Toxic Release Inventory Basic Data File Format Documentation v10

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TRI Basic Data File Format - Introduction

The *TRI Basic Data Files* are provided in an easy-to-use format that contains the data elements most frequently requested by TRI data users. The Toxics Release Inventory (TRI) Program has found that data users are most interested in the quantity data reported by TRI facilities, including the quantities of toxic chemicals released on-site, the quantities transferred off-site and summary data concerning releases, recycling, energy recovery and treatment as they appear in the Pollution Prevention portion of the TRI Reporting Form R (one of the two reporting forms EPA uses to collect TRI data from facilities).

The *TRI Basic Data Files* were created in response to feedback from users requesting the state and national datasets. In the past, users would frequently contact the TRI Program to request *all* of the TRI data. Typically, however, users were primarily interested in the quantity information found in TRI, such as on-site releases or off-site transfers. Users also wanted these data elements for all TRI reporting years, and indicated that all of this information wasn't easily available in the online TRI query tools.

The TRI Program developed the *TRI Basic Data Files* to provide easier access to TRI data. This document defines and describes the data file format of these files. It lists the record layout and specifically defines each field in that layout. Finally, it gives users instructions on how to load these data files into two common desktop products, Microsoft (MS) Excel and Access.

Please note that this file format does not contain data from non-quantitative areas of the Form R or Form A, such as "Chemical Activities and Uses", "Treatment Methods and Efficiency", "Recycling Processes" and "Energy Recover Processes." To see the data from these and other non-quantitative sections of the Form R and A, refer to the "TRI Basic Plus Data Files."

File Format Information

The general categories that users are interested in and that are represented in this file are as follows:

- Facility Name, Address, Latitude & Longitude Coordinates, and SIC or NAICS codes
- Chemical identification and classification information
- On-site Release quantities
- Publicly Owned Treatment Works (POTW) transfer quantities
- Off-site Transfer quantities for release/disposal and further waste management
- Summary Pollution Prevention quantities (Section 8 of the Form R)

The file contains approximately 100 data fields. The data is simple ASCII text that is comma-delimited. This format loads easily into many desktop products such as spreadsheets and database software.

The record layout for the file appears in the next section. There are seven columns in the layout format. The first column (identified by the column heading '#') is a sequential field number identifier. The second column, "Field" is the name of the data field as it will appear in the data file. Many of the field names begin with a section reference, such as "5.1 - Fugitive Air". The "5 .1" represents the section of the Form R where the data came from. Many users find the data fields easier to use when they are prefaced with the section number.

The third and fourth columns, “Maximum Length” and “Data Type”, specify the maximum length and the data type of the field. The “Maximum Length” column also indicates the format of numeric data. Comma notation is used for numbers that may contain decimals. For example, a “Maximum Length” value of “22,7” indicates that the number can be 22 digits long with 7 digits to the right of the decimal point. There are two possible values for the “Data Type”. They are ‘C’ for Character/Text data and ‘N’ for numeric data.

The fifth and sixth columns under the “Form R Reference” heading indicate the “Part” and “Section” of the Form R or A where the data originates from. Refer to the “Toxic Chemical Release Reporting Forms and Instructions” at http://www.epa.gov/tri/report/index.htm for more information on the Form R and Form A for additional information on each data field in this file.

The “Definition” column gives a description of each data element and provides notes about its origin and use. There are several data fields that represent totals in the data file. The “Definition” column tells which data fields are added together to obtain the totals.

This file format can be loaded easily into several common desktop products, including Microsoft Excel and Access. Appendices B and C provide instructions for loading these files into those two products.

File Content Types

There are three different types of *TRI Basic Data Files*.

The first type, known as the "State Data File", will only contain data for one state, district or US territory for each reporting year. For instance, one "State File" might be all the data for the state of Alabama for reporting year 2010.

The second type, known as the "National Data File", will contain all the TRI data for the United States. This includes data for all 50 states and the six US districts and territories (i.e. American Samoa, District of Columbia, Guam, Northern Mariana Islands, Puerto Rico and the Virgin Islands).

The third type, known as the "Federal Facility Data File", will contain data for all government owned and operated federal sites.

File Naming Conventions and Version Numbers

Each file type will have a slightly different naming convention. However, all file names will follow this standard pattern:

File Name = "TRI" + Reporting Year + File Content

Where the text string "TRI" identifies the file as TRI data. The "Reporting Year" indicates which reporting the file represents. The "File Content" will indicate which of the three file types (Federal Facility, National or 56 States) the file is. It will be either…

- A State Abbreviation … for a State Data File
- The word "US" … for a National Data File
- The word "FED" … for a Federal Facility Data File

Here are some examples and explanations of each file type:

State File:

TRI_2010_AL.csv

The file name above, "TRI_2010_AL.csv" is a "State File" type. It contains the facility and chemical identification as well as quantity data for all chemicals reported by facilities in Alabama (AL) for reporting year 2010.

National File:

TRI_2000_US.csv

The file name above, “TRI_2000_US.csv" is a “National File” type. It contains the facility and chemical identification as well as quantity data for all chemicals reported by all facilities in reporting year 2010

Federal Facility File:

TRI_2005_FED.csv

The file name above, “TRI_2005_FED.csv" is a “Federal Facility File” type. It contains the facility and chemical identification as well as quantity data for all chemicals reported by All Federal Facilities in reporting year 2005.

File Usage – Limiting Factors

Appendices B and C describe the steps for loading the *TRI Basic Data Files* into Microsoft Excel and Access respectively. Note that for versions of Microsoft Excel prior to and including Version 2003 (found in Microsoft Office 2003) there is a limitation of 65,535 rows that can be loaded into a worksheet. Because of this limitation, users will not be able to load the “National Files” containing 85,000 or more records into these versions of Excel. However, the limit on the 2010 version of Excel is 1,048,576. So, users of that version of Excel will be able to load the National Files as well as the other two file types without a problem.

Microsoft Access, a desktop database tool, does not have a limit on the number of records that can be loaded into a table. Check the limitations of any other tool to be sure that the TRI Basic Data Files can be loaded in full.

Zeroes in the Data

The *TRI Basic Data Files* were created to be loaded into different tools such as spreadsheets, databases and statistical applications. Some of those tools require that numeric data be populated with a number (and not a blank) in order for the tool to work correctly. For instance, to total a column in many spreadsheet applications, all rows in that column must contain a number and not be blank.

In light of this, zeroes have been input into the *TRI Basic Data Files* in places where numeric data was blank. There are three instances where this normally occurs. First, facilities can file either a Form R or a Form A when reporting to TRI. The Form A is a short form that is used when chemical releases and other waste management quantities are below certain thresholds. It only requires that facility enter its identifying information and the identity of the chemical it is releasing or otherwise managing as waste. It does not require the facility to enter any actual quantity data. For chemicals submitted on the Form A, all the quantity data is represented as zeroes. See the TRI Reporting Forms and Instructions at http://www.epa.gov/tri/report/index.htm for more information on the Form A and reporting thresholds.

The second case where zeroes have been substituted for blanks occurs when facilities report "NA" or "Not Applicable" for a quantity on the Form R. Reporting "NA" means that the release or waste management quantity is not possible for that facility. For example, if a facility is not located near a water body, it will not have the ability to release any of the chemical to water. Therefore, in section 5.3 of the form R where facilities are asked to enter their on-site water releases, the facility would enter "NA" because the release is not possible. The TRI Reporting Forms and Instructions contain more information on the use of NA in TRI reporting.

The third case where zeroes have been substituted for blanks occurs when facilities do not respond to quantity questions on the form R and leave them blank. This occurs most often with the submission of paper forms. Data submitted via the electronic TRI reporting applications (i.e., *TRI-ME desktop* and *TRI-MEweb*) do not allow for blanks in quantity data reporting. They require the submitter to enter a number or indicate "NA".

Other Online Methods for Accessing TRI Data

In addition to downloadable data files, users can also access and query TRI data via multiple online tools and applications, including TRI Explorer, Envirofacts, and TRI.NET. These can be found at http://www.epa.gov/tri/tridata/index.

Record Layout

Field Documentation for the "Basic Data" File

#	Field	Maximum Length	Data Type	Form R Reference		Definition
				Part	Section	
1	Year	4	C	I	1	The Reporting Year - Year the chemical was released or waste managed
2	TRI Facility ID	15	C	I	4.1	The TRI Facility Identification Number assigned by EPA/TRI
3	Facility Name	62	C	I	4.1	Facility Name
4	Street Address	62	C	I	4.1	Street Address where facility is located
5	City	28	C	I	4.1	City Name where facility is located
6	County	25	C	I	4.1	County Name where facility is located
7	ST	2	C	I	4.1	State Abbreviation where the facility is located
8	ZIP	9	C	I	4.1	ZIP code where facility is located. Either 5 or 9 characters. No hyphens.
9	Latitude	9,6	N	None	None	Facility Latitude represented as decimal data
10	Longitude	10,6	N	None	None	Facility Longitude represented as decimal data
11	Primary SIC	4	C	I	4.5	Primary Standard Industrial Code (SIC) Code that represents the Facility's primary Business activity. SIC codes were discontinued in 2006 when NAICS codes became the new business activity indicator for TRI.
12	SIC 2	4	C	I	4.5	Supplemental SIC code representing other business activities of the facility.
13	SIC 3	4	C	I	4.5	Supplemental SIC code representing other business activities of the facility.
14	SIC 4	4	C	I	4.5	Supplemental SIC code representing other business activities of the facility.
15	SIC 5	4	C	I	4.5	Supplemental SIC code representing other business activities of the facility.
16	SIC 6	4	C	I	4.5	Supplemental SIC code representing other business activities of the facility.
17	Primary NAICS	6	C	I	4.5	Primary North American Industry Code System (NAIC) code that represents the Facility's primary Business activity. NAICS codes were first reported in 2006. For years prior to 2006, NAICS codes have been assigned.
18	NAICS 2	6	C	I	4.5	Supplemental NAICS code representing other business activities of the facility
19	NAICS 3	6	C	I	4.5	Supplemental NAICS code representing other business activities of the facility
20	NAICS 4	6	C	I	4.5	Supplemental NAICS code representing other business activities of the facility

Field Documentation for the "Basic Data" File

#	Field	Maximum Length	Data Type	Form R Reference		Definition
				Part	Section	
21	NAICS 5	6	C	I	4.5	Supplemental NAICS code representing other business activities of the facility
22	NAICS 6	6	C	I	4.5	Supplemental NAICS code representing other business activities of the facility
23	Doc_Ctrl_Num	13	C	None	None	The Document Control Number is a unique ID that is assigned to each form.
24	Chemical	70	C	II	1.2	Name of Chemical
25	CAS # / Compound ID	9	C	II	1.1	The Chemical Abstract Service Number of the chemical or chemical compound category
26	Clean Air Act Chemical	3	C	None	None	Indication if the chemical is a Clean Air Act Chemical (Yes or No)
27	Classification	6	C	None	None	Classification of the chemical. Values are as follows: TRI - Standard TRI Chemical PBT - Persistent Bioaccumulatvie Toxic Dioxin - Dioxin or Dioxin-like Compound
28	Metal	3	C	None	None	Indication if the chemical is a metal (Yes or No)
29	Metal Category	1	C	None	None	Category of Metal. Values are either 1, 2, 3, or 4 for metals. See Appendix A for definitions and lists of Chemicals that belong to each category
30	Carcinogen	3	C	None	None	Indication if the chemical is a carcinogen (Yes or No)
31	Form Type	1	C	None		The form the data was submitted on. Values are: A – Form A R – Form R
32	Unit of Measure	6	C	None	None	The units of measure the chemical is displayed in (Grams or Pounds)
33	5.1 - Fugitive Air	22,7	N	II	5.1	On-site Fugitive Air Releases
34	5.2 - Stack Air	22,7	N	II	5.2	On-site Stack Air Releases
35	5.3 - Water	22,7	N	II	5.3	On-site Water Releases
36	5.4.1 - Underground Class I	22,7	N	II	5.4.1	On-site Underground Injection Releases to Class I Wells
37	5.4.2 - Underground Class II-V	22,7	N	II	5.4.2	On-site Underground Injection Releases to Class II-V Wells
38	5.5.1A - RCRA C Landfills	22,7	N	II	5.5.1A	On-site RCRA C Landfills Releases
39	5.5.1B - Other Landfills	22,7	N	II	5.5.1B	On-site Other Landfills Releases
40	5.5.2 - Land Treatment	22,7	N	II	5.5.2	On-site Land Treatment Releases

Field Documentation for the "Basic Data" File

#	Field	Maximum Length	Data Type	Form R Reference		Definition
				Part	Section	
41	5.5.3 - Surface Impoundment	22,7	N	II	5.5.3	On-site Surface Impoundment. In reporting years prior to 2003, there was no distinction between RCRA and Other Surface impoundments. For those years, this was the only total quantity of on-site surface impoundment reported. This field will contain mostly zeroes for years 2003 and after. To obtain total Surface Impoundment for any year, add fields 41, 42 and 43 together.
42	5.5.3A - RCRA Surface Impoundment	22,7	N	II	5.5.3A	On-site RCRA Surface Impoundment Releases. This sub category of surface impoundment was created in 2003. Prior to 2003, all on-site surface impoundment was reported in variable #41, “Surface Impoundment”. This field will contain mostly zeroes for years prior to 2003. To obtain total Surface Impoundment for any year, add fields 41, 42 and 43 together.
43	5.5.3B - Other Surface Impoundment	22,7	N	II	5.5.3B	On-site NON-RCRA/Other Surface Impoundment Releases. This sub category of surface impoundment was created in 2003. Prior to 2003, all on-site surface impoundment was reported in variable #41, “Surface Impoundment”. This field will contain mostly zeroes for years prior to 2003. To obtain total Surface Impoundment for any year, add fields 41, 42 and 43 together.
44	5.5.4 - Other Disposal	22,7	N	II	5.5.4	On-site Other Disposal Releases
45	On-site Release Total	22,7	N	II		Total Releases On-site for a chemical at a facility. This is a summation of all releases in section 5 (fields 33 through 44).
46	6.1 - POTW - Metals and Metal Compounds	22,7	N	II	6.1	If a chemical is a metal (or metal compound) the amount of transfer to a POTW will appear under this data element. Metals and Metal Compounds can not be treated by most POTWs. Therefore, when a metal is transferred to a POTW, TRI considers it an Off-site Release. It will be added to the Off-site Release total.
47	6.1 - POTW - Non-Metals	22,7	N	II	6.1	If a chemical is not a metal, its POTW release amount is listed here. This amount will not be added toward the off-site release total.
48	6.1 - POTW - Total Transfers	22,7	N	II	6.1	This amount is the total transfers to a POTW of a chemical. This amount will match either 6.1 POTW - Metals and Metal Compounds or 6.1 POTW - Non-Metals
49	6.2 - M10	22,7	N	II	6.2	Off-site Storage
50	6.2 - M41	22,7	N	II	6.2	Off-site Solidification/Stabilization for Metals and Metal Compounds Only

Field Documentation for the "Basic Data" File

#	Field	Maximum Length	Data Type	Form R Reference		Definition
				Part	Section	
51	6.2 - M62	22,7	N	II	6.2	Off-site Wastewater Treatment (Excluding POTWs) for Metals and Metal Compounds Only
52	6.2 - M71	22,7	N	II	6.2	Off-site Underground Injection. There was no distinction between off-site underground injections into class I wells and class II-V wells prior to 2003. For those years, this was the only quantity for off-site underground injection. In 2003, two sub categories were added to distinguish between underground injections to class I wells and class II-V wells. This field will contain mostly zeroes for years 2003 and after. To obtain total off-site underground injection for any year, add fields 52, 53 and 54 together.
53	6.2 - M81	22,7	N	II	6.2	Off-site Underground Injection to Class I Wells. This sub category of off-site underground injection was created in 2003. Prior to 2003, all off-site underground injection quantities were reported in variable #52, “M71”. This field will contain mostly zeroes for years prior to 2003. To obtain total off-site underground injection for any year, add fields 52, 53 and 54 together.
54	6.2 - M82	22,7	N	II	6.2	Off-site Underground Injection to Class II-V Wells. This sub category of off-site underground injection was created in 2003. Prior to 2003, all off-site underground injection quantities were reported in variable #52, “M71”. This field will contain mostly zeroes for years prior to 2003. To obtain total off-site underground injection for any year, add fields 52, 53 and 54 together.
55	6.2 - M72	22,7	N	II	6.2	Off-site Landfill/Disposal Surface Impoundment. Prior to 2002, all Landfill and Surface Impoundment releases were reported as “M72”. In 2002, “M72” was split into three subcategories representing Surface Impoundment (M63), Releases to Other Landfills (M64) and Releases to RCRA Subtitle landfills (M65). Subsequently, “M63” was subdivided into Subtitle C Surface Impoundment (M66) and Other Surface Impoundment (M67) in 2003. This field will contain mostly zeroes for years 2002 and after. To obtain total off-site Landfill/Disposal Surface Impoundment for any year, add fields 55 though 60 together.

Field Documentation for the "Basic Data" File

#	Field	Maximum Length	Data Type	Form R Reference		Definition
				Part	Section	
56	6.2 - M63	22,7	N	II	6.2	Off-site Surface Impoundment. This sub category of Off-site Landfill/Disposal and Surface Impoundment was established in 2002. Prior to 2002, all off-site landfill/disposal surface impoundment quantities were reported in variable #55, "M72". This field will contain mostly zeroes for years prior to 2002. In 2003, this field was subdivided into Subtitle C Surface Impoundment (M66) and Other Surface Impoundment (M67). To obtain total off-site Surface Impoundment for any year, add field Ns 56, 57 and 58 together.
57	6.2 - M66	22,7	N	II	6.2	Off-site Subtitle C Surface Impoundment. This sub category of Off-site Surface Impoundment was established in 2003. Prior to 2003, all off-site surface impoundment quantities were reported in variable #56, "M63". This field will contain mostly zeroes for years prior to 2003. To obtain total off-site Surface Impoundment for any year, add field numbers 56, 57 and 58 together.
58	6.2 - M67	22,7	N	II	6.2	Off-site Other Surface Impoundment. This sub category of Off-site Surface Impoundment was established in 2003. Prior to 2003, all off-site surface impoundment quantities were reported in variable #56, "M63. This field will contain mostly zeroes for years prior to 2003. To obtain total off-site Surface Impoundment for any year, add field Ns 56, 57 and 58 together.
59	6.2 - M64	22,7	N	II	6.2	Off-site Other Landfills. This sub category of Off-site Landfill/Disposal and Surface Impoundment was established in 2002. Prior to 2002, all off-site landfill/disposal surface impoundment quantities were reported in variable #55, "M72". This field will contain mostly zeroes for years prior to 2002.
60	6.2 - M65	22,7	N	II	6.2	Off-site RCRA Subtitle C Landfill. This sub category of Off-site Landfill/Disposal and Surface Impoundment was established in 2002. Prior to 2002, all off-site landfill/disposal surface impoundment quantities were reported in variable #55, "M72". This field will contain mostly zeroes for years prior to 2002.
61	6.2 - M73	22,7	N	II	6.2	Off-site Land Treatment
62	6.2 - M79	22,7	N	II	6.2	Off-site Other Land Disposal
63	6.2 - M90	22,7	N	II	6.2	Off-site Other Off-site Management
64	6.2 - M94	22,7	N	II	6.2	Off-site Transfer to Waste Broker – Disposal
65	6.2 - M99	22,7	N	II	6.2	Off-site Unknown

Field Documentation for the "Basic Data" File

#	Field	Maximum Length	Data Type	Form R Reference		Definition
				Part	Section	
66	Off-Site Release Total	22,7	N	None	None	The Off-site Release Total equals the sum of M10 + M41 + M62 + M71 + M72 + M63 + M64 + M65 + M73 + M79 + M90 + M94 + M99 + M40 (if the chemical is a category 1,3 or 4metal) + M61 (if the chemical is a category 1,3 or 4 metal) + (6.1 POTW - Metals and Metal Compounds Only)
67	6.2 - M20	22,7	N	II	6.2	Off-site Solvents/Organics Recovery
68	6.2 - M24	22,7	N	II	6.2	Off-site Metals Recovery
69	6.2 - M26	22,7	N	II	6.2	Off-site Other Reuse or Recovery
70	6.2 - M28	22,7	N	II	6.2	Off-site Acid Regeneration
71	6.2 - M93	22,7	N	II	6.2	Off-site Transfer to Waste Broker - Recycling
72	Off-Site Recycled Total	22,7	N	None	None	The sum of M20 + M24 + M26 + M28 + M93
73	6.2 - M56	22,7	N	II	6.2	Off-site Energy Recovery
74	6.2 - M92	22,7	N	II	6.2	Off-site Transfer to Waste Broker - Energy Recovery
75	Off-Site Recovery Total	22,7	N	None	None	The sum of M56 + M92
76	6.2 - M40	22,7	N	II	6.2	Off-site Solidification/Stabilization
77	6.2 - M50	22,7	N	II	6.2	Off-site Incineration/Thermal Treatment
78	6.2 - M54	22,7	N	II	6.2	Off-site Incineration/Insignificant fuel value
79	6.2 - M61	22,7	N	II	6.2	Off-site Waster Treatment (Excluding POTW)
80	6.2 - M69	22,7	N	II	6.2	Off-site Other Waste Treatment
81	6.2 - M95	22,7	N	II	6.2	Off-site Transfer to Waste Broker - Waste Treatment
82	Off-Site Treated Total	22,7	N	None	None	The sum of M40 + M50 + M54 + M61 + M69 + M95
83	Total Releases	22,7	N	None	None	The total on and off-site releases from sections 5 and 6 of the Form R. Equals On-site Release Total (field #45) + Off-site Release Total (field #66).
84	8.1 - Releases	22,7	N	II	8.1	Amount of Total On- and Off-site Releases as reported in Section 8, Source Reduction and Recycling Activities / Pollution Prevention. Reported from RY 1987 through 2002.
85	8.1a - On-site Contained Releases	22,7	N	II	8.1a	Beginning in RY 2003, the total releases in Section 8 of the form R were broken up into 4 sub categories. For this data element, facilities reported Total ON-SITE disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills and other landfills.
86	8.1b - On-site Other Releases	22,7	N	II	8.1b	Beginning in RY 2003, the total releases in Section 8 of the form R were broken up into 4 sub categories. For this data element, facilities reported their other ON-SITE disposal or releases not covered in 8.1a.

Field Documentation for the "Basic Data" File

#	Field	Maximum Length	Data Type	Form R Reference		Definition
				Part	Section	
87	8.1c - Off-site Contained Releases	22,7	N	II	8.1c	Beginning in RY 2003, the total releases in Section 8 of the form R were broken up into 4 sub categories. For this data element, facilities reported Total OFF-SITE disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills and other landfills.
88	8.1d - Off-site Other Releases	22,7	N	II	8.1d	Beginning in RY 2003, the total releases in Section 8 of the form R were broken up into 4 sub categories. For this data element, facilities reported their other OFF-SITE disposal or releases not covered in 8.1c.
89	8.2 - Energy Recovery On-site	22,7	N	II	8.2	Amount of Energy Recovery On-site
90	8.3 - Energy Recovery Off-site	22,7	N	II	8.3	Amount of Energy Recovery Off-site
91	8.4 - Recycling On-Site	22,7	N	II	8.4	Amount of Recycling On-site
92	8.5 - Recycling Off-Site	22,7	N	II	8.5	Amount of Recycling Off-site
93	8.6 - Treatment On-site	22,7	N	II	8.6	Amount of Treatment On-site
94	8.7 - Treatment Off-site	22,7	N	II	8.7	Amount of Treatment Off-site
95	Production Waste (8.1 thru 8.7)	22,7	N	II	8.1-8.7	The Total Production Waste Quantity. This is the summation of the quantities in Section 8.1 through 8.7 or field numbers 83 through 94.
96	8.8 - One-time Release	22,7	N	II	8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processing.
97	8.9 - Production Ratio	9,2	N	II	8.9	Production Ratio or Activity index.
98	Parent CO Name	60	C	I	5.1	Name of Parent Company.
99	Parent CO DB NUM	9	C	I	5.2	Parent Company's Dun & Bradstreet Number.
100	Date and Version #					Date and Version # are only in the Header. Date indicates the files extraction date. Version # indicates which years file format the file was created with. TRI facilities can revise their data submissions at any time. So, historic data sometimes changes. The version number specifies the point in time or reporting year from which the data was created from. For instance, the 2003 Data file that is v10 is data that reporting for the 2003 data cycle but extracted as it existed as of reporting year 2010.

Appendix A: Chemical Classifications

Category 1 Metals
ANTIMONY
ANTIMONY COMPOUNDS
ARSENIC
ARSENIC COMPOUNDS
BERYLLIUM
BERYLLIUM COMPOUNDS
CADMIUM
CADMIUM COMPOUNDS
CHROMIUM
CHROMIUM COMPOUNDS (EXCEPT CHROMITE ORE MINED IN THE TRANSVAAL REGION)
COBALT
COBALT COMPOUNDS
COPPER
COPPER COMPOUNDS
LEAD
LEAD COMPOUNDS
MANGANESE
MANGANESE COMPOUNDS
MERCURY
MERCURY COMPOUNDS
NICKEL
NICKEL COMPOUNDS
SELENIUM
SELENIUM COMPOUNDS
SILVER
SILVER COMPOUNDS
THALLIUM
THALLIUM COMPOUNDS
VANADIUM COMPOUNDS
ZINC COMPOUNDS

Category 2 Metals
ALUMINUM OXIDE (FIBROUS FORMS)
ALUMINUM PHOSPHIDE
ASBESTOS (FRIABLE)
BIS(TRIBUTYLTIN) OXIDE
BORON TRICHLORIDE
BORON TRIFLUORIDE
C.I. DIRECT BLUE 218
C.I. DIRECT BROWN 95
FENBUTATIN OXIDE
FERBAM
IRON PENTACARBONYL
LITHIUM CARBONATE
MANEB
METIRAM
MOLYBDENUM TRIOXIDE
OSMIUM TETROXIDE
POTASSIUM BROMATE
SODIUM NITRITE
THORIUM DIOXIDE
TITANIUM TETRACHLORIDE
TRIBUTYLTIN FLUORIDE
TRIBUTYLTIN METHACRYLATE
TRIPHENYLTIN CHLORIDE
TRIPHENYLTIN HYDROXIDE
ZINEB

Category 3 Metals
BARIUM
BARIUM COMPOUNDS

Category 4 Metals
ALUMINUM (FUME OR DUST)
VANADIUM (EXPEPT WHEN CONTIANED IN AN ALLOY)
ZINC (FUME OR DUST)