type
173			Form of Exposure

174			Expressed As
175			Additional Information
176			Value in ppm (Standard Unit)
177			Value in ml/m3 (Standard Unit)
178			Value in mg/m3 (Standard Unit)
179			Value in Non-Standard Unit
180			Non-Standard Unit
181			Category Short-Time Exposure
182			Workplace
183			Remarks
184		Occupational Exposure Limits (A/P)	
185			Regulatory Basis
186			Regulatory List
187			Revision
188			Value Type
189			Form of Exposure
190			Expressed As
191			Additional Information
192			Value in ppm (Standard Unit)
193			Value in ml/m3 (Standard Unit)
194			Value in mg/m3 (Standard Unit)
195			Value in Non-Standard Unit
196			Non-Standard Unit
197			Category Short-Time Exposure
198			Workplace
199			Remarks
200		Occupational Exposure Limits (LA)	
201			Regulatory Basis
202			Regulatory List
203			Revision
204			Value Type
205			Form of Exposure
206			Expressed As
207			Additional Information
208			Value in ppm (Standard Unit)
209			Value in ml/m3 (Standard Unit)
210			Value in mg/m3 (Standard Unit)
211			Value in Non-Standard Unit
212			Non-Standard Unit
213			Category Short-Time Exposure
214			Workplace
215			Remarks

216		Advice on system design	
217			Advice
218		Respiratory Protection	
219			Advice
220			Filter Type
221		Hand protection	
222			Material
223			Min. Break-Through Time Gloves
224			Permeation Rate (Old)
225			Glove Thickness
226			Glove Length
227			Guideline
228			Protection Index
229			Manufacturer
230			Wearing Time
231			Additional Protection
232			Permeation Rate
233			Glove Recommendation
234		Eye protection	
235			Advice
236		Body protection	
237			Advice
238		Industrial hygiene	
239			Advice
240		General protective measures	
241			Advice
242	<u>Section9. Physical and Chemical Properties</u>		
243		Form	
244			Advice
245		State of matter	
246			State of Matter
247			Precision
248			Temperature
249			Accuracy
250			Pressure
251		Color	
252			Color
253		Odor	
254			Odor
255		Flash point	
256			Accuracy

257			Value
258			Accuracy
259			Pressure
260			Test Type
261			Method
262			GLP
263			Remarks
264		Auto ignition temperture	
265			Accuracy
266			Value
267			Accuracy
268			Pressure
269			Method
270			GLP
271			Remarks
272		Lower Explosion/Flammability Limit	
273			Phase
274			Accuracy
275			Value in %(Vol.)
276			Method
277			GLP
278			Remarks
279			Accuracy
280			Temperature
281			Accuracy
282			Pressure
283			Type
284		Upper Explosion/Flammability Limit	
285			Accuracy
286			Value in %(Vol.)
287			Method
288			GLP
289			Remarks
290			Accuracy
291			Value in mg/m3
292			Accuracy
293			Temperature
294			Accuracy
295			Pressure
296			Type
297		Flammability	
298			Result

299			Tci
300			Ki
301			Method
302			GLP
303		Oxidizing	
304			Oxidizing Type
305			Reference Substance
306			Ci
307			Method
308			GLP
309			Remarks
310		Self ignition	
311			Accuracy
312			Value
313			Accuracy
314			Pressure
315			Test Type
316			Method
317			GLP
318			Remarks
319		Burning number	
320			Burning Number
321			Accuracy
322			Temperature
323			Method
324			GLP
325			Remarks
326		Molar mass	
327			Accuracy
328			Value
329			Method
330			GLP
331			Remarks
332		pH	
333			Accuracy
334			pH value
335			Accuracy
336			Concentration
337			Accuracy
338			Temperature
339			Method
340			GLP

341			Remarks
342			Accuracy
343			Conc. in Non-Standard Unit
344			Non-Standard Unit
345		Phase transition solid/liquid	
346			Type
347			Accuracy
348			Value
349			Accuracy
350			Pressure
351			Decomposition
352			Method
353			GLP
354			Remarks
355		Phase transition liquid/gas	
356			Type
357			Accuracy
358			Value
359			Accuracy
360			Pressure
361			Decomposition
362			Method
363			GLP
364			Remarks
365		Phase transition solid/gas	
366			Type
367			Accuracy
368			Value
369			Accuracy
370			Pressure
371			Decomposition
372			Method
373			GLP
374			Remarks
375		Vapor pressure	
376			Accuracy
377			Value
378			Accuracy
379			Temperature
380			Decomposition
381			Method
382			GLP

383			Remarks
384		Density	
385			Accuracy
386			Value
387			Accuracy
388			Temperature
389			Accuracy
390			Pressure
391			Method
392			GLP
393			Remarks
394		Bulk density	
395			Accuracy
396			Value in kg/m3
397			Accuracy
398			Temperature
399			Accuracy
400			Pressure
401			Method
402			GLP
403			Remarks
404		Solubility in water	
405			Accuracy
406			Quantity
407			Accuracy
408			Temperature
409			Accuracy
410			Pressure
411			Method
412			GLP
413			Remarks
414			Accuracy
415			pH value
416		Partition coefficient n-octanol/water	
417			Accuracy
418			Value Pow
419			Accuracy
420			Value logPow
421			Accuracy
422			Temperature
423			Method
424			GLP

425			Remarks
426			Accuracy
427			pH value
428		Solubility (quantitative)	
429			Solvent
430			Accuracy
431			Value
432			Accuracy
433			Temperature
434			Method
435			GLP
436			Qualitative Description
437			Remarks
438		Viscosity, dynamic	
439			Accuracy
440			Value
441			Accuracy
442			Temperature
443			Method
444			GLP
445			Remarks
446		Viscosity, kinematic	
447			Accuracy
448			Value
449			Accuracy
450			Temperature
451			Method
452			GLP
453			Remarks
454		Flow time	
455			Accuracy
456			Value
457			Accuracy
458			Temperature
459			Cross-Section
460			Method
461			GLP
462			Remarks
463		Impact sensitivity	
464			Result
465			Value
466			Impact Weight

467			Height of Fall
468			Method
469			Remarks
470		Relative vapor density	
471			Accuracy
472			Value
473			Accuracy
474			Temperature
475			Method
476			GLP
477			Remarks
478		Surface tension	
479			Accuracy
480			Value
481			Accuracy
482			Temperature
483			Method
484			GLP
485			Remarks
486			Accuracy
487			Value in Non-Standard Unit
488			Non-Standard Unit
489			Accuracy
490			Conc. in Non-Standard Unit
491			Non-Standard Unit
492		Evaporation Rate	
493			Accuracy
494			Value
495			Method
496			GLP
497			Remarks
498	<u>Section10. Stability and Reactivity</u>		
499		Conditions to avoid (SDS)	
500			Name of Parameter
501			Value to Avoid
502			units
503			Remarks
504		Substances to avoid (SDS)	
505			Remarks
506		Decomposition products	
507			Type of List
508			Info on Hazardous Dec. Prod.

509		Thermal decomposition	
510			Accuracy
511			Value
512			Heating Rate
513			Decomposition Energy (Mass)
514			Decomposition Energy (Mol)
515			Method
516			GLP
517			Remarks
518		Hazardous reactions	
519			Reaction Type
520			Hazardous Reactions
521			Further Info on Stability
522			Method
523			GLP
524	Section11. Toxicological Information		
525		Hazardous Ingredients (GHS)	
526			Reaction Type
527			Hazardous Reactions
528			Further Info on Stability
529			Method
530			GLP
531		Acute oral toxicity	
532			Value Type
533			Species
534			Sex
535			Accuracy
536			Value in Standard Unit mg/kg
537			Accuracy
538			Value in Non-Standard Unit
539			Non-Standard Unit
540			Method
541			GLP
542			Test Substance
543			Remarks
544			Target Organs
545			Symptoms
546		Acute Inhalation Toxicity	
547			Value Type
548			Species
549			Sex
550			Exposure time

551			Accuracy
552			Value in standard unit mg/l
553			Accuracy
554			Value in standard unit ppm
555			Accuracy
556			Value in non-standard unit
557			Non-standard unit
558			Method
559			GLP
560			Test substance
561			Remarks
562			Test Atmosphere
563			Target Organs
564			Symptoms
565		Acute dermal toxicity	
566			Value Type
567			Species
568			Sex
569			Accuracy
570			Value in Standard Unit mg/kg
571			Accuracy
572			Value in Non-Standard Unit
573			Non-Standard Unit
574			Method
575			GLP
576			Test substance
577			Remarks
578			Target Organs
579			Symptoms
580		Acute toxicity other routes	
581			Value Type
582			Species
583			Sex
584			Route of Application
585			Exposure time
586			Accuracy
587			Value in Standard Unit mg/kg
588			Accuracy
589			Value in Standard Unit mg/l
590			Accuracy
591			Value in Non-Standard Unit
592			Non-Standard Unit

593			Method
594			GLP
595			Test substance
596			Remarks
597			Test Atmosphere
598			Target Organs
599			Symptoms
600		Skin irritation	
601			Species
602			Result
603			Classification
604			Method
605			Exposure time
606			GLP
607			Test substance
608			Remarks
609		Eye irritation	
610			Species
611			Result
612			Classification
613			Method
614			Exposure time
615			GLP
616			Test substance
617			Remarks
618		Sensitization	
619			Test Type
620			Species
621			Result
622			Classification
623			Method
624			GLP
625			Test substance
626			Remarks
627		Genetic toxicity in vitro	
628			Test Type
629			Test System
630			Concentration
631			Metabolic Activation
632			Result
633			Method
634			GLP

635			Test Substance
636			Remarks
637		Genetic toxicity in vivo	
638			Test Type
639			Species
640			Strain
641			Sex
642			Route of Application
643			Exposure Time
644			Dose
645			Method
646			GLP
647			Test Substance
648			Result
649			Remarks
650			Cell Type
651		Assessment CMR	
652			Carcinogenicity
653			Mutagenicity
654			Teratogenicity
655			Toxicity for Reproduction
656		Carcinogenicity	
657			Species
658			Strain
659			Sex
660			Route of Application
661			Exposure Time
662			Frequency of treatment
663			Post-exposure observ. period
664			Dose
665			Control group
666			Method
667			GLP
668			Test substance
669			Remarks
670		Toxicity to Reproduction/Fertility	
671			Test Type
672			Species
673			Strain
674			Sex
675			Route of Application
676			Exposure Time

677			Frequency of treatment
678			Premating expos. period, male
679			Premating expos. period, fem.
680			Test duration
681			Dose
682			Control group
683			Accuracy
684			NOAEL parent stand. unit mg/kg
685			NOAEL parent stand. unit mg/l
686			NOAEL parent non-standard unit
687			Accuracy
688			NOAEL F1 in stand. unit mg/kg
689			NOAEL F1 in stand. unit mg/l
690			NOAEL F1 in non-standard unit
691			Accuracy
692			NOAEL F2 in stand. unit mg/kg
693			NOAEL F2 in stand. unit mg/l
694			NOAEL F2 in non-standard unit
695			Method
696			GLP
697			Test Substance
698			Remarks
699		Developmental Toxicity/Teratogenicity	
700			Species
701			Strain
702			Sex
703			Route of application
704			Test duration
705			Exposure time
706			Frequency of treatment
707			Dose
708			Control group
709			Accuracy
710			NOAEL teratog. std. unit mg/kg
711			NOAEL teratog. std. unit mg/l
712			NOAEL teratog. non-std. unit
713			Accuracy
714			NOAEL mater. stand. unit mg/kg
715			NOAEL mater. stand. unit mg/l
716			NOAEL mater. non-standard unit

717			Method
718			GLP
719			Test substance
720			Remarks
721		Assessment STOT - Single Exposure	
722			Route of Exposure
723			Target Organs
724			Assessment
725			Remarks
726		Repeated Dose Toxicity	
727			Species
728			Strain
729			Sex
730			Route of Application
731			Exposure Time
732			Exposure Time Numeric Value
733			Frequency of Treatment
734			Post-Exposure Observ. Period
735			Dose
736			Control Group
737			Accuracy
738			NOAEL in Standard Unit mg/kg
739			NOAEL in Standard Unit mg/l
740			NOAEL in Non-Standard Unit
741			Accuracy
742			LOAEL in Standard Unit mg/kg
743			LOAEL in Standard Unit mg/l
744			LOAEL in Non-Standard Unit
745			Method
746			GLP
747			Test Substance
748			Remarks
749			Test Atmosphere
750			Target Organs
751			Symptoms
752			Value Type
753			Accuracy
754			Value in Standard Unit mg/kg
755			Accuracy
756			Value in Standard Unit mg/l
757			Accuracy
758			Value in Non-Standard Unit

759			Non-Standard Unit
760			Non-Standard Unit
761			Non-Standard Unit
762		Assessment STOT - Repeated Exposure	
763			Route of Exposure
764			Target Organs
765			Assessment
766			Remarks
767		Aspiration Toxicity Hazard	
768			Comment on Aspiration Toxicity
769		Neurological effects	
770			Memo
771		Other relevant toxicity information	
772			Test Type
773			Memo
774			Remarks
775	Section12. Ecological Information		
776		Composition	
777			Component Type
778			E V Value
779			UoM
780			OP Lower limit
781			OP Upper limit
782		Hazardous Ingredients (GHS)	
783			Remarks
784		Acute and prolonged toxicity to fish	
785			Test Type
786			Species
787			Exposure Time
788			Value Type
789			Accuracy
790			Value in Standard Unit mg/l
791			Value in Non-Standard Unit
792			Analytical Monitoring
793			Method
794			GLP
795			Test Substance
796			Remarks
797			Non-Standard Unit
798		Acute toxicity to aquatic invertebrates	
799			Test Type
800			Species

801			Exposure Time
802			Value Type
803			Accuracy
804			Value in Standard Unit mg/l
805			Value in Non-Standard Unit
806			Analytical Monitoring
807			Method
808			GLP
809			Test Substance
810			Remarks
811			Non-Standard Unit
812		Toxicity to aquatic plants	
813			Test Type
814			Species
815			End Point
816			Exposure Time
817			Value Type
818			Accuracy
819			Value in Standard Unit mg/l
820			Value in Non-Standard Unit
821			Analytical Monitoring
822			Method
823			GLP
824			Test Substance
825			Remarks
826			Non-Standard Unit
827		Toxicity to microorganisms	
828			Test Type
829			Species
830			Exposure Time
831			Value Type
832			Accuracy
833			Value in Standard Unit mg/l
834			Value in Non-Standard Unit
835			Analytical Monitoring
836			Method
837			GLP
838			Test Substance
839			Remarks
840			End Point
841			Non-Standard Unit
842		Chronic toxicity to fish	

843			Test Type
844			Species
845			End Point
846			Exposure Time
847			Value Type
848			Accuracy
849			Value in Standard Unit mg/l
850			Value in Non-Standard Unit
851			Analytical Monitoring
852			Method
853			GLP
854			Test Substance
855			Remarks
856			Non-Standard Unit
857		Chronic toxicity to aquat. invertebrates	
858			Test Type
859			Species
860			End Point
861			Exposure Time
862			Value Type
863			Accuracy
864			Value in Standard Unit mg/l
865			Value in Non-Standard Unit
866			Analytical Monitoring
867			Method
868			GLP
869			Test Substance
870			Remarks
871			Non-Standard Unit
872		Bioaccumulation	
873			Species
874			Exposure time
875			Temperature
876			Conc. in standard unit mg/l
877			Conc. in non-standard unit
878			Accuracy
879			Bioconcentration factor (BCF)
880			Elimination
881			Method
882			GLP
883			Test substance
884			Remarks

885			Non-Standard Unit
886		Distribution in environment	
887			Medium
888			Method
889			Remarks
890		Surface tension	
891			Accuracy
892			Value
893			Accuracy
894			Temperature
895			Method
896			GLP
897			Remarks
898			Accuracy
899			Value in Non-Standard Unit
900			Non-Standard Unit
901			Accuracy
902			Conc. in Non-Standard Unit
903			Non-Standard Unit
904		Transport Between Environm. Compartments	
905			Type
906			Medium
907			Method
908			Remarks
909			Accuracy
910			Koc
911			Accuracy
912			log Koc
913		Addit. remarks environm. fate & pathway	
914			Memo
915			Remarks
916		Biodegradation	
917			Test type
918			Inoculum
919			Conc. in standard unit mg/l
920			Conc. in standard unit mg/l
921			Related to
922			Accuracy
923			Biodegradation
924			Exposure time
925			Lag phase

926			Beginning of plateau phase
927			Result
928			Accuracy
929			Kinetic (value 1)
930			Time (value 1)
931			Accuracy
932			Kinetic (value 2)
933			Time (value 2)
934			Accuracy
935			Kinetic (value 3)
936			Time (value 3)
937			Accuracy
938			Kinetic (value 4)
939			Time (value 4)
940			Accuracy
941			Kinetic (value 5)
942			Time (value 5)
943			Method
944			GLP
945			Test substance
946			Remarks
947			Non-Standard Unit
948		Phys.-chem. elimination	
949			Related to
950			Accuracy
951			Phys.-Chem Eliminability Value
952			Method
953			Remarks
954		Biological oxygen demand (BOD)	
955			Concentration Value
956			Related to
957			Incubation Time
958			Accuracy
959			BOD Value in Stand. Unit mg/g
960			BOD Value in Stand. Unit mg/l
961			BOD Value in Non-Stand. Unit
962			Method
963			GLP
964			Test Substance
965			Remarks
966			Non-Standard Unit
967		Dissolved organic carbon (DOC)	

968			Accuracy
969			DOC Value in Stand. Unit mg/g
970			DOC Value in Stand. Unit mg/l
971			DOC Value in Non-Standard Unit
972			Method
973			GLP
974			Test Substance
975			Remarks
976			Non-Standard Unit
977		Chemical oxygen demand (COD)	
978			Accuracy
979			COD Value in Stand. Unit mg/g
980			COD Value in Stand. Unit mg/l
981			COD Value in Non-Stand. Unit
982			Method
983			GLP
984			Test Substance
985			Remarks
986			Non-Standard Unit
987		Adsorption organ. bound halogen (AOX)	
988			Accuracy
989			AOX Value in Stand. Unit mg/l
990			AOX Value in Non-Standard Unit
991			Method
992			GLP
993			Test Substance
994			Remarks
995			Non-Standard Unit
996		Assessment Ecotoxicity	
997			Acute Aquatic Toxicity
998			Chronic Aquatic Toxicity
999			Toxicity Data on Soil
1000			Other Environm. Relev. Org.
1001			Impact on Sewage Treatment
1002		Assessment PBT	
1003			Results PBT Assessment
1004			Regulatory Basis
1005			Regulatory List
1006			Revision
1007			Additional Information
1008			Remarks

1009		Additional ecotoxicological remarks	
1010			Memo
1011			Remarks
1012	<u>Section13. Disposal Considerations</u>		
1013		Advice on disposal and packaging	
1014			Advice on Disposal
1015			Advice on Packaging
1016		Waste disposal of packages not cleaned	
1017			Advice
1018	<u>Section14. Transport Information</u>		
1019		Dangerous goods classification	
1020			Aggregate State for Transport
1021		Dangerous goods regulations	
1022			Dangerous Goods Regulation
1023			Collective Number
1024			Transport Permitted
1025			Dangerous Goods Class
1026			Subclass
1027			Item Number for Full Transport
1028			Schedule
1029			Danger Label Number
1030			Segregation Key
1031			Mixed Loading Rule
1032			Mixed Loading Group (Regul.)
1033			Max. Qty per Transport Unit
1034			Marine Pollutant
1035			MFAG Number 1
1036			MFAG Number 2
1037			EmS Number 1
1038			EmS Number 2
1039			Regulation Edition
1040			Note on Regulation
1041			Special Case
1042			EmS Number 1 Underlined
1043			EmS Number 2 Underlined
1044		Hazard inducer	
1045			Usage
1046		Dangerous goods user-defined texts	
1047			Dangerous Goods Regulation
1048			DG User-Defined Text Profile
1049			Dangerous Goods User-Def. Text

1050		Additional data for transport	
1051			Dangerous Goods Regulation
1052			EmS Number 1
1053			EmS Number 2
1054			MFAG Number 1
1055			MFAG Number 2
1056			Marine Pollutant
1057			EmS Number 1 Underlined
1058			EmS Number 2 Underlined
1059			Hazchem Code
1060		Hazard notes	
1061			Advice
1062		Further information for transport (SDS)	
1063			Advice
1064			Ship Type
1065			Pollution Category
1066			Remarks
1067	<u>Section15. Regulatory Information</u>		
1068		Composition	
1069			Component Type
1070			E V Value
1071			UoM
1072			OP Lower limit
1073			OP Upper limit
1074		Combust. Liquids Danger Class (DE,AT,DA)	
1075			Hazard Class
1076			Remarks
1077		Major Accident Hazards (EU)	
1078			Regulation
1079			Revision
1080			Listed in Regulation
1081			Number in Regulation
1082			Amount1 in Standard Unit kg
1083			Amount2 in Standard Unit kg
1084			Remarks
1085		Water Pollution (DE)	
1086			Regulatory Basis
1087			Regulatory List
1088			Revision
1089			Water Pollution Class
1090			Identification Number
1091			Reference

1092			Remarks
1093		Classification According to TA Luft (DE)	
1094			Regulatory Basis
1095			Regulatory List
1096			Revision
1097			Paragraph and Class of TA Luft
1098			Type
1099			Category
1100			Part Class 1 in %
1101			Part Class 2 in %
1102			Part Class 3 in %
1103			Part Class 4 in %
1104			Proportion of Other Subs. in %
1105			Remarks
1106		Notification status	
1107			Notification Basis
1108			Regulatory List
1109			Revision
1110			List Notification
1111			Component Notification
1112			Notification
1113			Additional Info
1114			Notification Date
1115			Notification Number
1116			Remarks
1117		Other regulations (SDS)	
1118			Other Regulations (SDS)
1119	<u>Section16. Other Information</u>		
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1121			Other information
1122			Training Advice
1123			Technical Contact Point
1124			Sources of Key Data