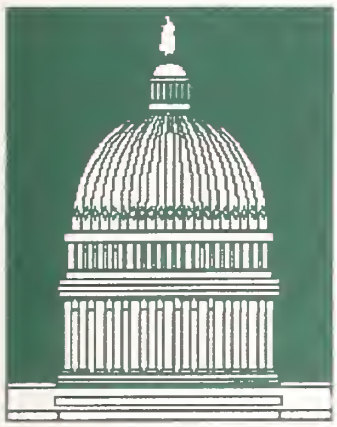
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NIST Special Publication 881-62



Federal Implementation Guideline for Electronic Data Interchange

ASC X12 003050 Transaction Set 848S Material Safety Data Sheet (Semi-Structured)

Implementation Convention

U.S. DEPARTMENT OF COMMERCE
Technology Administration
National Institute of
Standards and Technology

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[1] At Boulder, CO 80303.
[2] Some elements at Boulder, CO.

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Electronic Commerce Acquisition Program Management Office
Standard Management Committee - Secretariat
National Institute of Standards and Technology
Gaithersburg, MD 20899-0001

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The National Institute of Standards and Technology (NIST)'s Information Technology Laboratory (ITL) develops standards and guidelines, provides technical assistance, and conducts research for computers and resources. As part of the overall federal effort to establish a single face to industry for conducting electronic commerce, ITL has been designated as the organization responsible for coordinating the development of Federal Implementation Conventions (ICs) for Electronic Data Interchange (EDI). ICs are defined by functional-area experts who create and select options from standard EDI Transaction Sets to yield the implementations to be used for practical EDI. These ICs are made available to federal agencies and industry by electronic means and this Special Publication Series.

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848 Material Safety Data Sheet

Functional Group ID=MS

Introduction:

This Draft Standard for Trial Use contains the format and establishes the data contents of the Material Safety Data Sheet Transaction Set (848) for use within an Electronic Data Interchange (EDI) environment. The transaction set can be used to communicate chemical characteristics, hazards, and precautions for the safe handling and use of a material. The transaction set is intended to convey the information required for a Material Safety Data Sheet (MSDS) as defined by the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910.1200 in the United States, and Workplace Hazardous Materials Information System (WHIMS) in Canada, and various state, province, and local requirements under right-to-know legislation.The MSDS provides the receiver with detailed information concerning material identity, emergency response, chemical and physical characteristics, toxicology, and industrial hygiene procedures.State and federal law dictate who is obligated to provide the MSDS and to whom it should be issued. In addition, third-party providers or others with no statutory obligation may voluntarily provide an MSDS to anyone.This transaction set allows for transmission of MSDS data in a structured, unstructured, or semi-structured form.CAUTION: With this transaction set, text format is critical due to the MSDS's primary role as a vehicle for hazards communication. The risk if this information is not transmitted clearly and accurately could be harmful to human life, harmful to the environment, could cause mishandling of product, could result in regulatory non-compliance, and could result in liability.Trading partners need to agree on how to interpret, store, and display/print MSDS text, especially text contained in the MSG and SD1 segments. For example, a sender may wish to format text so that one print line is mapped to one MSG segment. Segment terminator and data element delimiter characters shall not appear in any MSDS data.WARNING: Alteration of the original document will occur if the EDI translator or application software converts characters to uppercase. This may adversely affect the appearance, effectiveness, clarity, readability, and communicability of the printed MSDS document.

Notes:

1. This implementation convention provides the semi-structured format for the submission of a Material Safety Data Sheet (MSDS). The Federal Government seeks to maximize the use of the fully structured convention and encourages its use by trading partners.

2. This data requirement conforms with the Chemical Manufacturer's Association ANSI standard for MSDS preparation (ANSI Z400.1) and provides for Hazard Communication (HAZCOM) Warning Label information.

3. Strict version control of each MSDS for unique products and formulations is required. The primary method for MSDS identification is through a linkage between a unique MSDS reference number, a revision number if applicable, a manufacturer's part number, a CAGE (commercial and government entity), and MSDS effective date. Priority should be given to this data when identifying a unique product.

4. Send only one MSDS per transaction.

5. The ANSI Z400 MSDS structure requires a Section Header for each specified section of the MSDS. If no information is applicable or available, an indicative message in 2/MSG/050 must follow the section identification information, for example, "no data available," "not applicable", or "found in another section."

Heading:

Pos.	Seg.	Req.	Loop	Notes and

	No.	ID	Name	Des.	Max.Use	Repeat	Comments
Must Use	010	ST	Transaction Set Header	M	1		
Must Use	020	BMS	Beginning Segment For Material Safety Data Sheet	M	1		
Not Used	030	NTE	Note/Special Instruction	O	>1		
Must Use	040	REF	Reference Numbers	O	>1		
	050	DTM	Date/Time Reference	O	>1		
			LOOP ID - N1			>1	
	060	N1	Name	O	1		
	070	N2	Additional Name Information	O	>1		
	080	N3	Address Information	O	>1		
	090	N4	Geographic Location	O	1		
	100	REF	Reference Numbers	O	>1		
	110	PER	Administrative Communications Contact	O	>1		

Detail:

	Pos. No.	Seg. ID	Name	Req. Des.	Max.Use	Loop Repeat	Notes and Comments
			LOOP ID - LIN			999999	
Must Use	010	LIN	Item Identification	M	1		n1
	020	PID	Product/Item Description	O	>1		
			LOOP ID - MSS			>1	
	030	MSS	Material Safety Data Sheet Section Information	O	1		n2
Not Used	040	MEA	Measurements	O	>1		
	050	MSG	Message Text	O	>1		n3
			LOOP ID - SD1			>1	
Not Used	060	SD1	Safety Data	O	1		n4
Not Used	070	MEA	Measurements	O	>1		
Not Used	072	PKG	Marking, Packaging, Loading	O	>1		
Not Used	074	TD4	Carrier Details (Special Handling, or Hazardous Materials, or Both)	O	>1		
Not Used	080	MSG	Message Text	O	>1		n5
			LOOP ID - CID			>1	
Not Used	100	CID	Characteristic/Class ID	O	1		
Not Used	110	MEA	Measurements	M	>1		
			LOOP ID - LX			>1	
Not Used	115	LX	Assigned Number	O	1		
Not Used	120	CID	Characteristic/Class ID	O	1		
Not Used	130	MEA	Measurements	O	>1		
Not Used	140	STA	Statistics	O	1		
Not Used	150	TMD	Test Method	O	1		
Not Used	160	MSG	Message Text	O	>1		
			LOOP ID - SD1			>1	
Not Used	170	SD1	Safety Data	O	1		
Not Used	180	MEA	Measurements	O	>1		
Not Used	182	PKG	Marking, Packaging, Loading	O	>1		
Not Used	184	TD4	Carrier Details (Special Handling, or Hazardous Materials, or Both)	O	>1		

Not Used	190	MSG	Message Text	O	>1	
			LOOP ID - CID			>1
Not Used	210	CID	Characteristic/Class ID	O	1	
Not Used	220	MEA	Measurements	M	>1	

Summary:

	Pos. No.	Seg. ID	Name	Req. Des.	Max.Use	Loop Repeat	Notes and Comments
Not Used	010	CTT	Transaction Totals	O	1		n6
Must Use	020	SE	Transaction Set Trailer	M	1		

Transaction Set Notes

1. LIN loop is product level. MSS is section level. The first SD1 loop is safety data relating to the section only. The first CID loop is for complex measurements on safety data. LX loop is used to specify product characteristics, components, or complex measurements (i.e., those with environmental parameters). The second SD1 loop is safety data relating to a particular product characteristic or component. The second CID loop is for complex measurements on safety data, which related to a particular product characteristic or component.
2. Regulation notifications can be contained in MSS or SD1 or both.
3. Trading partners must agree on a convention for text processing that will not split words, and which can convey correct meaning, in successive SD1 or MSG segments.
4. Regulation notifications can be contained in MSS or SD1 or both.
5. Trading partners must agree on a convention for text processing that will not split words, and which can convey correct meaning, in successive SD1 or MSG segments.
6. The number of line items (CTT01) is the accumulation of the number of LIN segments. Hash total (CTT02) is not used in this transaction set.

Segment: **ST** **Transaction Set Header**
Position: 010
Loop:
Level: Heading
Usage: Mandatory
Max Use: 1
Purpose: To indicate the start of a transaction set and to assign a control number
Syntax Notes:
Semantic Notes: 1 The transaction set identifier (ST01) used by the translation routines of the interchange partners to select the appropriate transaction set definition (e.g., 810 selects the Invoice Transaction Set).
Comments:

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**ST01**	**143**	**Transaction Set Identifier Code** Code uniquely identifying a Transaction Set 848 X12.36 Material Safety Data Sheet	**M ID 3/3**
Must Use	**ST02**	**329**	**Transaction Set Control Number** Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set ***A unique number assigned by the originator of the transaction set, or the originator's application program.***	**M AN 4/9**

Segment: **BMS** **Beginning Segment For Material Safety Data Sheet**
Position: 020
Loop:
Level: Heading
Usage: Mandatory
Max Use: 1
Purpose: Beginning of the Material Safety Data Sheet Transaction Set, to identify the distinct type of report and to transmit key identifying numbers and dates relating to that report
Syntax Notes:
Semantic Notes:
1 BMS02 specifies date the report is effective (YYMMDD).
2 BMS04 specifies sender's report identifier.
3 BMS05 is a number indicating the chronological sequence of this revision.
4 BMS08 specifies the state or province for ultimate receipt of this report.
5 BMS09 specifies the country for ultimate receipt of this report.
Comments:
1 If BMS01 is code "05" and BMS04 is used, then BMS06, if used, must identify the previous version of this report which is being replaced.
If BMS01 is code "05" and BMS05 is used, then BMS07, if used, must identify the previous version of this report which is being replaced.
2 BMS03 specifies the language of the text information in the Material Safety Data Sheet (MSDS).

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	BMS01	353	**Transaction Set Purpose Code** Code identifying purpose of transaction set 00 Original ***Use to identify an original MSDS transaction submission.*** 01 Cancellation ***Use only to indicate the cancellation of a previously submitted MSDS (original or replacement) when the MSDS is found to be inaccurate and a new original (or replacement) MSDS has been submitted.*** 05 Replace ***Use to indicate the original submission of an MSDS which will replace an existing MSDS, whether previously submitted to DoD or not. Submission of a replacement MSDS is considered to be advisory information for the recipient and is not associated with an ongoing acquisition action. This encompasses MSDSs superseded, replaced, or revised.***	M ID 2/2
Must Use	BMS02	373	**Date** Date (YYMMDD) ***1. Cite the date on which the MSDS content is in effect.*** ***2. For MSDS request transactions, cite the date of the request.***	M DT 6/6
	BMS03	819	**Language Code** Code designating the language used in text, from a standard code list maintained by the International Standards Organization (ISO 639) ***Use to specify a language if other than English.***	O ID 2/3
	BMS04	127	**Reference Number**	O AN 1/30

			Reference number or identification number as defined for a particular Transaction Set, or as specified by the Reference Number Qualifier. ***Cite the MSDS reference number which uniquely identifies any individual MSDS in original and cancellation submissions. For replacement MSDS submissions, cite the reference number of the MSDS which is replacing the obsolete MSDS.***			
	BMS05	**691**	**Revision Number**	**O**	**N0 1/4**	
			A number which indicates the chronological sequence of revisions and updates to a ratemaking docket ***Use to identify the unique revision number associated with the MSDS reference number as assigned by the developer of the MSDS. This is the most recent version of the MSDS.***			
	BMS06	**127**	**Reference Number**	**O**	**AN 1/30**	
			Reference number or identification number as defined for a particular Transaction Set, or as specified by the Reference Number Qualifier. ***Use only in MSDS replacement submissions to identify the MSDS reference number of the MSDS being replaced.***			
	BMS07	**691**	**Revision Number**	**O**	**N0 1/4**	
			A number which indicates the chronological sequence of revisions and updates to a ratemaking docket ***Use only in MSDS replacement submissions to identify the MSDS revision number applicable to the MSDS being replaced.***			
Not Used	**BMS08**	**156**	**State or Province Code**	**O**	**ID 2/2**	
			Code (Standard State/Province) as defined by appropriate government agency			
Not Used	**BMS09**	**26**	**Country Code**	**O**	**ID 2/3**	
			Code identifying the country			

Segment: **REF** **Reference Numbers**
Position: 040
Loop:
Level: Heading
Usage: Optional (Must Use)
Max Use: >1
Purpose: To specify identifying numbers.
Syntax Notes: 1 At least one of REF02 or REF03 is required.
Semantic Notes:
Comments:
Notes: ***1. Use for the original and cancellation submissions to identify the appropriate reference number associated with the MSDS submission requirement. Use multiple repetitions of the 1/REF/040 segment as needed to identify contract number and associated release or delivery order number.***

2. The 1/REF/040 segment MUST be used once to identify the type of implementation convention being used for this transaction. Use code EZ in REF01 and cite the appropriate code in REF02.

3. Use for replacement submissions, if known, to identify the applicable reference number associated with the original submission.

Data Element Summary

	Ref. Des.	Data Element	Name		Attributes
Must Use	REF01	128	**Reference Number Qualifier** Code qualifying the Reference Number.		M ID 2/2
			2G	Amendment	
			C4	Change Number	
			Use to cite the contract modification number, as required.		
			CT	Contract Number	
			DO	Delivery Order Number	
			Use to cite the delivery order number against requirements or indefinite quantity contracts.		
			EZ	Electronic Data Interchange Agreement Number	
			Use to identify the implementation convention used for this transaction by citing the following in REF02: "848F003"		
			KS	Solicitation	
			A discreet number assigned by the purchasing activity to differentiate between different solicitations ***Use to indicate the solicitation number under which the MSDS is submitted. This is the primary method for cross reference to purchase prior to contract award.***		
			PR	Price Quote Number	
			TN	Transaction Reference Number	
			Use to cite the MSDS request number given in BMS04 of the MSDS request transaction, if applicable.		
Must Use	REF02	127	**Reference Number** Reference number or identification number as defined for a particular Transaction Set, or as specified by the Reference Number Qualifier.		X AN 1/30

REF03	**352**	**Description**	**X**	**AN 1/80**
		A free-form description to clarify the related data elements and their content		

Segment: **DTM** **Date/Time Reference**
Position: 050
Loop:
Level: Heading
Usage: Optional
Max Use: >1
Purpose: To specify pertinent dates and times
Syntax Notes: 1 At least one of DTM02 DTM03 or DTM06 is required.
2 If either DTM06 or DTM07 is present, then the other is required.
Semantic Notes:
Comments:
Notes: ***Use in original, cancellation, and replacement transactions to identify the MSDS date of preparation.***

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	DTM01	374	**Date/Time Qualifier** Code specifying type of date or time, or both date and time 042 Superseded ***Use in replacement submissions only to identify the preparation date of MSDS being replaced.*** 102 Issue ***Use in original and cancellation transactions to identify the date of preparation for the MSDS being submitted or canceled. Use in replacement submissions to identify the original date of preparation for the new MSDS.***	M ID 3/3
Must Use	DTM02	373	**Date** Date (YYMMDD)	X DT 6/6
Not Used	DTM03	337	**Time** Time expressed in 24-hour clock time as follows: HHMM, or HHMMSS, or HHMMSSD, or HHMMSSDD, where H = hours (00-23), M = minutes (00-59), S = integer seconds (00-59) and DD = decimal seconds; decimal seconds are expressed as follows: D = tenths (0-9) and DD = hundredths (00-99)	X TM 4/8
Not Used	DTM04	623	**Time Code** Code identifying the time. In accordance with International Standards Organization standard 8601, time can be specified by a + or - and an indication in hours in relation to Universal Time Coordinate (UTC) time; since + is a restricted character, + and - are substituted by P and M in the codes that follow	O ID 2/2
	DTM05	624	**Century** The first two characters in the designation of the year (CCYY)	O N0 2/2
Not Used	DTM06	1250	**Date Time Period Format Qualifier** Code indicating the date format, time format, or date and time format	X ID 2/3
Not Used	DTM07	1251	**Date Time Period** Expression of a date, a time, or range of dates, times or dates and times	X AN 1/35

Segment: **N1** **Name**
Position: 060
Loop: N1 Optional
Level: Heading
Usage: Optional
Max Use: 1
Purpose: To identify a party by type of organization, name, and code
Syntax Notes:
1 At least one of N102 or N103 is required.
2 If either N103 or N104 is present, then the other is required.
Semantic Notes:
Comments:
1 This segment, used alone, provides the most efficient method of providing organizational identification. To obtain this efficiency the "ID Code" (N104) must provide a key to the table maintained by the transaction processing party.
2 N105 and N106 further define the type of entity in N101.
Notes: ***1. Multiple iterations of the 1/N1/060 loop are permitted to identify the party(ies) associated with the development and submission of the MSDS.***

2. If possible, use only N101 and the N103/N104 combination to provide the appropriate entity and address information.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**N101**	**98**	**Entity Identifier Code** Code identifying an organizational entity, a physical location, or an individual DS Distributor ***Use as needed to identify the entity in the material chain-of-custody responsible for distributing the material and which did not alter product formulation.*** MF Manufacturer of Goods ***Use to identify the product manufacturer and entity responsible for determining the final product formulation.*** R6 Requester ***Use to identify the entity initiating the MSDS request or requirement.*** SU Supplier/Manufacturer ***Use as needed to identify the entity providing the material if other than distributor or manufacturer of goods.*** YE Third Party ***Use to identify the MSDS submitter when other than the manufacturer or party providing the material.*** ZD Party to Receive Reports The organization designated to receive reports ***Use to indicate the party to receive the MSDS if other than the requester or entity initiating the requirement (R6).***	**M ID 2/2**
	N102	**93**	**Name** Free-form name ***Use only when no coded identification for the entity is available.***	**X AN 1/35**
	N103	**66**	**Identification Code Qualifier**	**X ID 1/2**

			Code designating the system/method of code structure used for Identification Code (67) 1 D-U-N-S Number, Dun & Bradstreet 9 D-U-N-S+4, D-U-N-S Number with Four Character Suffix 10 Department of Defense Activity Address Code (DODAAC) 33 Commercial and Government Entity (CAGE) FI Federal Taxpayer's Identification Number		
	N104	**67**	**Identification Code** Code identifying a party or other code	**X**	**AN 2/20**
Not Used	**N105**	**706**	**Entity Relationship Code** Code describing entity relationship	**O**	**ID 2/2**
	N106	**98**	**Entity Identifier Code** Code identifying an organizational entity, a physical location, or an individual FR Message From ***Use as needed in conjunction with the appropriate 1/N101/060 code to identify the party originating the transaction set.*** TO Message To ***Use as needed in conjunction with the appropriate 1/N101/060 code to identify the party to receive the transaction set.***	**O**	**ID 2/2**

Segment: **N2** **Additional Name Information**
Position: 070
Loop: N1 Optional
Level: Heading
Usage: Optional
Max Use: >1
Purpose: To specify additional names or those longer than 35 characters in length
Syntax Notes:
Semantic Notes:
Comments:
Notes: ***Use only as required in conjunction with N102 to further identify the entity when the N103/N104 combination is not sufficient. For example, use to identify a specific division or office of the organization cited in N102.***

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes	
Must Use	N201	93	Name Free-form name	M	AN 1/35
	N202	93	Name Free-form name	O	AN 1/35

Segment: **N3** **Address Information**
Position: 080
Loop: N1 Optional
Level: Heading
Usage: Optional
Max Use: >1
Purpose: To specify the location of the named party
Syntax Notes:
Semantic Notes:
Comments:
Notes: ***Use only as required in conjunction with N102 to further identify the entity's address when the N103/N104 combination is not sufficient.***

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	N301	166	**Address Information** Address information	M AN 1/35
	N302	166	**Address Information** Address information	O AN 1/35

Segment: **N4** **Geographic Location**
Position: 090
Loop: N1 Optional
Level: Heading
Usage: Optional
Max Use: 1
Purpose: To specify the geographic place of the named party
Syntax Notes: **1** If N406 is present, then N405 is required.
Semantic Notes:
Comments: **1** A combination of either N401 through N404, or N405 and N406 may be adequate to specify a location.
2 N402 is required only if city name (N401) is in the USA or Canada.
Notes: ***Use only as required in coujunction with N102 to further ideutify the eutity location when the N103/N104 combination is not sufficient.***

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes	
	N401	**19**	**City Name** Free-form text for city name	**O**	**AN 2/30**
	N402	**156**	**State or Province Code** Code (Standard State/Province) as defined by appropriate government agency	**O**	**ID 2/2**
	N403	**116**	**Postal Code** Code defining international postal zone code excluding punctuation and blanks (zip code for United States)	**O**	**ID 3/11**
	N404	**26**	**Country Code** Code identifying the country ***Use only iu transactions identifyiug the location of an entity as a country outside the fifty Uuited States or its territories or possessions.***	**O**	**ID 2/3**
Not Used	**N405**	**309**	**Location Qualifier** Code identifying type of location	**X**	**ID 1/2**
Not Used	**N406**	**310**	**Location Identifier** Code which identifies a specific location	**O**	**AN 1/30**

Segment: **REF** **Reference Numbers**
Position: 100
Loop: N1 Optional
Level: Heading
Usage: Optional
Max Use: >1
Purpose: To specify identifying numbers.
Syntax Notes: 1 At least one of REF02 or REF03 is required.
Semantic Notes:
Comments:
Notes: ***Use as needed in all transactions to further identify the entity cited in N101.***

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**REF01**	**128**	**Reference Number Qualifier** Code qualifying the Reference Number. W7 Commercial and Government Entity (CAGE) Code Code that identifies a commercial contractor authorized to do business with the U.S. Government ***Use to indicate the CAGE code of the organization (other than government) cited in N101 if N103 is other than code 33.***	**M ID 2/2**
Must Use	**REF02**	**127**	**Reference Number** Reference number or identification number as defined for a particular Transaction Set, or as specified by the Reference Number Qualifier.	**X AN 1/30**
Not Used	**REF03**	**352**	**Description** A free-form description to clarify the related data elements and their content	**X AN 1/80**

Segment: **PER** **Administrative Communications Contact**
Position: 110
Loop: N1 Optional
Level: Heading
Usage: Optional
Max Use: >1
Purpose: To identify a person or office to whom administrative communications should be directed
Syntax Notes: 1 If either PER03 or PER04 is present, then the other is required.
2 If either PER05 or PER06 is present, then the other is required.
3 If either PER07 or PER08 is present, then the other is required.
Semantic Notes:
Comments:
Notes: ***1. Suppliers must, as a minimum, identify the emergency contact and telephone number, and provide an information contact and telephone number.***

2. Use PER05/PER06 and PER07/PER08 to provide a second and third, respectively, contact number associated with the named contact.

3. Repeat the use of 1/PER/110 as needed to provide all applicable points of contact for each entity identified by an iteration of the 1/N1/060 loop.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**PER01**	**366**	**Contact Function Code**	**M ID 2/2**
			Code identifying the major duty or responsibility of the person or group named	
			AT Material Safety Data Sheet Contact	
			EM Emergency Contact	
			Use to identify point of contact for emergency situations. Cite the office or third party representative (e.g., CHEMTREC) in PER02.	
			HM Hazardous Material Contact	
			Use as needed to identify general point of contact from which information regarding the hazards of the material may be obtained.	
			TR Technical Marketing Representative	
			Use as needed to identify the point of contact for general product information.	
	PER02	**93**	**Name**	**O AN 1/35**
			Free-form name	
			Use to indicate the name of the person or office. Last name first, followed by first name is preferred. If the whole name exceeds 35 characters, use the initial of the first name.	
	PER03	**365**	**Communication Number Qualifier**	**X ID 2/2**
			Code identifying the type of communication number	
			When citing a telephone or facsimile number, do not include dashes.	
			EM Electronic Mail	
			FX Facsimile	
			IT International Telephone	
			Include the country code.	
			TE Telephone	
	PER04	**364**	**Communication Number**	**X AN 1/80**

Complete communications number including country or area code when applicable

PER05 **365** **Communication Number Qualifier** **X** **ID 2/2**

Code identifying the type of communication number

EM	Electronic Mail
EX	Telephone Extension
	Use only if PER03 is used citing either code TE or IT.
FX	Facsimile
IT	International Telephone
	Include the country code.
TE	Telephone

PER06 **364** **Communication Number** **X** **AN 1/80**

Complete communications number including country or area code when applicable

PER07 **365** **Communication Number Qualifier** **X** **ID 2/2**

Code identifying the type of communication number

EM	Electronic Mail
EX	Telephone Extension
	Use only if PER05 is used citing either code TE or IT.
FX	Facsimile
IT	International Telephone
	Include the country code.
TE	Telephone

PER08 **364** **Communication Number** **X** **AN 1/80**

Complete communications number including country or area code when applicable

PER09 **443** **Contact Inquiry Reference** **O** **AN 1/20**

Additional reference number or description to clarify a contact number

Use as needed to further identify the point of contact or communication method. For example, use to cite "24-hours" or "Mon-Fri" as needed.

Segment: **LIN** **Item Identification**
Position: 010
Loop: LIN Mandatory
Level: Detail
Usage: Mandatory
Max Use: 1
Purpose: To specify basic item identification data
Syntax Notes:
1 If either LIN04 or LIN05 is present, then the other is required.
2 If either LIN06 or LIN07 is present, then the other is required.
3 If either LIN08 or LIN09 is present, then the other is required.
4 If either LIN10 or LIN11 is present, then the other is required.
5 If either LIN12 or LIN13 is present, then the other is required.
6 If either LIN14 or LIN15 is present, then the other is required.
7 If either LIN16 or LIN17 is present, then the other is required.
8 If either LIN18 or LIN19 is present, then the other is required.
9 If either LIN20 or LIN21 is present, then the other is required.
10 If either LIN22 or LIN23 is present, then the other is required.
11 If either LIN24 or LIN25 is present, then the other is required.
12 If either LIN26 or LIN27 is present, then the other is required.
13 If either LIN28 or LIN29 is present, then the other is required.
14 If either LIN30 or LIN31 is present, then the other is required.
Semantic Notes:
1 LIN01 is the line item identification
Comments:
1 See the Data Dictionary for a complete list of ID's.
2 LIN02 through LIN31 provide for fifteen (15) different product/service ID's for each item. For Example: Case, Color, Drawing No., UPC No., ISBN No., Model No., SKU.

Notes:

1. Use only 2/LIN/010 in cancellation transactions to identify the material associated with the canceled MSDS.

2. Use all necessary segments in the 2/LIN/010 loop in original and replacement transactions to identify the specific MSDS content.

3. Use data element 235/234 pairs to identify data pertinent to the transaction. Unless otherwise specified, the multiple codes listed for a single qualifier data element identify the range of possible data requirements. When needed, use the next available combination of data element 235/234 pairs to provide the necessary data.

4. The most desirable means of item identification is manufacturer's part number and CAGE Code. However, MSDS submitters may use other authorized coding alternatives to identify the material for which the MSDS is prepared. This information will be used in conjunction with an MSDS reference number, MSDS revision number, and MSDS effective date to uniquely identify any individual MSDS.

5. Manufacturers should use one 235/234 pair to identify the product by manufacturer's part number (Code MG) and immediately follow with another 235/234 pair identifying the associated manufacturer CAGE Code (Code ZB).

6. Distributors and repackagers should use one 235/234 pair to identify the product by vendor's part number (Code VP) and immediately follow with a 235/234 pair identifying the associated distributor or repackagers CAGE Code (Code ZB). Distributors and repackagers should then use two additional 235/234 pairs to identify the product manufacturer's part number (Code MG) and CAGE Code (Code ZB), if known.

7. Suppliers should identify the product by manufacturer's part number (Code MG) in

one 235/234 pair and immediately follow with a 235/234 pair identifying the associated manufacturer CAGE Code (Code ZB).

8. All submitters shall provide the National Stock Number (NSN), if known, but NOT as a substitute for part number and CAGE Code. The use of code FS may be repeated in successive 235/234 pairs to identify multiple NSN's corresponding to the product.

9. Provide other identifying information, as required, to adequately identify the material for which the MSDS applies.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
	LIN01	**350**	**Assigned Identification** Alphanumeric characters assigned for differentiation within a transaction set ***Use to identify the Contract Line Item Number (CLIN), Sub Contract Line Item Number (SUBCLIN), or Exhibit Line Item Number (ELIN), if one is assigned.***	**O AN 1/11**
Must Use	**LIN02**	**235**	**Product/Service ID Qualifier** Code identifying the type/source of the descriptive number used in Product/Service ID (234) ***Use one of the following codes in the LIN02/LIN03 data element pair to identify the material. Use any code in subsequent data element pairs to further identify the material as needed.***	**M ID 2/2**

A2	Department of Defense Identification Code (DoDIC) Qualifies a code that uniquely identifies a type of explosive or ammunition
BN	Bar-Coded Serial Number
BP	Buyer's Part Number
CN	Commodity Name
CO	Chemical Abstract Service (CAS) Registry Number
FS	National Stock Number
IN	Buyer's Item Number
LT	Lot Number
MG	Manufacturer's Part Number ***Use to identify a manufacturer or supplier's part number.***
UK	U.P.C./EAN Shipping Container Code (1-2-5-5-1) A 14-digit code that uniquely identifies the manufacturer's shipping unit, including the packaging indicator and check digit; the first digit is the packaging indicator, the next two digits are the number system characters, the next five digits are the manufacturer ID number, the second five digits are the item code, and the final digit is the check digit
UP	U.P.C. Consumer Package Code (1-5-5-1)
VN	Vendor's (Seller's) Item Number
VP	Vendor's (Seller's) Part Number ***Use to identify a distributor or repackager's part number.***
VX	Vendor's Specification Number
ZB	Commercial and Government Entity (CAGE) Code

			A code that identifies a commercial contrator authorized to do business with the U.S. government ***Use in conjunction with code MG (or VP) to identify the manufacturer (or distributor).***			
Must Use	**LIN03**	**234**	**Product/Service ID** Identifying number for a product or service	**M**	**AN 1/40**
	LIN04	**235**	**Product/Service ID Qualifier** Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.	**X**	**ID 2/2**
	LIN05	**234**	**Product/Service ID** Identifying number for a product or service	**X**	**AN 1/40**
	LIN06	**235**	**Product/Service ID Qualifier** Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.	**X**	**ID 2/2**
	LIN07	**234**	**Product/Service ID** Identifying number for a product or service	**X**	**AN 1/40**
	LIN08	**235**	**Product/Service ID Qualifier** Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.	**X**	**ID 2/2**
	LIN09	**234**	**Product/Service ID** Identifying number for a product or service	**X**	**AN 1/40**
	LIN10	**235**	**Product/Service ID Qualifier** Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.	**X**	**ID 2/2**
	LIN11	**234**	**Product/Service ID** Identifying number for a product or service	**X**	**AN 1/40**
	LIN12	**235**	**Product/Service ID Qualifier** Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.	**X**	**ID 2/2**
	LIN13	**234**	**Product/Service ID** Identifying number for a product or service	**X**	**AN 1/40**
	LIN14	**235**	**Product/Service ID Qualifier** Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.	**X**	**ID 2/2**
	LIN15	**234**	**Product/Service ID** Identifying number for a product or service	**X**	**AN 1/40**
	LIN16	**235**	**Product/Service ID Qualifier** Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.	**X**	**ID 2/2**
	LIN17	**234**	**Product/Service ID** Identifying number for a product or service	**X**	**AN 1/40**
	LIN18	**235**	**Product/Service ID Qualifier** Code identifying the type/source of the descriptive number used in	**X**	**ID 2/2**

		Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.		
LIN19	**234**	**Product/Service ID** Identifying number for a product or service	**X**	**AN 1/40**
LIN20	**235**	**Product/Service ID Qualifier** Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.	**X**	**ID 2/2**
LIN21	**234**	**Product/Service ID** Identifying number for a product or service	**X**	**AN 1/40**
LIN22	**235**	**Product/Service ID Qualifier** Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.	**X**	**ID 2/2**
LIN23	**234**	**Product/Service ID** Identifying number for a product or service	**X**	**AN 1/40**
LIN24	**235**	**Product/Service ID Qualifier** Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.	**X**	**ID 2/2**
LIN25	**234**	**Product/Service ID** Identifying number for a product or service	**X**	**AN 1/40**
LIN26	**235**	**Product/Service ID Qualifier** Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.	**X**	**ID 2/2**
LIN27	**234**	**Product/Service ID** Identifying number for a product or service	**X**	**AN 1/40**
LIN28	**235**	**Product/Service ID Qualifier** Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.	**X**	**ID 2/2**
LIN29	**234**	**Product/Service ID** Identifying number for a product or service	**X**	**AN 1/40**
LIN30	**235**	**Product/Service ID Qualifier** Code identifying the type/source of the descriptive number used in Product/Service ID (234) Refer to 003050 Data Element Dictionary for acceptable code values.	**X**	**ID 2/2**
LIN31	**234**	**Product/Service ID** Identifying number for a product or service	**X**	**AN 1/40**

Segment: **PID** **Product/Item Description**
Position: 020
Loop: LIN Mandatory
Level: Detail
Usage: Optional
Max Use: >1
Purpose: To describe a product or process in coded or free-form format
Syntax Notes:
1 If PID04 is present, then PID03 is required.
2 At least one of PID04 or PID05 is required.
3 If PID07 is present, then PID03 is required.
4 If PID08 is present, then PID03 is required.
Semantic Notes:
1 Use PID03 to indicate the organization that publishes the code list being referred to.
2 PID04 should be used for industry-specific product description codes.
3 PID08 describes the physical characteristics of the product identified in PID04. A ``Y" indicates that the specified attribute applies to this item. A ``N" indicates it does not apply. Any other value is indeterminate.
Comments:
1 If PID01 = ``F", then PID05 is used. If PID01 = ``S", then PID04 is used. If PID01 = ``X", then both PID04 and PID05 are used.
2 Use PID06 when necessary to refer to the product surface or layer being described in the segment.
3 PID07 specifies the individual code list of the agency specified in PID03.
Notes: ***Use this segment only if the product applicable to the MSDS cannot be adequately identified by a code value cited in the LIN segment.***

Data Element Summary

	Ref. Des.	Data Element	Name		Attributes
Must Use	PID01	349	**Item Description Type**		M ID 1/1
			Code indicating the format of a description		
			F	Free-form	
			S	Structured (From Industry Code List)	
			X	Semi-structured (Code and Text)	
Must Use	PID02	750	**Product/Process Characteristic Code**		O ID 2/3
			Code identifying the general class of a product or process characteristic		
			08	Product	
				Use to indicate a complete set or kit. When used, provide a general description, including the intended use, of the set or kit in PID05.	
			09	Sub-product	
				Use to indicate a component of a kit and provide a description of the component in PID05.	
			80	MILSPEC (Military Specification)	
				Use to identify a Military Specification (MILSPEC) or Military Standard (MILSTD).	
			81	FEDSPEC (Federal Specification)	
			82	FED-STD (Federal Standard)	
			83	CID (Commercial Item Description)	
			84	Special Specification	
				Use in conjunction with PID04 to identify an industry specification.	
			CCN	Common Chemical Name	
			CHF	Chemical Family	

			SYN	Synonym ***Use to indicate another name under which the product is sold.***		
			TRN	Trade Name ***Use to indicate the brand name under which the product is sold.***		
	PID03	**559**	**Agency Qualifier Code** Code identifying the agency assigning the code values ***Use any code.*** Refer to 003050 Data Element Dictionary for acceptable code values.		**X**	**ID 2/2**
	PID04	**751**	**Product Description Code** A code from an industry code list which provides specific data about a product characteristic		**X**	**AN 1/12**
	PID05	**352**	**Description** A free-form description to clarify the related data elements and their content ***Use to identify, in free form text, the product applicable to the MSDS.***		**X**	**AN 1/80**
Not Used	**PID06**	**752**	**Surface/Layer/Position Code** Code indicating the product surface, layer or position that is being described		**O**	**ID 2/2**
Not Used	**PID07**	**822**	**Source Subqualifier** A reference that indicates the table or text maintained by the Source Qualifier		**O**	**AN 1/15**
Not Used	**PID08**	**1073**	**Yes/No Condition or Response Code** Code indicating a Yes or No condition or response		**O**	**ID 1/1**

Segment: **MSS** **Material Safety Data Sheet Section Information**
Position: 030
Loop: MSS Optional
Level: Detail
Usage: Optional
Max Use: 1
Purpose: To identify the report section
Syntax Notes:
1 At least one of MSS01 MSS02 or MSS06 is required.
2 Only one of MSS01 or MSS06 may be present.
Semantic Notes:
1 MSS02 is a text description of the report section.
2 MSS03 indicates the state or province issuing the regulations that determine what is reported in this section of the Material Safety Data Sheet (MSDS).
3 MSS04 identifies the country issuing the regulations that determine what is reported in this section.
Comments:
1 MSS05 indicates whether any data in this report section has changed since the last revision of this report.
2 MSS07 indicates that the safety characteristics or hazard name is included in the name of the MSDS section or subsection.
Notes:
1. Use the 2/MSS/030 loop only in original and replacement submissions to identify the applicable ANSI Z400 section headings and the associated MSDS data. Repeat the loop for each section of the ANSI Z400 standard. Sections 1-10 are required by the Occupational Safety and Health Administration's Hazard Communication Standard. Sections 11-16 include international requirements and may not always apply. For any section where information is not provided, not applicable, or not known, state the appropriate case (e.g., not applicable) in the appropriate occurrence of 2/MSG/050.

2. Cite the applicable section number in MSS06 and the heading code value in MSS07.

3. HAZCOM Warning Label information is identified in Section 16 (Other Information) as a discrete iteration of the 2/MSS/030 loop. Separate this information from any additional Other Information to be carried in Section 16 by using code "LAB" in MSS07.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Not Used	MSS01	820	**Report Section Name Code** Code identifying the name of the section of the report	X ID 2/2
Not Used	MSS02	352	**Description** A free-form description to clarify the related data elements and their content	X AN 1/80
Not Used	MSS03	156	**State or Province Code** Code (Standard State/Province) as defined by appropriate government agency	O ID 2/2
Not Used	MSS04	26	**Country Code** Code identifying the country	O ID 2/3
Not Used	MSS05	259	**Change Type Code** Code indicating change type	O ID 1/1
Must Use	MSS06	1472	**Report Section Number** Number identifying a specified section or subsection of a report ***Use in conjunction with MSS07 to identify ANSI Z400 section heading numbers. As an example, for section 3 titled "Hazard Identification", cited "300" to indicate section number (3.0).***	X N2 3/4
	MSS07	821	**Safety Characteristic/Hazard Code**	O ID 3/3

Code indicating precautionary measures, means of treatment and hazard information and warnings

Use in conjunction with MSS06 to identify the ANSI Z400 section heading.

CI2	Chemical Product and Company Information
	Use to identify section heading for information contained in section 1.
CO2	Composition or Information on Ingredients
	Use to identify section heading for information contained in section 2.
DI2	Disposal Considerations
	Use to identify section heading for information contained in section 13.
EN2	Ecological Information
	Use to identify section heading for information contained in section 12.
EP2	Exposure Controls or Personal Protection
	Use to identify section heading for information contained in section 8.
FA2	First Aid Measures
	Use to identify section heading for information contained in section 4.
FE2	Fire Fighting Measures
	Use to identify section heading for information contained in section 5.
HH2	Hazards Identification
	Use to identify section heading for information contained in section 3.
IA2	Other Information
	Use to identify section heading for information in section 16.
LAB	Label Text
	Use to identify warning label information to be contained in section 16.
PD2	Physical and Chemical Properties
	Use to identify section heading for information contained in section 9.
RE2	Stability and Reactivity Information
	Use to identify section heading for information contained in section 10.
RG2	Regulatory Information
	Use to identify section heading for information contained in section 15.
SH2	Transport Information
	Use to identify section heading for information contained in section 14.
SL2	Accidental Release Measures
	Use to identify section heading for information contained in section 6.
ST2	Handling and Storage
	Use to identify section heading for information contained in section 7.
TX2	Toxocological Information

Use to identify section heading for information contained in section 11.

Segment: **MSG** **Message Text**
Position: 050
Loop: MSS Optional
Level: Detail
Usage: Optional
Max Use: >1
Purpose: To provide a free form format that would allow the transmission of text information.
Syntax Notes:
Semantic Notes:
Comments: 1 MSG02 is not related to the specific characteristics of a printer, but identifies top of page, advance a line, etc.
Notes: ***1. Text content should follow the recommendations prescribed in the ANSI Z400 draft standard. Specifically, use those common phrases and definitions whenever possible to maximize clarity.***

2. Federal regulation requires a Hazard Communication Warning label to be submitted in conjunction with the submission of an MSDS. This data set is conveyed in Section 16 of the ANSI Z400 format using the subsection heading "HAZCOM Communication Warning Label." Data required include:

- ***Identity of hazardous chemical(s);***
- ***Appropriate hazard warnings to include of target organ; and***
- ***Name and address of chemical manufacturer, importer or responsible party.***

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	MSG01	933	**Free-Form Message Text** Free-form message text	M AN 1/264
	MSG02	934	**Printer Carriage Control Code** A field to be used for the control of the line feed of the receiving printer ***Use as needed to accurately portray data.***	O ID 2/2

AT	Advanced Three Lines Before Print
DS	Advance two lines before print
LC	Line Continuation
NP	Advance to next page before print
NS	No advance before print
SS	Advance to new line before print

Segment: **SE** **Transaction Set Trailer**
Position: 020
Loop:
Level: Summary
Usage: Mandatory
Max Use: 1
Purpose: To indicate the end of the transaction set and provide the count of the transmitted segments (including the beginning (ST) and ending (SE) segments).
Syntax Notes:
Semantic Notes:
Comments: **1** SE is the last segment of each transaction set.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
Must Use	**SE01**	**96**	**Number of Included Segments** Total number of segments included in a transaction set including ST and SE segments	**M N0 1/10**
Must Use	**SE02**	**329**	**Transaction Set Control Number** Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set ***Cite the same number as the one cited in ST02.***	**M AN 4/9**

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