RTECS® (Registry of Toxic Effects of Chemical Substances)

Subject Coverage

- Identification of Substances
- Toxicity Data
- Irritation Data
- Federal Standards & Regulations
- EPA, NIOSH, NTP, & OSHA Activities
- Mutation Data
- Tumorigenic Effects
- Reproductive Effects
- Toxicology reviews
- Other Multiple Dose Data

File Type

Directory, Substance, Property

Features

Thesaurus	None				
Alerts (SDIs)	Not Available				
CAS Registry Number® Identifiers	☑	Page Images	☐	STN® AnaVist™	☐
Keep & Share	☑	SLART	☑	STN Easy®	☑
Learning Database	☐	Structures	☐		

Record Content

- Substance information
- Numeric toxicity data
- Standards and regulations

File Size

More than 191,400 records (8/2019)

Coverage

1971-present

Updates

Quarterly

Language

English

Database Producer

BIOVIA
5005 Wateridge Vista Drive
San Diego, CA 92121
Phone: 858-799-5000
Support: https://www.3ds.com/support/

Sources	Journal Articles, Government Reports, and Unpublished EPA Test Submissions (TSCATS).
User Aids	• Online Helps (HELP DIRECTORY lists all help messages available) • Comprehensive Guide to RTECS • STNGUIDE
Clusters	• CASRNS • GOVREGS • HEALTH • NUMERIC • SAFETY • TOXICOLOGY STN Database Clusters information (PDF).
Pricing	Enter HELP COST at an arrow prompt (=>).

Search and Display Field Codes

Fields that allow left truncation are marked with an asterisk (*).

Search Field Name	Search Code	Search Examples	Display Codes
Basic Index * (contains single words from the chemical name (CN), class identifier (CI), chemical definition (DEF), irritation data (IRR), toxicology data (TOX), reproductive effects data (REP), mutation data (MUT), tumorigenic effects data (TUM), other multiple dose data (OMUL), reviews (CREV, TREV), threshold limit value (TLV), standards and regulations (SREG), NIOSH recommendations (NREC), national occupational survey (SURV), and federal agency status (ASTA) fields, as well as RTECS numbers (RTN), molecular formulas (MF), and CAS Registry Numbers (RN))	None (or /BI)	S POISONOUS S AROMATIC HYDROCARBON# S ?TOXIC? S C7H10 S 77772-15-7	ASTA, CI, CN, CREV, DEF, IRR, MF, MUT, NREC, OMUL, REP, RN, RTN, SREG, SURV, TLV, TOX, TREV, TUM
Accession Number	/AN	S 10015/AN	AN
Cancer Review **(1)**	/CREV	S HUMAN?/CREV S ANIMAL EVIDENCE/CREV	CREV
Cell Type (code and text)	/CELL	S BONE MARROW/CELL S BMR/CELL	MUT
Chemical Name **(2)**	/CN	S 3-BUTEN-2-OL/CN S "LEAD ARSENATE (DOT:OSHA)"/CN	CN
Class Identifier	/CI	S HORMONE/CI S PRIMARY IRRITANT/CI	CI
Definitions **(1)**	/DEF	S FERMENT? PRODUCT#/DEF	DEF
Dose Information (includes dosage amounts for IRR and MUT) **(3,4)**	/DOSE	S 82/DOSE S 35-40/DOSE (P) MUT/FA S DOSE<=50 (P) MG/IRR	IRR, MUT
Duration (includes duration information from IRR, MUT, OMUL, REP, TOX, and TUM)	/DUR	S 10D/DUR S 24H/DUR (P) IRR/FA	IRR, MUT, OMUL, REP, TOX, TUM
Effect (code and text) (includes effects from IRR, REP, OMUL, TOX, TUM) **(5)**	/EFF	S SHOCK/EFF S H08/EFF	IRR, REP, OMUL, TOX, TUM
Element Count **(3)**	/Element Symbol	S N>=5 S 2/P	Not displayed
Federal Agency Status (EPA, NIOSH, NTP, OSHA) **(1)**	/ASTA	S ASBESTOS/ASTA S SECTION 8/ASTA	ASTA
Field Availability	/FA	S CANCER REVIEW/FA S 24H/DUR (P) IRR/FA	FA
Field not Available	/FNA	S NATURAL?/CI AND DEF/FNA	Not displayed
Formula Weight **(3)**	/FW (or /MW)	S 61.05/FW	FW
International Standard (Document) Number (contains CODEN and NIOSH-assigned codes)	/ISN	S 47JMAE/ISN S JOCEAH/ISN (P) TOX/FA S NTIS?/ISN	ASTA, CREV, IRR, MUT, NREC, OMUL, REP, SREG, TLV, TREV, TOX, TUM
Irritation Data (contains route, organism, dose, duration, and effect information) **(1)**	/IRR	S EYE#/IRR S 500 MG/IRR S EYES (P) HUMAN/IRR	IRR

Search and Display Field Codes (cont'd)

Search Field Name	Search Code	Search Examples	Display Codes
Journal Title **(6)**	/JT	S TOXICOLOGY LETTERS/JT	ASTA, CREV, IRR, MUT, NREC, OMUL, REP, SREG, TLV, TREV, TOX, TUM
Molecular Formula	/MF	S C16H18N4/MF S C16 H18 N4/MF S C16H18N4O2S.2CLH/MF	MF
Mutation Data (includes system, organism, route, dose, duration, and cell type information) **(1)**	/MUT	S LUNG/MUT S 50 MG L/MUT	MUT
National Occupational Survey **(1)**	/SURV	S 786/SURV S TNF 33/SURV	SURV
NIOSH Recommendations **(1)**	/NREC	S BENZYL CHLORIDE/NREC	NREC
Number of Components **(3)**	/NC	S 4/NC	Not displayed
Organism (code and text) (includes organisms from IRR, MUT, OMUL, REP, TOX, and TUM) **(5)**	/ORGN	S MOUSE/ORGN S MUS/ORGN (P) MUT/FA	IRR, MUT, OMUL, REP, TOX, TUM
Other Multiple Dose Data (contains effect, route, organism, dose, and duration information) **(1)**	/OMUL	S MUSCLE WEAKNESS/OMUL	OMUL
Periodic Group	/PG	S A7/PG	Not displayed
Reproductive Effects Data contains effect, route, organism, dose, and duration information) **(1)**	/REP	S FETUS/REP S 550 MG KG/REP	REP
Route (includes routes from IRR, MUT, OMUL, REP, TOX, and TUM) (code and text) **(5)**	/RTE	S SKIN/RTE S ITT/RTE	IRR, MUT, OMUL, REP, TOX, TUM
RTECS Entry/Update Date **(3)**	/DATE	S DATE>=20120700	DATE
RTECS Number	/RTN	S DA0184000/RTN	RTN
Source (contains CODEN, NIOSH-assigned document codes, and collation information) **(1,6)**	/SO	S NTIS/SO S FAATDF 1997/SO S NTP/SO (P) ASTA/FA	ATSA, CREV, IRR, MUT, OMUL, NREC, REP, SREG, TLV, TOX, TREV, TUM
Standards and Regulations **(1)**	/SREG	S AIR(1A)DUST/SREG S DUST IN AIR/SREG	SREG
System (code and text) **(5)**	/SYS	S DNA DAMAGE/SYS S DND/SYS	MUT
Threshold Limit Value **(1)**	/TLV	S 300/TLV S MG 2/TLV	TLV
Toxicity Data (contains effect, route, organism, dose, and duration information) **(1)**	/TOX	S INHALATION/TOX S FLUID# CHANG?/TOX S (BRAIN (P) HMN)/TOX	TOX
Toxicology Review **(1)**	/TREV	S TOXICOLOGY REVIEW/TREV	TREV
Tumorigenic Data (contains effect, route, organism, dose, and duration information) **(1)**	/TUM	S (CARCINOMA(P)RODENT)/TUM S 17 G KG/TUM	TUM
Wiswesser Line Notation	/WLN	S 10SW5SW10/WLN	WLN

(1) Implied (S) proximity is available in this field.
(2) Includes the prime name and synonyms. Foreign names have the language in parentheses after the name, e.g., Cui Xing AN (Chinese). Trade names that are obsolete have (Obs.) following the name, e.g., Textilon (Obs.).
(3) Numeric search field that may be searched with numeric operators or ranges.
(4) Units are not searchable in the /DOSE search field.
(5) EXPAND with codes to see definitions, e.g., E V10/EFF.
(6) Use the FULL display formats, e.g., OMULFULL, to see the full references.

Property Search and Display Field Codes

Property Search Field Name	Default Unit	Search Code	Search Examples	Display Codes
Lethal Concentration Fifty, Aerosol (includes data from TOX) **(1)**	mg/m**3	/LC50A	S 11+-1/LC50A S LC50A>20 g/m**3	OMUL, TOX
Lethal Concentration Fifty, Vapor (includes data from TOX) **(1)**	ppm	/LC50V	S 175/LC50V	OMUL, TOX
Lethal Concentration Low, Aerosol (includes data from TOX) **(1)**	mg/m**3	/LCLOA	S 65-70/LCLOA	OMUL, TOX
Lethal Concentration Low, Vapor (includes data from TOX) **(1)**	ppm	/LCLOV	S 10<=LCLOV	OMUL, TOX
Lethal Dose Fifty (includes data from TOX) **(1)**	mg/kg	/LD50	S 2E-03/LD50 S LD50<1 UG/G(P)TOX/FA	OMUL, TOX
Lethal Dose Low (includes data from TOX) (1)	mg/kg	/LDLO	S 0.07+-1%/LDLO	OMUL, TOX
Toxic Concentration Low, Aerosol (includes data from OMUL, REP, TOX, and TUM) **(1)**	mg/m**3	/TCLOA	S TCLOA>250	OMUL, REP, TOX, TUM
Toxic Concentration Low, Vapor (includes data from OMUL, REP, TOX, and TUM) **(1)**	ppm	/TCLOV	S 96+-2/TCLOV	OMUL, REP, TOX, TUM
Toxic Dose Low (includes data from OMUL, REP, TOX, and TUM) **(1)**	mg/kg	/TDLO	S 14/TDLO	OMUL, REP, TOX, TUM

(1) Numeric search field that may be searched with numeric operators or ranges.

DISPLAY and PRINT Formats

Any combination formats may be used to display or print answers. Multiple codes must be separated by spaces or commas, e.g., D L1 RN CN STR 4. The fields are displayed or printed in the order requested.

Hit-term highlighting is available in the following display fields: AN, CI, CN (only first name is highlighted), DATE, DEF, FW, MF, RN, RTN, and WLN. Highlighting must be ON during SEARCH to use the HIT, KWIC, and OCC formats.

Format	Content	Examples
AN	Accession Number	D L4 1-4 AN
ASTA	Federal Agency Status for EPA, NIOSH, NTP, and OSHA with source information	D L1 3 ASTA
CHC	Character Count	D CHC 1,3-5
CI	Class Identifier	D CI 5-10
CN	Chemical Name	D 1-3,7,8 CN
CREV	Cancer Review with source information	D CREV
DATE	RTECS Entry/Update Date	D DATE 1-5
DEF	Definitions	D L1 DEF 3
FA **(1,2)**	Field Availability	D 1,3,6 FA L5
FW (MW)	Formula Weight	D FW
IRR	Tabular display of irritation data (Route, Organism, Dose, Duration, Effect, Source)	D IRR 2
MF	Molecular Formula	D L8 MF 1-3
MUT	Tabular display of mutation data (System, Organism, Cell Type, Route, Dose, Duration, and Source	D MUT
NREC	NIOSH recommendations with source information	D NREC
OMUL	Tabular display of other multiple dose data (Effect, Route, Organism, Dose, Duration, Source)	D OMUL
REP	Tabular display of reproductive effects data (Effect, Route, Organism, Dose, Duration, Source)	D REP
RN	CAS Registry Number	D RN 4
RTN	RTECS Number	D RTN 3,4
SREG	Standards and regulations with source information	D SREG
STF **(2)**	Flat Structure Diagram (no stereo bonds indicated)	D STF
STR **(3)**	Structure Diagram (includes stereo bonds and R/S/E/Z labels when available)	D 1-10 CN STR
STS **(2,3)**	Stereo Structure (includes stereo bonds when available)	D STS
SURV	National Occupational Survey (NOHS, NOES) with source information	D SURV 2
TLV	Threshold Limit Value with source information	D L3 4 TLV
TOX	Tabular display of toxicity data (Effect, Route, Organism, Dose, Duration, Source)	D TOX
TREV	Toxicology review with source information	D 5,3 TREV
TUM	Tabular display of tumorigenic data (Effect, Route, Organism, Dose, Duration, Source)	D TUM
WLN	Wiswesser Line Notation	D L4 WLN 3
ALL	AN, RN, RTN, MF, FW, CN, DEF, CI, WLN, DATE, CHC, STR, IRRFULL, MUTFULL, REPFULL, TUMFULL, TOXFULL, OMULFULL, CREVFULL, TREVFULL, TLVFULL, SREGFULL, NREC, SURV, ASTAFULL	D L3 2 ALL
ASTAFULL	ASTA with all titles listed under one header	D ASTAFULL
BIB	CREV, TREV, TLV	D 1-3,5 BIB
CREVFULL	CREV with all sources listed under one header and the complete cancer review references cited in the sources	D CREVFULL
EFFECTS	IRR, MUT, REP, TUM, TOX, OMUL	D EFFECTS 1-10
IDE	AN, RN, RTN, MF, FW, CN, DEF, CI, WLN, DATE, CHC, STR	D IDE
IRRFULL	IRR and complete irritation data references cited in the sources	D IRRFULL 1,4
LEGAL	SREG, NREC, SURV, ASTA	D LEGAL TOTAL
MUTFULL	MUT and complete mutation data references cited in the sources	D MUTFULL
OMULFULL	OMUL and the complete other multiple dose references cited in the sources	D OMULFULL
QRD **(4)**	IDE and fields containing hit terms. When the hit terms occur in a table, only the lines containing the hit terms are displayed. (QRD is the default)	D L4 7 QRD
REPFULL	REP and the complete reproductive effects references cited in the sources	D REPFULL 1-4

DISPLAY and PRINT Formats (cont'd)

Format	Content	Examples
SREGFULL	SREG with all sources listed under one heading and the complete standards and regulations references cited in the sources	D SREGFULL 2 L4
TLVFULL	TLV with all sources listed under one heading and the complete threshold limit value references cited in the sources	D L7 TLVFULL
TOXFULL	TOX and the complete toxicity data references cited in the sources	D TOXFULL 1-3
TREVFULL	TREV with sources listed under one heading and the complete toxicology review references cited in the sources	D TREVFULL
TUMFULL	TUM and complete tumorigenic data references cited in the sources	D 3 TUMFULL
HIT	Fields containing hit terms. When the hit term occurs in a table, only the line containing the hit term is displayed.	D HIT
KWIC	Hit term with 20 words on either side (KeyWord-In-Context)	D KWIC NOH
OCC **(1)**	Number of occurrences of hit terms and fields in which they occur	D OCC 1-5

(1) No online display fee for this format.
(2) Custom display only.
(3) Stereo structure diagrams are available only on graphics terminals and in offline prints.
(4) Only the first name in the CN field is displayed.

SELECT, ANALYZE, and SORT Fields

The SELECT command is used to create E-numbers or an L-number containing terms from the specified field in an answer set.

The ANALYZE command is used to create an L-number containing terms taken from the specified field in an answer set.

The SORT command is used to rearrange the search results in either alphabetic or numeric order of the specified field(s).

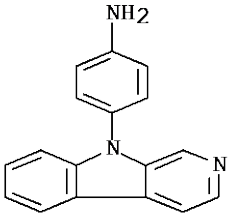
Field Name	Field Code	ANALYZE/ SELECT (1)	SORT
Accession Number	AN	Y	N
Cancer Review	CREV	Y **(2)**	N
CAS Registry Number	RN	Y **(3)**	Y
CAS Registry Number and Chemical Name	CHEM	Y **(3,4)**	N
Cell Type	CELL	Y **(2)**	N
Chemical Name	CN	Y **(5)**	Y
	NAME	Y **(3,5)**	N
Class Identifier	CI	Y	N
Definitions	DEF	Y **(3)**	N
Effect	EFF	Y **(2)**	N
Federal Agency Status (EPA, NIOSH, NTP, OSHA)	ASTA	Y **(2)**	N
Formula Weight	FW	Y	Y
Journal Title	JT	Y **(2)**	N
Molecular Formula	MF	Y (default)	N
Molecular Weight	MW	Y	Y
National Occupational Survey (NOHS, NOES)	SURV	Y **(2)**	N
NIOSH Recommendations	NREC	Y **(2)**	N
Occurrence Count of Hit Terms	OCC	N	Y
Organism	ORGN	Y **(2)**	N
Route	RTE	Y **(2)**	N
RTECS Entry/Update Date	DATE	Y	Y
RTECS Number	RTN	Y	Y
Source	SO	Y **(2,6)**	N
Standards and Regulations	SREG	Y **(2)**	N
System	SYS	Y **(2)**	N
Threshold Limit Value	TLV	Y **(2)**	N
Toxicology Review	TREV	Y **(2)**	N
Wiswesser Line Notation	WLN	Y	Y

(1) HIT may be used to restrict terms extracted to terms that match the search expression used to create the answer set, e.g., SEL HIT MF
(2) SELECT HIT and ANALYZE HIT are not valid with this field
(3) Appends /BI to the terms created by SELECT.
(4) SELECT HIT and ANALYZE HIT are valid only when search term is the first name in the CN field or is a CAS Registry Number.
(5) SELECT HIT and ANALYZE HIT are valid only when search term is the first name.
(6) Selects or analyzes the CODEN with /SO appended to the terms created by SELECT.

Sample Records

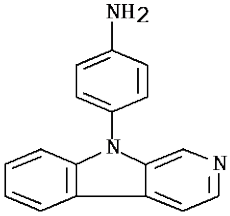
DISPLAY QRD (Default)

```
CAS Registry Number (RN):  219959-86-1      RTECS
RTECS Number (RTN):        CY1204700
Molecular Formula (MF):    C17 H13 N3
Formula Weight (FW):       259.31
Chemical Name (CN):        Benzenamine, 4-(9H-pyrido(3,4-b)indol-9-yl)-
Class Identifier (CI):     Tumorigen; Mutagen
Entry/Update Date (DATE):  Jul 2012
Character Count:           3684
```



DISPLAY ALL

```
CAS Registry Number (RN):  219959-86-1      RTECS
RTECS Number (RTN):        CY1204700
Molecular Formula (MF):    C17 H13 N3
Formula Weight (FW):       259.31
Chemical Name (CN):        Benzenamine, 4-(9H-pyrido(3,4-b)indol-9-yl)-;
                           9-(4'-Aminophenyl)-9H-pyrido(3,4-b)indole;
                           Aminophenylnorharman
Class Identifier (CI):     Tumorigen; Mutagen
Entry/Update Date (DATE):  Jul 2012
Character Count:           3684
```



MUTATION DATA (MUT):

System SYS	Organism ORGN	Cell Type CELL	Route RTE	Dose DOSE	Dur. DUR	Source SO
sister chromatid exchange	hamster	lung		0.005 mg/L	6H (+S9)	MUREAV 515,181,20 02
cytogenic analysis	hamster	lung		0.0012 5 mg/L	6H (+S9)	MUREAV 515,181,20 02
mutation in microorganisms	Salmonella typhimurium			1 mg/L	20M (+S9)	MUREAV 515,181,20 02

mutation in microorganisms	Salmonella typhimurium			1 mg/plate (+S9)		MUREAV 577S,1,2005
DNA damage	Mouse		oral	100.8 mg/kg	12W	CRNGDP 24,1985,2003
DNA damage	Salmonella typhimurium			0.1 umol/L	2H (+S9)	MUTAEX 21,411,2006
DNA damage	Salmonella typhimurium			0.1 umol/L	3H	MUTAEX 21,411,2006

MUTATION DATA REFERENCES:
MUREAV Mutation Research (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1964-
CRNGDP Carcinogenesis (London) (Oxford Univ. Press, Pinkhill House, Southfield Road, Eynsham, Oxford OX8 1JJ, UK) V.1- 1980-
MUTAEX Mutagenesis (Oxford Univ. Press, Pinkhill House, Southfield Road, Eynsham, Oxford OX8 1JJ, UK) V.1- 1986-

TUMORIGENIC DATA (TUM):

Effect EFF	Route RTE	Organism ORGN	Dose DOSE	Duration DUR	Source SO
V02;L60	oral	rat	TDLo 16.80 mg/kg	4W-C	CALEDQ 163,157,2001
V03;L60;V16	oral	rat	TDLo 2 mg/kg		JTPAE7 17,1,2004

TUMORIGENIC DATA REFERENCES:
CALEDQ Cancer Letters (Shannon, Ireland) (Elsevier Scientific Pub. Ireland Ltd., POB 85, Limerick, Ireland) V.1- 1975-
JTPAE7 Journal of Toxicologic Pathology (Nihon Dokusei Byori Gakkai, editor, 3-25-8 Nishi- shinbashi, Minato-ku, Tokyo 105, Japan) V.1- 1988

TOXICITY DATA (TOX):

Effect EFF	Route RTE	Organism ORGN	Dose DOSE	Source SO
	oral	rat	TDLo 90 mg/kg	TXAPA9 175,169,2001
T01;T02;U01	oral	rat	TDLo 90 mg/kg	TXAPA9 175,169,2001

TOXICITY DATA REFERENCES:
TXAPA9 Toxicology and Applied Pharmacology (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959-

OTHER MULTIPLE DOSE DATA (OMUL):

Effect EFF	Route RTE	Organism ORGN	Dose DOSE	Duration DUR	Source SO
U01	oral	rat	TDLo 1344 mg/kg	80W-C	CRNGDP 25,1967,2004
U01	oral	rat	TDLo 56 mg/kg	4W-C	CRNGDP 25,1967,2004
K61;L60;Z01	oral	rat	TDLo 686 mg/kg	49W-C	CRNGDP 25,1967,2004

OTHER MULTIPLE DOSE REFERENCES:
CRNGDP Carcinogenesis (London) (Oxford Univ. Press, Pinkhill House, Southfield Road, Eynsham, Oxford OX8 1JJ, UK) V.1- 1980-

TOXICOLOGY REVIEW (TREV):
TOXICOLOGY REVIEW MUREAV 562,19,2004
TOXICOLOGY REVIEW EMMUEG 45,150,2005
TOXICOLOGY REVIEW MUREAV 721,27,2011

TOXICOLOGY REVIEW REFERENCES:
MUREAV Mutation Research (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1964-

EMMUEG Environmental and Molecular Mutagenesis (Alan R. Liss, Inc., 41 E. 11th St., New York, NY 10003) V.10- 1987-