

Material Safety Data Sheets - OHS™

FILE DESCRIPTION

Material Safety Data Sheets - OHS™ is a comprehensive collection of material safety data sheets on more than 54,512 chemicals, including pure substances and mixtures. The data sheets are prepared and formatted in accordance with the ANSI Z400.1 standard, which is a 16 section format that has been adopted by the Chemical Manufacturers Association (CMA), the International Labor Organization, and other major organizations. The data sheets help organizations satisfy regulatory and safety laws, provide employee right-to-know information, respond to chemical emergencies, and have the information available to safely handle hazardous waste.

SUBJECT COVERAGE

Material Safety Data Sheets - OHS contain the 16 section titles and sequence from the ANSI Z400.1 standard.

- Chemical Product and Company Identification
- Composition, Information on Ingredients
- Hazards Identification
- First Aid Measures
- Fire Fighting Measures
- Accidental Release Measures
- Handling and Storage
- Exposure Controls, Personal Protection
- Physical and Chemical Properties
- Stability and Reactivity
- Toxicological Information
- Ecological Information
- Disposal Considerations
- Transport Information
- Regulatory Information
- Other Information

SOURCES

Material Safety Data Sheets - OHS contains material safety data sheets researched and prepared by an experienced staff of safety and health professionals, independent of chemical manufacturers. This creates MSDSs that report independently researched information objectively and without bias. The database originated with Occupational Health Services, Inc. (OHS) in 1978.

DIALOG FILE DATA

Inclusive Dates: Current
Update Frequency: Quarterly (reload)
File Size: 55,951 records as of Q4 1997

CONTACT

Material Safety Data Sheets - OHS is provided by MDL Information Systems, Inc. Questions concerning file content should be directed to:
MDL Information Systems, Inc.
14600 Catalina Street
San Leandro, CA 944577
Phone: 510-895-1313
Toll Free: 800-635-0064
Fax: 510-352-2870
E-Mail: Techsupp@MDLI.com

SAMPLE RECORD

DIALOG(R) File 332: MATERIAL SAFETY DATA SHEETS - OHS
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AN 0040096
AA= OHS/MDL Record Number : OHSDF945
MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MDL Information Systems, Inc. FOR EMERGENCY SOURCE INFORMATION
14600 Catalina Street CONTACT: 1-615-366-2000 in USA
San Leandro CA 94577
1-800-635-0064 (Toll Free) or
1-510-895-1313

RN= CAS Registry Number:
RR= RTECS Number:
EU=, EI= EU (EINECS) Number:

/CN,CN=,/NA,NA= SUBSTANCE: SCHOOL BUS NATIONAL CHROME YELLOW ENAMEL

/SY,SY=,/NA,NA= TRADE NAME/SYNONYM(S): BOWMAN SCHOOL BUS NATIONAL CHROME YELLOW PAINT;
OHSDF945

CC= CREATION DATE: 19930826 REVISED: 19970211
RD=, UP=

SECTION 2 - COMPOSITION, INFORMATION OR INGREDIENTS

/NA,NA=,/SY,SY= 1) Component Substance: ACETONE
/NA,NA=,/SY,SY= Component Percent: 30-40 %
RC= CAS Registry Number: 67-64-1
2) Component Substance: PROPANE
RC= <23 % CAS Registry Number: 74-98-6
3) Component Substance: ISOBUTANE
RC= <23 % CAS Registry Number: 75-28-5
4) Component Substance: ETHYL ALCOHOL
RC= Component Percent: 5-10 %
CAS Registry Number: 64-17-5
5) Component Substance: DIACETONE ALCOHOL
RC= Component Percent: 5-10 %
CAS Registry Number: 123-42-2

SECTION 3 - HAZARDS IDENTIFICATION

NH=, NF=, NR= NFPA Ratings (scale 0-4): Health=2 Fire=3 Reactivity=0

/HZ, /HAZ EMERGENCY OVERVIEW:
PHYSICAL FORM: liquid.
ODOR: distinct odor.
MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye
irritation, central nervous system depression, difficulty breathing.
PHYSICAL HAZARDS: Flammable liquid and vapor. Vapor may cause flash fire.

POTENTIAL HEALTH EFFECTS
INHALATION:
SHORT TERM EXPOSURE: irritation, low body temperature, nausea, vomiting,
stomach pain, chest pain, difficulty breathing, headache, drowsiness,
dunkenness, dizziness, disorientation, visual disturbances, suffocation,
(...)

C1= CARCINOGEN STATUS:
C2= OSHA: N
C3= NTP: N
IARC: N

FA SECTION 4 - FIRST AID MEASURES

INHALATION:
When safe to enter area, remove from exposure. Use a bag valve mask or similar
device to perform artificial respiration (rescue breathing) if needed. Keep
warm and at rest. Get medical attention immediately.
SKIN CONTACT:

SAMPLE RECORD (cont'd)

Remove contaminated clothing, jewelry, and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get medical attention, if needed.

EYE CONTACT:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately.

INGESTION:

Contact local poison control center or physician immediately. Never make an (...)

FI

SECTION 5 - FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARD:

Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive.

EXTINGUISHING MEDIA:

carbon dioxide, regular dry chemical.
Large fires: Flood with fine water spray.

FIREFIGHTING:

Move container from fire area if you can do it without risk. Cool containers (...)

FIREFIGHTING PROTECTIVE EQUIPMENT:

Full firefighting turn-out gear (bunker gear). Any supplied-air respirator (...)

FP=, FT=
LE=, LT=
UE=, AP=, FC=

FLASH POINT: 0 F (-18 C)
LOWER EXPLOSIVE LIMIT: 1.1%

AR

SECTION 6 - ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL SPILL:

Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Stop leak if you can do it without risk. Reduce vapors with water spray. Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition. Ventilate closed spaces before entering. Reportable (...)

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SECTION 7 - HANDLING AND STORAGE

Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Grounding and bonding required. Store below 49 C. Avoid contact with light. Keep separated from incompatible substances.

EP

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

ACETONE:

1000 ppm (2400 mg/m3) OSHA TWA
750 ppm (1780 mg/m3) OSHA TWA (vacated by 58 FR 35338, June 30, 1993)
1000 ppm (2375 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)
(...)

VENTILATION:

Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

EYE PROTECTION:

Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING:

Wear appropriate chemical resistant clothing. Remove any chemical soaked clothing immediately.

GLOVES:

Wear appropriate chemical resistant gloves.

RESPIRATOR:

Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use. Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

SAMPLE RECORD (cont'd)

	For Unknown Concentrations or Immediately Dangerous to Life or Health - Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
PP	SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES
DS=, /PO	DESCRIPTION: PHYSICAL FORM: liquid ODOR: distinct odor
BP=, BT=	BOILING POINT: 133 F (56 C)
MP=, MT=	MELTING POINT: No data available.
DN=, DT=, SG=	SPECIFIC GRAVITY: 0.90
PH=, PC=	pH: No data available.
VP=, VT=	VAPOR PRESSURE: 186 mmHg @ 20 C
VD=, VA=	VAPOR DENSITY: No data available.
VO=, VL=	VOLATILITY: Range 85-90%
EV=, ET=	EVAPORATION RATE: No data available.
OD=, OT=	ODOR THRESHHOLD: No data available.
SL=, SB=, SU=	WATER SOLUBILITY: No data available.
ST	SECTION 10 - STABILITY AND REACTIVITY
ST=	REACTIVITY: Stable under normal temperatures and pressures.
	CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Containers may rupture or explode if exposed to heat.
ST=	INCOMPATIBILITIES: acids, amines, halogens, halo carbons, oxidizing materials, metal salts, peroxides, combustible materials, bases, metals, metal oxides
	ACETONE: ACIDS: Incompatible.
	AMINES (ALIPHATIC): Incompatible.
	BROMINE: Violent reaction with excess amounts of bromine. (...)
	POLYMERIZATION: Will not polymerize.
/TO, /TOX	SECTION 11 - TOXICOLOGICAL INFORMATION
	SCHOOL BUS NATIONAL CHROME YELLOW ENAMEL:
	CARCINOGEN STATUS: None.
	ACUTE TOXICITY LEVEL: No data available.
	ACETONE:
	IRRITATION DATA: 500 ppm eyes-human; 395 mg open skin-rabbit mild; 500 mg/24 hour(s) skin-rabbit mild; 20 mg eyes-rabbit severe; 20 mg/24 hour(s) eyes-rabbit moderate.
	TOXICITY DATA: 2857 mg/kg oral-man TDLo; 440 ug/m3/6 minute(s) inhalation-man TCLo; 10 mg/m3/6 hour(s) inhalation-man TCLo; 500 ppm inhalation-human TCLo; 12000 ppm/4 hour(s) inhalation-man TCLo; 1159 mg/kg unreported-man LDLo; 5800 mg/kg (...)
	CARCINOGEN STATUS: None.
	LOCAL EFFECTS: Irritant: inhalation, skin, eye.
	ACUTE TOXICITY LEVEL: Slightly Toxic: inhalation, ingestion.
	TARGET ORGANS: central nervous system
	MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: respiratory problems, skin disorders and allergies.
	MUTAGENIC DATA: sex chromosome loss and non disjunction - Saccharomyces cerevisiae 47600 ppm; cytogenetic analysis - hamster fibroblast 40 gm/L.
	REPRODUCTIVE EFFECTS DATA:

SAMPLE RECORD (cont'd)

273 gm/kg oral-rat TDLo 13 week(s) male; 31500 ug/m3 inhalation-mammal TCLo/24 hour(s) 1-13 day(s) pregnant female continuous.

ADDITIONAL DATA:

Alcohol may enhance the toxic effects.

PROPANE:

CARCINOGEN STATUS:

None.

(...)

DM

SECTION 12 - ECOLOGICAL INFORMATION

DI

SECTION 13 - DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

TP

SECTION 14 - TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101 SHIPPING NAME-UN NUMBER:

Consumer commodity

U.S. DOT 49 CFR 172.101 HAZARD CLASS OR DIVISION:

ORM-D

U.S. DOT 49 CFR 172.101 AND SUBPART E LABELING REQUIREMENTS:

None

U.S. DOT 49 CFR 172.101 PACKAGING AUTHORIZATIONS:

EXCEPTIONS:

49 CFR 173.156, 306

NON-BULK PACKAGING:

49 CFR 173.156, 306

BULK PACKAGING:

None

U.S. DOT 49 CFR 172.101 QUANTITY LIMITATIONS:

PASSENGER AIRCRAFT OR RAILCAR:

30 kg gross

CARGO AIRCRAFT ONLY:

30 kg gross

RG

SECTION 15 - REGULATORY INFORMATION

TS= TSCA Status : Y
 TE= TSCA 12(b) export notification : Y
 C4= CERCLA Section 103 (40 CFR 302.4) : Y
 R6= SARA Section 302 (40 CFR 355.30) : N TPQ
 R7= SARA Section 304 (40 CFR 355.40) : N RQ
 R8= SARA Section 313 (40 CFR 372.65) : Y
 CA= California Prop 65 Status : N
 R1= SARA ACUTE Hazard ? : Y
 R2= SARA CHRONIC Hazard ? : Y
 R3= SARA FIRE Hazard ? : Y
 R5= SARA REACTIVITY Hazard ? : N
 R4= SARA SUDDEN RELEASE Hazard ? : Y
 WH= WHMIS Classification : N

E1=, E2=

SECTION 16 - OTHER INFORMATION

Other information is not currently available for this record

Codes which are not preceded by a slash (/) or followed by an equal (=) sign are display codes, e.g., AN, AR, DI, DM, EP, FA, FI, HS, PP, RG, ST, TP. Mixtures do not usually have CAS Registry Numbers (RN=); there are CAS Registry Numbers for the components (RC=) of the mixtures. The Component CAS Registry Numbers and Component Percent are searchable as /NA, NA=, /SY, and SY=. The location of the data for CC=, RN=, RR=, EU=, AP=, AT=, FC=, UE=, UT=, E1=, and E2= when present, is indicated above. Other physical properties (MW=, MF=, VI=, VS=, D1=, D2=, SE=, SO=, SM=, SP=, TR=, and TZ) included in Section 9.

SEARCH OPTIONS

BASIC INDEX

SEARCH SUFFIX	DISPLAY CODE	FIELD NAME	INDEXING	SELECT EXAMPLES
— /CN	AR CN	Accidental Release Measures ¹ Main Substance Name ^{2,3,4}	Word Segment & Word & Phrase	S WATER(W)SPRAY(1N)REDUCE(W)VAPOR? S TRI(W)CHLORO/CN S (SCHOOL(W)BUS AND YELLOW)/CN S SCHOOL BUS NATIONAL CHROME?/CN
—	DI	Disposal Considerations ¹	Word	S APPLICABLE(W)REGULATIONS
—	DM	Ecological Information ¹	Word	S RAINBOW(W)TROUT
—	EP	Exposure Controls and Personal Protection ¹	Word	S SAFETY(W)GOGGLES
—	FA	First Aid Measures ¹	Word	S MEDICAL(W)ATTENTION(W)IMMEDIATELY
—	FI	Fire Fighting Measures ¹	Word	S DRY(W)CHEMICAL
/HAZ	HZ	Hazards Identification ¹	Word	S (RASH AND DIZZINESS)/HZ
—	HS	Handling and Storage ¹	Word	S AVOID(2W)SUNLIGHT
/HZ	HZ	Hazards Identification ¹	Word	S POISON/HZ
/NA	NA	Chemical Name ^{2,3,4}	Segment & Word & Phrase	S ISO/NA S ISOBUTANE/NA S ETHYL ALCOHOL/NA S (LIQUID AND ODOR)/PO S DISTINCT(W)ODOR/PO S (VOC OR VOLATILE(W)ORGANIC)
/PO	PO	Physical Description and Odor ⁵	Word	
—	PP	Physical Properties ¹	Word	
—	RG	Regulatory Information ⁶		
—	ST	Stability and Reactivity ¹	Word	S AVOID(S)(SPARK? OR FLAME?)
/SY	SY	Synonyms ^{2,3,4}	Segment & Word & Phrase	S ACETONE/SY S DIACETONE(W)ALCOHOL/SY S DIACETONE ALCOHOL/SY S TOXICITY(S)500(W)PPM(S)HUMAN/TO S TOXICITY(S)500(W)PPM(S)HUMAN/TOX S RAILCAR(W)30(W)KG
/TO	TO	Toxicity ¹	Word	
/TOX	TO	Toxicity ¹	Word	
—	TP	Transport Information ¹	Word	

¹ All textual fields (except Incompatibilities) are contained in the Basic Index and are searchable with proximity (W), (N), (S), and (F) operators as well as Boolean operators (AND, OR, NOT). Suffixes are not available for all fields.

² Searchable in the Basic Index and in the Additional Indexes.

³ All chemical names are indexed as complete phrases, individual words, and chemically significant segments of words. Use /FW to restrict retrieval to the complete term, e.g., S ETHANE/FW to only select ethane as a single word rather than as a segment of a larger chemical term, such as trichloroethane.

⁴ NA contains both the SY and CN fields.

⁵ Searchable as /PO in the Basic Index; searchable as DS= in the Additional Indexes.

⁶ Searchable only in the Additional Indexes.

ADDITIONAL INDEXES

SEARCH PREFIX	DISPLAY CODE	FIELD NAME	INDEXING	SELECT EXAMPLES
AA=	AA	OHS/MDL Record Number	Phrase	S AA=OHSDF945
—	AN	DIALOG Accession Number		
CC=	CC	Chemical Family	Word & Phrase	S CC=ACIDS S CC=ACETIC ACID
CN=	CN	Chemical Name ^{2,4}	Phrase	S CN=SCHOOL BUS NATIONAL CHROME?
EI=	EI	EINECS (EU) Number ⁷	Phrase	S EI=234-722-4
EU=	EU	European Union (EU) Number ⁷	Phrase	S EU=234-722-4
HAZ=	HZ	Hazards Identification	Word	S POISON/HAZ
HZ=	HZ	Hazards Identification	Word	S (RASH AND DIZZINESS)/HZ
NA=	NA	Chemical Name ^{2,4}	Phrase	S NA=ACETONE S NA=DIACETONE ALCOHOL
RC=	RC	Component CAS Registry Number	Phrase	S RC=67-64-1
RD=	RD	Date of Record Creation	Phrase	S RD=19930826 S RD=930826
RN=	RN	CAS(R) Registry Number	Phrase	S RN=7664-93-9
RR=	RR	RTECS Number	Phrase	S RR=WS5600000
SY=	SY	Synonyms ^{2,4}	Phrase	S SY=ACETONE S SY=DIACETONE ALCOHOL
UD=	—	Update	Phrase	S UD=9999
UP=	UP	Date of Record Revision	Phrase	S UP=19970211 S UP=970211
HAZARDS IDENTIFICATION (SECTION 3)				
C1=	C1	OSHA Carcinogen (Y/N) ⁶	Word	S C1=N
C2=	C2	IARC Carcinogen (Y/N) ⁶	Word	S C2=N
C3=	C3	NTP Carcinogen (Y/N) ⁶	Word	S C3=N

ADDITIONAL INDEXES (cont'd)

SEARCH PREFIX	DISPLAY CODE	FIELD NAME	INDEXING	SELECT EXAMPLES
R8= —	R8 RG	SARA 313 Hazard (40 CFR 372.65) (Y/N) ⁶ Regulatory Information ⁶	Word	S R8=Y
TE= TS= WH=	TE TS WH	TSCA 12(b) Export Notification TSCA Status ⁶ WHMIS Classification ⁸	Word Word Phrase	S TE=Y S TS=Y S WH=N

⁷ El= and EU= search the same data.

⁸ Numeric values can be entered in several different ways: directly as a number, i.e., S BP=100.0; in exponential notation, i.e., S BP=1E2. Letter abbreviations are also available: K for thousand, M for million, B for billion, e.g., S BP=0.5K:1.0K. To search a range of values, use a colon between starting and ending values, e.g., S BP=78:79, OR use numeric operators (>, <, >=, and <=), e.g., S 78<=BP<=79.

⁹ Fahrenheit temperature only searchable in the Numerical indexed field; both Fahrenheit and Celsius temperatures are searchable in the Word indexed field.

¹⁰ The abbreviation may be present; CC means Closed Cup.

¹¹ Molecular Formula is not in Hill order.

¹² Incompatibilities section only searchable using ST=. Reactivity searchable in the Basic Index and using ST=.

¹³ In the place of a format number, a format name can also be specified to indicate the format, e.g., TYPE S1/TOX/ALL. The Named Formats available are: TOX (same as format 2), PROP (same as format 3), REG (same as format 7), and HAZ (same as format 22).

¹⁴ The following search fields do not work with KWIC: AP, BP, DN, D2, EV, FP, LE, MP, OD, PH, SE, SG, SL, SM, TR, UE, VD, VI, VO, and VP.

SPECIAL FEATURES

For command descriptions, enter HELP LIMIT, HELP SORT, HELP RANK, HELP MAP online.

SORT	CN, RN	SORT S1/ALL/CN PRINT S5/5/1-24/RN
RANK	All phrase- and numeric-indexed fields in the Additional Indexes can be ranked.	RANK NA RANK BP S4
MAP	NA, RN, SY	MAP RN TEMP S4

PREDEFINED FORMAT OPTIONS

NO.	DIALOGWEB FORMAT	RECORD CONTENT
1	--	DIALOG Accession Number
2	--	Basic Information (Sections 1 and 2) and Toxicity Information (Section 11) ¹³
3	Medium	Basic Information (Sections 1 and 2) and Physical Properties (Section 9) ¹³
4	--	Full Record with Tagged Fields ¹⁵
5	--	Full Record ¹⁵
6	Free	Chemical Names
7	Long	Basic Information (Sections 1 and 2), Regulations and Transportation (sections 14 and 15) ¹³
8	Short	Basic Information (DIALOG Accession Number, OHS/MDL Record Number, Chemical Names, CAS Registry Number, Chemical Family, Composition/Ingredient Information, Date Record Last Updated, Date of Record Creation)
9	Full	Full Record ¹⁵
12	--	Basic Information (Sections 1 and 2), First Aid, Exposure Control and Personal Protection (Sections 4 and 8)
13	--	Basic Information (Sections 1 and 2) and Initial Incident Response (Sections 3, 5 and 6)
14	--	Basic Information (Sections 1 and 2), Toxicity, Physical Properties, Stability and Reactivity (Sections 9, 10, and 11)
17	--	Basic Information (Sections 1 and 2) and Ecological Information (Section 12)
18	--	Basic Information (Sections 1 and 2), Handling and Storage and Disposal (Sections 7 and 13)
22	--	Basic Information (Sections 1 and 2), Hazards Identification (Section 3) ¹³
K	--	KWIC (Key Word In Context) displays a window of text; may be used alone or with other formats

¹⁵ For better TYPed output, SET H 80.

OTHER OUTPUT OPTIONS

For an explanation, enter HELP TYPE, HELP UDF, HELP TAG online.

USER DEFINED FORMATS	Display codes listed in the Search Options tables can be used to customize output.	TYPE S3/NA,TO/1-5
TAG	Output can be displayed with tags identifying each display field.	TYPE S3/5/1-10 TAG
DIRECT RECORD ACCESS	If the accession number of a specific record is known, it can be used to display the record directly.	TYPE 00002005/5 DISPLAY 0044400/CN,RN PRINT 00031964/9

FOR ONLINE HELP:

See HELP FIELDS 332 for searchable fields; HELP FORMAT 332 for output formats; HELP LIMIT 332 for limits; HELP RATES 332 for cost information; HELP SORT 332 for sorts.