BASICS OF SDS AUTHORING WITH SDScribe™ 2021

Congratulations on choosing **SDScribe[™]** as your powerful and affordable safety data sheet authoring tool. Authoring safety data sheets (SDSs) with SDScribe[™] is most efficient if you follow these four steps:

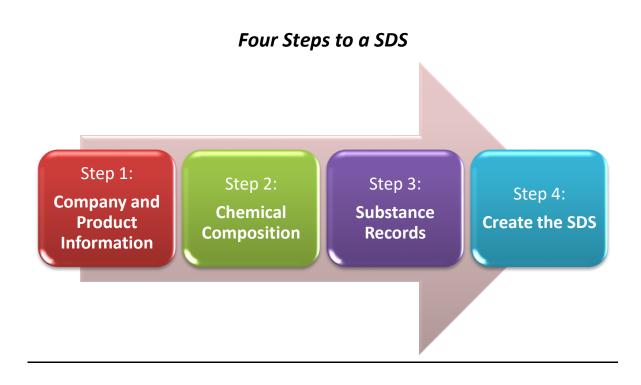


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Disclaimer

These tips are intended to assist you in using SDScribe[™] as an authoring tool for Safety Data Sheets and labels. The examples and other information in this document do not constitute specific recommendations for SDS content. Manufacturers are responsible for ensuring that any SDS or label is accurate and meets all legal requirements. This document is not a complete description of the features and functionality in SDScribe[™]. For additional help with the program,

- Refer to the video guides on our <u>YouTube channel</u>
- Refer to our <u>FAQ list</u>
- Visit our web site

Information is also generally available within the program on individual fields, by hovering your mouse over the field of interest. In the SDS section, you can also select "Background for this section" or "Guide this item" from the <u>Help</u> button pop-up menu. Because we are frequently revising the capabilities and features of SDScribe[™], the descriptions and recommendations in this document may not be fully up-to-date with the latest revision of the program.

Configuration

Activate SDScribe™

Once a payment is made (e.g., via PayPal), we will email the licensee name and the associated license number. Select File (menu) -> Preferences from the menu bar, to display the Preferences dialog. Click on the **License** button to display the registration dialog (see image below) and enter the licensee name and license number, exactly as they appear in the email message. Then click on the **OK** button to dismiss the registration dialog.

If the program indicates that the license number is invalid, and you copied and pasted the number from the email message, try to: (1) backspace over the last character, and re-enter it; or, if (1) does not work, (2) re-enter the full license number from the keyboard.

NOTE: You must also click on **Save** to close the Preferences dialog, or the program will not retain your registration information.

ferences							
Company	Acme						
Address	1234 Main Street						
	Address line 2						
	Any City		Ar	ny State	55555	Country	
Phone	555-555-1234	Fax	Fax	email	email		
Logo			Emergency	555-555-12	234		~
	V	aur	telephone number(s)				-
Sg default Batch prefi:	1		Enter registrat			(Batch, SDS and Substance	records only)
-		_	Enter englished			(Batch, SDS and Substance	records only)
Batch prefi	×		Enter registrat	ion informat	tion	(Batch, SDS and Substance	
-	x	16 formu	Please enter to license thi	ion informat the name an s copy of SD	tion d serial number Scribe™.	provided to you by Hazard	
Batch prefi	×	16 formu	Please enter to license thi	ion informat the name an s copy of SD	tion d serial number Scribe™.		
Batch prefi	×	L6 formu	Please enter to license thi	ion informat the name an s copy of SD	tion d serial number Scribe™.	provided to you by Hazard	
Batch prefi	×	L6 formu	Please enter to license thi NOTE: Both t	ion informat the name an s copy of SD	tion d serial number Scribe™.	provided to you by Hazard	
Batch prefi	×	L6 formu	Please enter to license thi NOTE: Both t	ion informat the name an s copy of SD	tion d serial number Scribe™.	provided to you by Hazard	
Batch prefi	×	16 formu	Please enter to license thi NOTE: Both t	ion informat the name an s copy of SD	tion d serial number Scribe™.	provided to you by Hazard	

Fig 1a Preferences dialog (background) and license entry dialog.

Personalize SDScribe™

From a graphics program, copy your company logo onto the computer's clipboard. Then, from within SDScribe™, select File (menu) -> Preferences from the menu bar to display the Preferences dialog. Right-click into the Logo box, and select "Paste" from the contextual menu. If you haven't already done so, enter your company name, address, telephone, etc. into the Preferences dialog (Fig 1a).

Step 1: Collect Company and Product Information

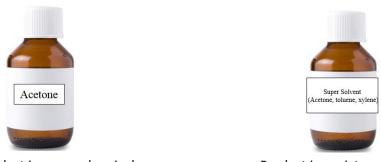
The first step is to have available information that you will need on your company and the characteristics of each product.

- Company name, address, phone number, logo
- Product name and number (if applicable)
- Use of product (e.g., Toilet bowl cleaner)
- Chemical properties of the product
 - Appearance and odor
 - Laboratory testing data, if available, such as: relative density, pH, melting point, boiling point, flash point, viscosity, etc

Step 2: Identify the Chemical Components to List in Section 3 of the SDS

Is Your Product a Pure Chemical or a Mixture?

Ask yourself this question: Is your product a pure chemical, such as Acetone with its very own CAS# or is it a mixture of multiple chemicals, such as Acetone, Toluene, and Xylene, in various weight percentages?





Step 1:

Company and Product

Information

Product is a pure chemical

Product is a mixture of chemicals

Formulation versus Chemical Ingredient List

A common conundrum is whether it is best to start with a formulation/recipe or a chemical ingredient list. There is often a big difference between the two. A formulation lists raw materials with the respective weight percent needed to create the product. It is like a recipe. A raw material could be a pure chemical or a product which is a mixture of chemicals. On the other hand, a chemical ingredient list is just that: a list of each chemical in your product with its respective weight percent. The chemical ingredient list (or some part of it) is ultimately included in Section 3 of the safety data sheet. SDScribe[™] can accommodate either of these situations. It is important to determine which one applies to you.

Inductions: Laundry Detergent			Prof	Product Samker.			
Read Print 10.5 mg 2014		139201		ab.Tasker			
W. 16	- 91	BAY INSTERIAL DESCRIPTION	POINDS	CHECKOFF	ADD WEIGHTS		
55.698	1	DEIONIZED OR TAP WATER	4817.09				
4,000	2	SURFACTANT 1	345.94				
20.000	4	SOFTENER	1729.72				
7,000	5	SURFACTANT 2	605.40				
5.000	6	SSODJUM XYLENESULFONA TE 30	432.43				
0,300	7	D-LIMONENE	25.95				
0.002	8	FD&C BLUE DYE #1	0.17				
5,000	0	DEIONZED OR TAP WATER	432,43				
97.000		MEXING INSTRUCTIONS: Barenisium at 1.80 (Appen, 2 a interve) Add Inputtions in the online Tax - interpretations Notes for ell mesore Bangle en OC	8389.12				
ipsid besorie		PROG TO FILLING BOTTLES SET FUND 43 FROM 1288 10	2000 RP M				
	Calo Colo Termin			Specific Density = 14.002. Density per United at 16.002. p ⁽²⁾ N Solida	1.07 8.48 10.2-13.0 31.4		
a committee	nds to	grams multiply pounds by 453.59 a.z. 453.59 = 31.75 mams					

Fig 1b. Formulation or recipe or batch sheet

A	U	<u> </u>	U
Raw Material	Components (chemical name)	Components (CAS#) 🔻	Concentration 💌
	Methenamine 3-chloroallylochloride		
Super Cleaner XYZ	Trade name: Dowicil 75	4080-31-3	10
Super Cleaner XYZ	Hexamethylenetetramine	100-97-0	4
Super Cleaner XYZ	1,3-Dichloropropene	542-75-6	4
Super Cleaner XYZ	Propylene glycol	57-55-6	2

Fig 2. Chemical ingredients with concentration by weight of Super Cleaner

SDSs of Raw Materials

A very important task, which is often skipped, is to collect the latest version of the SDS of each raw material you use, preferably in an electronic format. It should be in the GHS format, and if you see the GHS pictograms with red borders (see below), this is a good indication that the SDS is in the GHS format. You should also verify the date is recent, preferably 2014 or later. This is a good time to also inspect Section 3 of the SDSs to see if the raw material is a pure chemical or a mixture. This will make more sense as you proceed.

Emergency telephone numb (24h)	er : 800-523-9374 USA +1 610 461 7711 International	
2. HAZARDS IDENTIFICAT	ION	
GHS classification		
Serious Eye Damage -	Category 1	
GHS label elements		
Hazard pictograms/syn	nbols	
*		
Signal Word: Danger		
Hazard Statements:		
H318 Causes serior	s eye damage.	
Precautionary Stateme	nts:	
Prevention	: P280 Wear eye protection/face protection.	

Fig 3. Section 2 of a SDS illustrating GHS pictograms

Assembling a Master Ingredient List

Next, create a list or spreadsheet with columns labeled **Raw Material**, **components (chemical name)**, **CAS#**, **concentration** and **Validated**. This is an important step which will save you time since it will help you keep track of which specific chemical component records have already been completed and verified so you are not wasting time going back to the same record. In the example below, you will note that the Substance records for Dowicil 75 with CAS: 4080-31-3 and Hexamethylenetetramine with CAS: 100-97-0 have been marked Validated.

A	В	C	D	E
Raw Material	Components (chemical name)	Components (CAS#) 🔻	Concentration 💌	Validated 🛛
	Methenamine 3-chloroallylochloride			
Super Cleaner XYZ	Trade name: Dowicil 75	4080-31-3	10	done
Super Cleaner XYZ	Hexamethylenetetramine	100-97-0	4	done
Super Cleaner XYZ	1,3-Dichloropropene	542-75-6	4	
Super Cleaner XYZ	Propylene glycol	57-55-6	2	
Boric Acid	Boric acid	10043-35-3	100	
Acme Cleaner A	Propylene glycol	57-55-6	80	
Acme Cleaner A	Ethyl alcohol	64-17-5	2	

Fig 4. Sample of a Master Ingredient List

You will also note that CAS: 57-55-6 appears in both Super Cleaner XYZ and Acme Cleaner A. So once you have completed the CAS: 57-55-6 and marked it done, you will not need to revisit this record (see below). You will see in SDScribe, there is a **Validated** checkbox in Substance records that you can use. More on this later.



Fig 5. Chemical component view of a Substance record. Validated checkbox is circled in red.

Step 3: Substance Records for Chemical Components and Ingredients

Strategy: Pure Chemical Components and then Mixtures Which Contain Them

There are literally hundreds of thousands of unique chemicals, and SDScribe[™] has almost 100,000 of them! And thankfully for most of you, we have 99% more chemicals in our database than you will ever need. Many manufacturers have successful product lines using 10 or fewer different raw materials (e.g., a few solvents, surfactants, colorants, fragrances). And if you add up the total number of chemicals in all of

your raw materials, there may be 50 or fewer unique ones. So the most time effective way to use SDScribe[™] is to <u>ensure</u> <u>Substance records of your chemical components are complete and marked validated</u>. To save you time, many of the substance records have already been populated for you from imports we have done. However even manufacturers of the same pure chemical will often assign different hazard classifications. So it is important for you to be able to edit even data that is in records that we provide you.

Substance Records are Rich with Data:

- Over 90,000 substance records with CAS #
- GHS classifications, hazard phrases, pictograms, and signal words for over 3,000 chemicals.
- OSHA exposure limits for over 400 chemicals
- Toxicity data in over 400 chemicals
- Cosmetic data (EU Cosing) in over 15,000 chemicals
- EPA Safer Choice Ingredients in over 1,000 chemicals

And as we mentioned earlier, if you have a chemical ingredient list to work from (see Fig 2), you only need a Substance record for each of the chemical ingredients. If you work off formulation or recipe sheets, you will also want to create a Substance record of each raw material/ingredient which lists the chemical components of the particular raw material/ingredient. You will see that SDScribe[™] will carry over the data from chemical as the <u>raw materials</u> themselves are entered as component in Section 3 of the SDS. <u>The database will carry over the chemical-specific data from each of these chemical component records as they are added to the SDS</u>.

In SDScribe[™] 2021, there are three views of a Substance record for you to choose from depending on what you are trying to accomplish. The views present the typical minimum fields to be completed in each record.

Substance Views (see Fig 6-8)

- Chem compnt view 9 tabs for entering chemical component data, which typically have their own CAS#
- Ingred & prod view 5 tabs for entering Ingredients and Raw materials which are mixtures of chemical components
- Full view 28 tabs with all data fields shown, including the Green and Cosmetics tabs

Step 3: Substance Records

No. 2 of 5 listed substances						
Subs * Monoethanolamine	xposure limits Phys-chem props Stability	-reactivity Toxicological ta rmula C2H7NO		compnt view v	ttels butter	
Type Ingredient v Product Pro Cat. Floor stripping agent v	oduct name	of 42 shown	Q No. Product nbr in	iternal (internal)	Help button Displays yellow	
Validated My Achv Add	Synonym Ethanol, 2-amino-	Use Type TSCA name	Mfr/vendor	Created Q 3/30/20 ^	help window	
C 205-483-3	Monoethanolamine	INN name	~	3/30/20	neip window	
	Ethanolamine	INCI name	~	3/30/20		
	Ethanolamine	CSPA dictionary	v	ye/20/2		
	2-Aminoethanol	COSING name	~	3/30/20	3 Guidance	
	Ethanolamine	Chemical name	~ /	~ 3/30/20	Chemical component view: Firefighting	
	MONOETHANOLAMINE	Chemical name	~	5/25/20	What to do here Special hazards	
	Ethanol, 2-amino-	Canada DSL-NDSL	.n	2/29/20	 Describe any hazards specific to the Substance which could result fumes, explosive vapors, etc. 	from combustion, such as toxic
	1-AMINO-2-HYDROXYETHANE	Alternate name	~ /	y 9/7/200	rumes, explosive vapors, etc. What to do next	
	2-AMINO-1-ETHANOL	Alternate name		9/7/200	Click on the next tab ("Exposure limits").	
-	2-AMINOETHANOL	Alternate name	-	9/7/200		
1	¢	×.	ry: Blue: Chem name: Orange: Purple: CAS/EC: Dk red: Prop	> INCI: Green: COSING: o 65: Gray: alt. name.	[Riv. 69.2018]	

Fig 6. Chem compnt view of Monoethanolamine (Identification tab)

No. 1 of 1 listed substances							
dentification Hazards Composit	tion Phys-c	hem props Transport	ation (US)				
Subs* Dowicil 75 **						Q,	Ingred & prod view 🗸 🍹
	Product na	ime				Q , No.	Product nbr internal (internal)
Cat. Preservative	\sim						
Validated My Achv		sed items (optional)					
	Supplier	Dow Chemical Com	pany				
	No.	Product nbr supplier	(supplier)	Purity		~	
	Price	\$0.00 per	0 ~				
		NOTE: For unit cost (u		efer to the Sto	ck tab.		
	Recomm	ended order qty 0	ea.				
							* required to save
		Edit	Navig		Guidance		- required to save
Autosave is turned off-		[N]o data Stoc[k]		< ->	Help Vide		Done Cancel
		Zoom Spell]	Subs or a		Research		

Fig 7a. Ingred & prod view of Dowicil 75 ™ (Identification tab)

osition First aid 1 First aid 2 Firefighting Acci

									Q,	Ing	pred & p	rod vie	w v
		at this Substance: ontains O Is contained in	۲	his Substa	nce is a i	mixture	if thi	s Substance ha	s NO ingred	lients, th	en SKIP	this tal	ble. N
Add	No. 1	Chemical (CIS-N-(3-chloroally)hexami	enter CAS, EC			4	CAS	Type Ingredient	Categ	GHS	Expos	Regs 4	Act
A	2	Sodium bicarbonate				1	44-55-8	Ingredient		No		8	
v	3	Hexamethylenetetramine				1	00-97-0	Ingredient		Avail		8	
	4	Dichloromethane				7	5-09-2	Ingredient		Avail	3	9	
- 1	5	1,3-Dichloropropene				5	42-75-6	Ingredient		Avail	4	8	
ŵ	<												>
\$ compone	ent(s)							Purple	ow: unlinked	t; red-ora	nge row:	lost or i	invalid li

Fig 7b. Ingred & prod view of Dowicil 75 ™ (Composition tab)

ubs* Monoethanolamine		C2H7NO	٩
EPA Safer Choice ingredient			
Functional use Specialized industria	I chemicals 🗸 Ratio	ng Yellow triangle 🗸 🛆	
Caveats: chemical use			
Caveats: TSCA status			
Green Seal	\sim		
	Edit	Navigate Guidan	ce
itosave is turned off.	No data Stock		and an and a second sec
	Zoom Spelli	Subs << < > >> Researc	

Fig 8b. Full view of Monoethanolamine (Green tab)

ecret Nanoforms Non-narcotic and is used to and H2S from
Non-narcotic
and is used to and H2S from
and is used to and H2S from
and H2S from
synthesis tive agents: in
r waving nulsifiers.
in-ionic
sed in wool treatment.
~
other)
NOLAMINE; 2- A
LALCOHOL;
BETA- MINE;
INE; GLYCINOL; ETHYLAMINE:
DXYETHYLAMINE;
INE; THIOFACO EK-1597;
AINE; AINE SOLUTION:
INOETHANOL; 2- v

ntal release Handling-storage Exposu

Fig 8a. Full view of Monoethanolamine (Identification tab)

Done Cancel

~ 🐐

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👔 No. 2 of 5 lis

Stock Hazards 1 Hazards 2 Compo

STEP 3a: Creating a Substance Record for a Chemical Component – 9 TABS

Select: Chem. Compnt view.

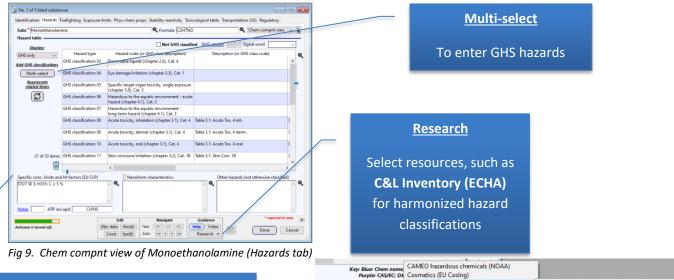
1) Select the Identification tab (see Fig 6.)

- a) Subs (required). Enter a Substance name. Can be a chemical name for a "pure" material (i.e., not a mixture), or a product or generic/trade name for other items. Examples: "Sodium hydroxide" is a chemical name; "mineral spirits", "petroleum spirits", and "solvent naphtha" are generic names; and "Varsol" is a trade name.
- b) **Product** (optional). If this Substance record represents a product either yours or something from another company and you did not already enter a product name in the Subs box, then enter it here.
- c) Formula (optional). If the Substance is a pure chemical, enter the chemical formula; otherwise leave this field empty.
- d) **CAS** (recommended, if available). If the Substance has a CAS number (Chemical Abstracts Service registry number), then enter it here. If the Substance has more than one CAS number, then you can also use the Synonym table (discussed below) to enter all CAS numbers, and place the main CAS number in this field.
- e) **EC** (recommended, if available). If the Substance has an EC number (European Commission registry number), then enter it here. If the Substance has more than one EC number, then you can also use the Synonym table (discussed below) to enter all EC numbers, and place the main EC number in this field.
- f) No. (optional). If you use an internal product number for this Substance, you can enter it here.
- g) **Type** (optional). Indicate whether you use the Substance as an ingredient in your products; as a product; or as both an ingredient and a product.
- h) Cat. (optional). Use the drop-down menu immediately to the right of the "Cat." button to select the type of Substance, if desired.
 Examples of categories are: surfactant, solvent, colorant. (The "Cat." button allows you to customize the categories which will appear in the drop-down menu.)
- i) Validated (recommended) to keep track of records you have already reviewed and determined to be complete. These records will appear in blue text
- j) Synonym table (optional).

a)

2) Select the Hazards tab. (see Fig 9.)

- Enter GHS Hazard Classification(s) for the substance Note: GHS classifications, hazard phrases, pictograms, and signal words for over 3,000 chemicals have been imported into Substance records for you. For additional explanation see <u>Resources</u>.
- i) If non-hazardous, check off the "Not GHS classified"
- ii) Click on "Multi-select" button and select the applicable GHS hazards. Use Ctrl on your keyboard to select multiple.
- iii) Click on "Regenerate related items" button to regenerate related items for the listed hazard classifications.
- iv) Specific concentration limits (SCLs) and M-factors and also nanoform characteristics can be entered



Guidance

Help Video

Agencie

NGOs SDScribe[™] resources

Research -

Companies Government lists ECHA (EU)

FDA online label repository

NIH-NIST-NLM (US)

NIOSH Pocket Guide

National drug code (NDC) directory

EPA (US)

SCLs/M-factors

These will be carried into the SDS component section and can be displayed on the SDS

Persistent-bioaccum

Authorisation list (REACH Annex XIV)

EC inventory as of 2008 (find by EC nbr.)

National help desks for EU Member States

Registered under EU REACH Substances of very high concern (SVHC)

e-toxic

Classification and labeling invent

Endocrine disruptor assessment list

3) Select Firefighting tab

a) Enter Special hazards. These are combustion products, which are often carbon oxides, for organic chemicals.

No. 2 of 5 listed substances entification Hazards Firefighting Exposure I	limits Phys-chem props Stability-reactivity Toxicological table Tra	nsportation (US) Regulatory	_	<u>Stoc</u>	[k] phra	<u>ses</u>	
ubs* Monoethanolamine	Sormula C2H7NO	🔍 Chem compnt view 🗸 🍯					
pecial hazards		<u> </u>		Press but	ton on C	Crtl+k fo	br
				stoc	k phras	es.	
			(i) 4 shown out of 4 stock ph Common phrases Precent	rase(s) for location: "Fire_specific_hazards" (total	phrases: 224). ases will be saved ONLY if your		
			(F)ind text	x Location OAny @Current Fire_sp		are the underlying form will	t which you are w
			Category 1 Firefighting / Special hazards arking from subdatore or matera	the	Examples where used Acetone, Benzene	Lang v	Translated (
			2 Firefighting / Special	Hydrogen bromide gas. Container explosion may occur under fire conditions.		v	
				Hydrogen chloride gas	Hydrochloric acid	~	
			4 Firefighting / Special hazards arising from substance or mixture			~	
		~					
	Edit Navigate Guidance	* required to save	<		Header-click to sort and for other	options or sight-click on rows (> for additional optio
losave is turned off.	No data Stock Tabs <- V -> Help Video Zoom Spell Subs << < > >> Research ¥	Done Cancel	Hide editing options Show	editing options	Guidance Help Video Pa	Action	Close without par

Fig 10. Chem compnt view of Monoethanolamine (Fire Fighting tab)

4) Select Exposure limits tab.

a) Enter the OSHA and ACGIH exposure limits in the table if there are any
 Note: OSHA exposure limits for over 400 chemicals have already been imported into Substance records for you. For additional explanation see <u>Resources</u>.

icatio Mc	listed substances I Hazards Firefighting moethanolamine limits table	Exposure limits Phys-cher	n props Stability-	reactivity Tox	icological tab	le Transportation (US)	Regulatory			Q , Formula C2H7NO	Chem compnt view		Click into cell you edit, and then or	
		Chemical	CAS no. 141-43-5	EC no.	Parameter PEL	Expos. route Inhalation	Value 3 ppm	Source OSHA	Country	Target (DNEL only)	Basis ar OSHA Annotated Table Z-1, www.os		grey box	
1	2 Ethanolamine		141-43-5		PEL	Inhalation ~	6 mg/m3	OSHA	,		✓ OSHA Annotated Table Z-1, www.o:			
	8 Ethanolamine		141-43-5		PEL	Inhalation ~	3 ppm, (ST) 6 ppm	Cal/OSHA	,		VSHA Annotated Table Z-1, www.os	B Edit field: Parameter val	ue	
4	Ethanolamine		141-43-5		REL	Inhalation ~	3 ppm, (ST) 6 ppm	NIOSH	,		✓ OSHA Annotated Table Z-1, www.o:			
1	5 Ethanolamine		141-43-5		TLV® ~	Inhalation ~	3 ppm	ACGIH			 Eye irritation. Skin irritation 			
6	5 Ethanolamine		141-43-5		STEL	Inhalation ~	6 ppm	ACGIH			$_{\rm \lor}$ Eye irritation. Skin irritation $_{\rm \lor}$			
1	7 Ethanolamine		141-43-5		TLV®	Inhalation v	3 ppm, (ST) 6 ppm	ACGIH	, USA		✓ OSHA Annotated Table Z-1, www.o:			
<														

Fig 11. Chem compnt view of Monoethanolamine (Exposure limits tab)

5) Select Phys-Chem Properties tab (see Fig. 12)

Enter as much data as you have on the substance:

- a) State
- b) Appearance/form
- c) **pH**
- d) Molecular Weight.
- e) Melting, Boiling and Flash Point
- f) Relative density/Sg. Type into first cell. The cell to the right will automatically fill in
- g) Solubilities (e.g., in water)
- h) Supplementary info on physical hazard classes (e.g., test results for oxidizing properties) can be added if available
- i) Etc. Click Save

ubs* Monoethan	s Firefighting Exposure limits		S Formula C2H		Chem compnt view ~ 3
ubs intonoetnand	lamine		Pormula C2H		chem compit view V
tate Liquid Appearance Color Odor Odor threshold Melt/freezing pt Boiling pt - range Flammability LFL-UFL Flash point Explosive props.	Cost *F)		Decomp temp Oxdzng props pH Knmtc viscosity Solubilit(ies) log P oct/wat Vapor pressure Evap rate Rel density/Sg	n Femily (Amine SOLUBILITIES: WATER : >= 10 ()))))))))	58 °F)
Auto-ignit temp		٩		integrand & integra	0.00
Struct formula	H2NCH2CH2OH	Q	•		
Solids 0	ct. (applicable paints and inks) /olatiles 0 VOCs minum 0 Zinc for on physical hazard classes	0 Pigment 0 0 Copper 0	Particle characteristics (solids only)	haracteristics	
		Q	Vapor pressure:	0.4 mm Hg @ 20 C [055,058]; 6 .1 [055,058,421,451] (FLASH POINT):	mm Hg @ 60 C [403,055]

Fig 12. Chem compnt view of Monoethanolamine (Phys-chem props tab)

- 6) Select Stability-Reactivity tab.
 - a) Enter Incompatible materials
 - b) Enter Hazardous decomposition products
 - c) Click Save

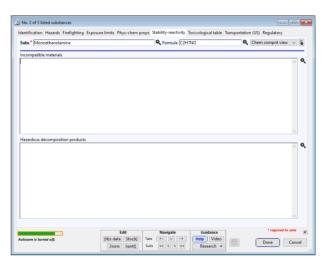


Fig 13. Chem compnt view of Monoethanolamine (Stability-Reactivity tab)

7) Select **Toxicological Table** tab.

This holds the substance-specific <u>toxicological</u> and <u>ecological</u> information that you can paste into the Sections 11 and 12 of the SDS. Consider using the **Quick entry** feature at the top to complete some fields for you.

Note: For information on toxicological and ecological data sources see Resources.

- a) Enter-Oral/dermal/inhalation LD50s/LC50s.
- b) Enter Carcinogenicity.
- c) Enter Ecotoxicity, Etc . . .
- d) Click Save

No. 2 of 5 listed substances						Quick entry
dentification Hazards Firefighting Exposure Subs* Monoethanolamine	9	Formula C2H7N	10	Q Chem c	egulatory ompnt view 🗸 🍹	Select common entries
Not Gits Causified Anete nonsidyetti Quick entry Edd No. Dipic/area of concern 1 Acute toxicity 2 Acute toxicity 3 Acute toxicity 4 Acute toxicity		g mg/kg bw 1 g	0 mg/l vapor 🗌 Ur		v Uhkn I dust-mist Uhkn Time exp	Guick entry Edit Into thresholds Into "grpm" gas Unkn @mg1 uppor
5 Ecotoxicity/persistence and de 6 Ecotoxicity/toxicity 7 Ecotoxicity/toxicity	 LC50 EC50 	~	Cyprinus car Daphnia ma	150 mg/l	28 d 96 h	2 / Spoil: Ecotoxichy/toxichy, Method: LCS0: Route: blank; Species: Lepomis macrochrus (bluegill): Dose: blank; Time: 96 h; Result: blank; Remarks: blank; Ref: blank Topic: Ecotoxichy/toxichy, Method: LCS0: Route: blank; Species: Oncorhynchus mykiss (rainbow trout): Dose: blank; Time: 96 h; Result: blank; Remarks: blank; Ref: bl
8 Ecotoxicity/toxicity	EC50	* not* used for ATE is	Selenastrum	2.8 mg/l	72 h	
Sutosave is turned off.	Edit Njo data Stoc[k] Tabs	Navigate	Guidance Help Video Research +		* required to save	

Fig 14. Chem compnt view of Monoethanolamine (Toxicological table tab)

When measured/experimentally-derived acute toxicity point values are available, you can now enter them here. The program will use the values when it calculates acute toxicity estimates for the product, in the "Suggestions..." dialog in the safety data sheet.

Exclude from ATEmix calculations (e.g., water, sugar).	availab		values (used wh ooint lookup tab ig ATEmix).			
Exposure-protection 2 Phys-chem props Stability-reactivity To	xicological 1	Toxicological 2 To	xicological 3 Toxico	ological table Ecolo	gical Disposa	4 >
Subs * 1,2-BENZISOTHIAZOL-3(2H)-ONE	ৎ	Formula C7H5NO	s	Q Full view	•	
Add No. Topic/area of concern Method/		5 mg/kg bw 🔛 Un 🔲 Unkn 👘 G Exposure rooke Oral	50 mg/l vap 🔄 Unkr Species	Dose/level	♥ Unkn ust-mist ♥ Un Time exp	kn Q
Do not use thresholds to exclude	יר	-	Include as unk in ATEmix calcu			
2 Ecoto components from ATEmix calculations (e.g., if below 0.1 or 1.1 percent. Do not consider the 1-	D -	-	Oncorhynch	0.8 mg/l	96 h	7
3 Ecoto percent threshold for unknowns.	J .	÷	Daphnia ma 🔻	4.4 mg/1	48 h	

8) Transportation tab

b)

- a) If the material is not dangerous according to transportation regulations, then check the Not dangerous goods box.
 - If the material is dangerous according to transportation regulations, enter the applicable:
 - i) UN Number
 - ii) Class
 - iii) Packing Group
 - iv) Proper Shipping Name
 - v) Other information required or appropriate to the intended mode of transport:
 - (1) DOT: US Department of Transportation
 - (2) IMDG: International Maritime Dangerous Goods
 - (3) IATA: International Air Transport Association

No. 2 of 5 listed substances				
dentification Hazards Firefighting	Exposure limits Phys-chem p	props Stability-reactivity Toxicological tab	ole Transportation (US) Regulatory	
Subs* Monoethanolamine		C2H7NO	Chem compnt view	~ 4
Not dangerous goods				
DOT (US)				
				^ (
*PROPER SHIPPING NAME (IATA): E	thanolamine			
*UN/ID NUMBER: UN2491				
*HAZARD CLASS: 8 SUBSIDIARY RISI				
	K: NORE PACKING GROUP: III			
*LARFLS RECUIRED: Corrosive				~
IMDG				
				~
IATA				
				^
				>
	Edit	i Navigate i Guidance	* required to	
utosave is turned off.	Edit [No data Stoc]k]	Navigate Guidance Tabs <- v >> (Help) Vid		sove Cancel

Fig 15. Chem compnt view of Monoethanolamine (Transportation tab)

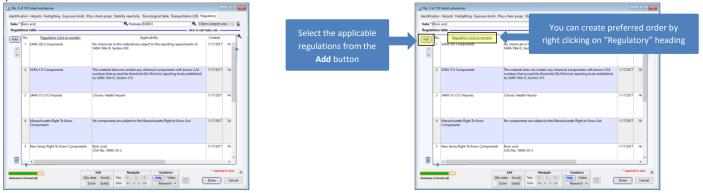
9) Select Regulatory tab.

- a) Enter Federal and state regulations/lists.
- b) Make sure format is consistent with CAS-No. first before CAS (e.g., CAS-No. 60-00-4).

1 New Jersey Right To Know Components Common name: Ethanolamine CAS number: 141-43-5 6/9/201

c) Put in preferred sort order by right clicking on **Regulation**.

d) Click Save



STEP 3b: Creating a Substance Record of a Mixture - 5 TABS

Select: Ingred & Prod view. Tip: reference the safety data sheet for the product.

1) Select the Identification tab.

- a) Subs (required). Enter the product name
- b) **Product** (optional). If this Substance record represents a product either yours or something from another company and you did not already enter a product name in the Subs box, then enter it here.
- c) No. (optional). If you use an internal product number for this Substance, you can enter it here.
- d) **Type** (optional). Indicate whether you use the Substance as an ingredient in your products; as a product; or as both an ingredient and a product.
- e) Cat. (optional). Use the drop-down menu immediately to the right of the "Cat." button to select the type of Substance, if desired.
 Examples of categories are: surfactant, solvent, colorant. (The "Cat." button allows you to customize the categories which will appear in the drop-down menu.)
- f) Validated (recommended) to keep track of records you have already reviewed and determined to be complete. These records will appear in blue text
- g) Supplier (visible by selecting Full view)

No. 1 of 1 listed substances						
dentification Hazards Composi	ion Phys-chem props Tr	ansportation (US)				
Subs [*] Dowicil 75 ™				0		Ingred & prod view 🗸 🤪
	Product name			~	No. Produc	tt nbr internal (internal)
Cat. Preservative	~					
Validated My Achv	For purchased items (op	tional)				
	Supplier Dow Chemic	al Company				
	No. Product nbr	supplier (supp	lier) Purity	~		
	Price \$0.00 p	er 0	Sold in bulk			
), refer to the Stock tab			
	Recommended order q	ty O ea.				
		Edit	Navigate	Guidance		* required to save
lutosave is turned off.	[N]o dat	a Stoc[k] Tabs	<- v ->	Help Video		Done Cancel
	Zoon	n Spel() Subs		Research *		

Fig 16. Ingred & prod view of Dowicil 75 ™ (Identification tab)

2) Select the Hazards tab.

- a) Enter **GHS Hazard Classification**(s) for the substance
 - i) If non-hazardous, check off the "Not GHS Classified"
 - ii) Click on "Multi-select" button and select the applicable GHS hazards. Use Ctrl on your keyboard to select multiple.
 - iii) Click on "Regenerate related items" button to regenerate related items for the listed hazard classifications.

🔞 No. 1 of 1 listed substar	nces			
Identification Hazards (Composition Phys-chem	props Transportation (US)		
Subs [®] Dowicil 75 ™			Ingred & prod vi	iew 🗸 🍯
Hazard table				
Display:		-	lassified GHS version Signal word Warn	ing ~
GHS only 🗸	Hazard type	Hazard code (or GHS class description)	Description (or GHS class code)	Q
Add GHS classifications	GHS classification 01	Flammable solids (chapter 2.7), Cat. 2	Combustible dust	^
Multi-select	GHS classification 02	Acute toxicity, oral (chapter 3.1), Cat. 4		
Regenerate related items	GHS classification 03	Sensitization, skin (chapter 3.4), Cat. 1		
S	GHS hazard 01	H228	Flammable solid	
	GHS hazard 02	H302	Harmful if swallowed	
	GHS hazard 03	H317	May cause an allergic skin reaction	
	GHS pictogram 01	GH502	Flame	
	GHS pictogram 02	GH507	Exclamation mark	
	GHS precaution 01	P210	Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.	,
		< .		>
Specific conc. limits and	M-factors (EU CLP)	Nanoform characteristics	Other hazards (not otherwise classified	
Notes ATP ins	/upd	 Q V 	Q Combustible dust.	 Q
Autosave is turned off.		Edit Navigate [N]o data Stoc[k] Tabs <- >> Zoom Spell] Subs < >>	Guidance Help Video Research •	ed to save

Fig 17. Ingred & prod view of Dowicil 75 ™ (Hazards tab)

3) Select the Composition tab.

- a) Enter **Components** for the substance
 - i) Click on the [Add] button to add a row, or double-click in the empty area in the table (below any components that are already listed).
 - ii) "Slow click" (click once, then again slowly) into the "Chemical (enter CAS, EC or name)" column for the new row, and enter one of the following items:
 - (1) A chemical name, like the IUPAC name; OR
 - (2) A product or trade name; OR
 - (3) A chemical synonym, like the INCI name or the INN name; OR
 - (4) A Chemical Abstracts Service number (CAS number); OR
 - (5) A European Commission registration number (EC number).
 - iii) For convenience, you can enter just a few characters at the start of a chemical, product, synonym or other name you don't need to enter the whole name.
 - iv) Click away from the table cell; or use the [Enter] or [Tab] key on your keyboard. This action causes the new cell content to register.
 - v) If the program finds one or more matching Substance records, it will present a confirmation dialog for you to select the record.
 - vi) If the program prompts you to "add as new", then the component you would like to add could not be found. Ensure that you entered the correct chemical name, CAS number, or other identifier.
 - vii) Enter the minimum and/or maximum concentrations of the component by "slow clicking" into the Min% and Max% columns, respectively, and entering a percentage value. Use dimensionless weight/weight percentage values only (w/w%); do not use weight/volume values (w/v%).
 - viii) "Inequality" symbol columns are available just to the left of the Min% and the Max% columns, if you wish to indicate that the entered concentration value is less than (<), less than or equal (<=), greater than (>), etc. the actual concentration value.
 - ix) The **GHS** column of the table will indicate
 - (1) Avail the substance has been classified as GHS hazardous (i.e., has at least one hazard)
 - (2) No the substance has been classified as not GHS hazardous (i.e., has no hazards)
 - (3) TBD the substance has not been classified yet. It is recommended that you review the record and attempt to determine if the substance is GHS hazardous

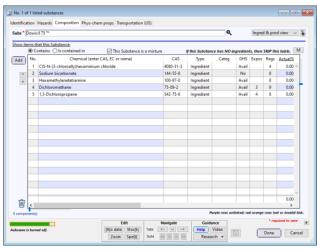


Fig 18. Ingred & prod view of Dowicil 75 ™ (Composition tab)

4) Select Phys-Chem Properties tab

Enter as much data as you have on the substance:

- a) State
- b) Appearance/form
- c) **pH**
- d) Melting, Boiling and Flash Point
- e) Relative density/Sg. Type into first cell. The cell to the right will automatically fill in
- f) Solubilities (e.g., in water)
- g) Etc. Click Save

ubs* Dowicil 75™ tate Solid ↓	× Divided solid. Bulk density: 0 g/ci	m2	Sublimation	Q	Ingred & prod view v
Appearance Color Odor Odor threshold Melt/freezing pt Boiling pt - range Flammability LFL-UFL Flash point Explosive props. Auto-ignit temp	Organization of the start density. (0) give provider, Off-white (1) organization of the start of the sta	0 0 0 0	Decomp temp Oxdzng props pH Knmtc viscosity Solubilit(ies) log P oct/wat Vapor pressure Evap rate Rel density/Sg Abs density	16.5.7 °C (2943 °F) Literature No data available. (3.1 Measured No data available. Water > 70 % at 25 °C (77 °F) E Sog Poor 0.3 Measured (3.0007 Pa at 25 °C (77 °F) Estim No data available. No data available. No data available.	C Method A6 Miscible with
Solids 0	No data available. ct. (applicable points and inks) olatiles 0 VOCs 0 Pigment 0 minum 0 Zinc 0 o on physical Hazard classes 0 0 0		Rel vapor dens Particle characteristics (solids only)	No data available.	
tosave is turned off.	Ldit [Nie data Steck]	Q	Navigate	Guidance Help Video	* required to save

Fig 19. Ingred & prod view of Dowicil 75 ™ (Phys-chem prop tab)

5) Transportation tab

- a) If the material is not dangerous according to transportation regulations, then check the "Not dangerous goods" box.
- b) If the material is dangerous according to transportation regulations, enter the applicable:
 - i) UN Number
 - ii) Class
 - iii) Packing Group
 - iv) Proper Shipping Name
 - v) Other information required or appropriate to the intended mode of transport:
 - (1) DOT: US Department of Transportation
 - (2) IMDG: International Maritime Dangerous Goods
 - (3) IATA: International Air Transport Association

			Toxicological table		
Subs* Substance - chemical name		Sormula	Chemical formula	Chem compnt	view 🗸
Not dangerous goods					
DOT (US)					
UN Number:					^
Class:					
Packing Group:					
Proper Shipping Name:					
Reportable quantity (RQ):					
Marine pollutant: Poison inhalation hazard:					
Poison innalation nazārd:					
IMDG					Ŷ
UN Number:					^
Class:					
Packing Group:					
EMS Number:					
Proper Shipping Name:					
IATA					\vee
UN Number:					
					<u></u>
Class:					
Class: Packing Group:					
Class: Packing Group:					
Class: Packing Group:					
Class: Packing Group:					~
Class: Packing Group:					u la com
Class: Packing Group: Proper Shipping Name:	Edit	Navigate	Guidance		v ed to save
Class: Packing Group:	Edit [N]o data Stocki	Navigate			ed to save

Fig 20. Ingred & prod view (Transportation tab)

STEP 4: Create the SDS using Templates and/or Stock Phrases

About SDS Templates

You will see a number of red colored rows in the safety data sheet list, when you open SDScribe[™] (see Fig 23). These are SDS templates. You can click on the **All [J]** button to reduce the list to SDS templates, SDSs or archived SDSs.

An SDS template is a partially completed SDS for a particular type of product, such as an automotive cleaner, paint, laundry detergent, carpet and fabric cleaner, personal care product, etc. A number of sections, such as First Aid, Exposure controls/personal protection, and Toxicological information will include a variety of statements for you to choose from based on the hazard of the material and other considerations.

In SDS templates you will see double slashes and hyphens (i.e., //----- and -----//) surrounding text, which indicates instructions for you to read and then delete prior to generating the SDS. You will also see sentences to choose from depending on the hazard of the material (e.g., Serious eye damage/eye irritation 1).

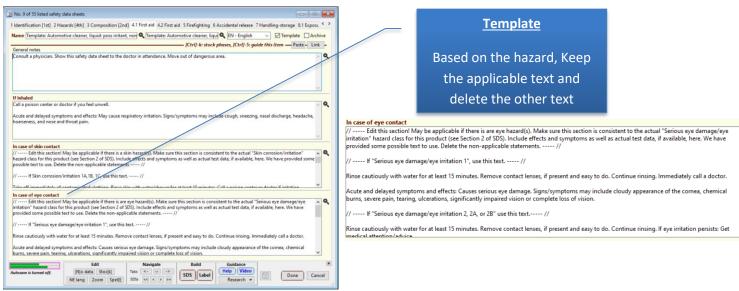


Fig 21. An SDS template for automotive cleaner

About Stock Phrases

Stock phrases are phrases for you to choose from specific to the text box topic you are in. Like templates, these are meant to save you time from typing. To open the applicable list, click on the **Stoc[k]** button or **Ctrl** + **k** on your key board. You can use existing ones and create new ones to the library using the + button.

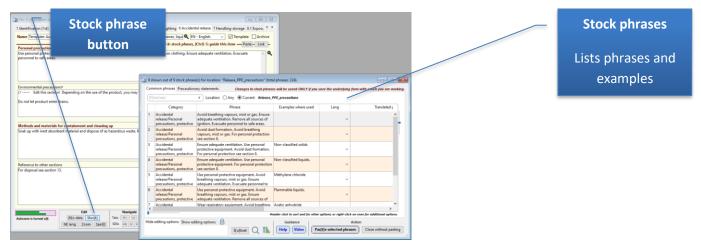


Fig 22. Stock phrases

Completing a SDS

Now that you know about SDS templates and stock phrases, let's get to work completing a SDS.

- 1) Click on the [N]ew SDS button
- 2) Select either **New blank SDS** or **New SDS from template** (and select a SDS template which best matches the type of product and its hazards)

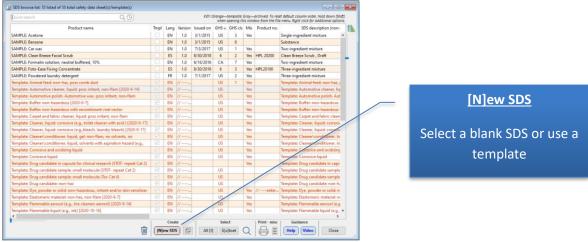
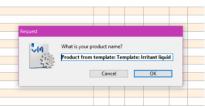


Fig 23. SDS browse window showing red SDS templates

3) Enter the **Product name**



4) Novice users should use the **Guide** to tour the product and/or walk them step-by step in a logical order to complete a SDS.

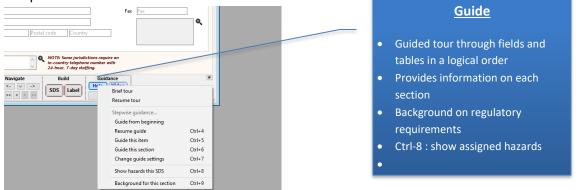


Fig 21. Guide button with Guide selections, Show hazards, and regulatory Background on each section

- 5) The basic order to complete an SDS is
 - a. Section 1
 - b. Section 3
 - c. Section 9
 - d. Section 2
 - e. Section 4 to Section 16

6) Add the components in Section 3

- a. Add either chemical components or Raw materials and weight percentages
- b. Ingredients which are mixtures will present the **Formulation wizard**. Enter the concentration of the ingredient in the product. The chemical components will be added and their chemical data carried into the actual SDS.

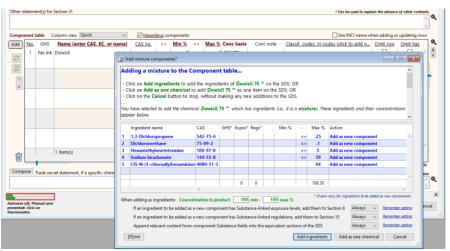
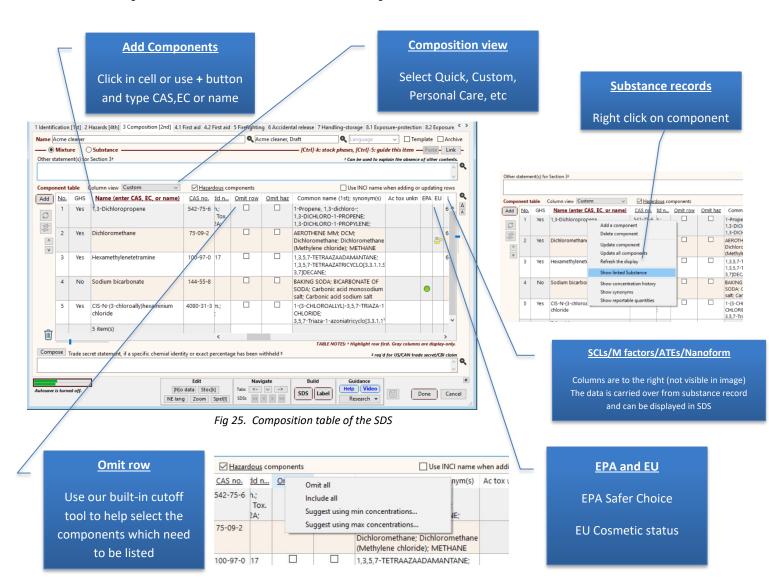


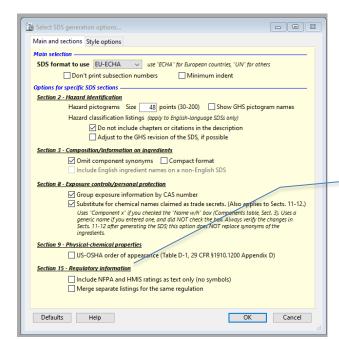
Fig 24. Dowicil 75 ™ which is a mixture is added using built in Formulator wizard



7) Add physical and chemical data in Section 9

- a. Physical state (required for some GHS/UN versions and countries)
- b. Appearance
- c. Odor
- d. Laboratory testing data, if available, such as: relative density, pH, melting point, boiling point, flash point, viscosity, etc.
- e. New: Supplemental info on physical haz classes. A template for EU-suggested content is added
- f. If applicable, physical hazards, such as flammability, oxidizer and explosive will need to be added in Section 2. These are typically based on actual lab tests
- g. When you build the SDS by clicking **SDS** button at bottom, a "Select SDS generation options dialog window gives users option to keep the order of content as US-OSHA order if desired

No. 14 of 20 listed s	afety data sheets				
8.2 Exposure-protection	on 9 Phys-chem props [3rd] 10 Stability-read	ctivity 11.1 Toxicological 11.	Toxicological 11.3 Toxicological 1	2 Ecological 13 Dist < >	
Name SAMPLE: Foto	o-Ease Fixing Concentrate	Three-ingredient mixture	🔍 ES - Spanish* 🗸 🗌]Template Archive	Applicability
		[Ctrl]-k: :	tock phases, [Ctrl]-5: guide this ite	m — Paste - Link -	
Physical state ^{†‡}	Liquid 🗸 🗴	Deserves	GB/UN-3-4-5/US /UN-6-7-8 /EU/E	Q	
Appearance*	Green-yellow liquid.	Decomp temp*t			Note that some content is to
		Oxidizing props	No data available.	Q.	Note that some content is to
Color†‡		Q pH*1‡	5.1	Q	certain GHS/UN versions and
Odor*†‡	Mildly pungent	Kinmtc viscosity	11 No data available.	Q.	
Odor threshold*	No data available.	Solubility*!#	Fully soluble in water.	Q.	countries.
Melt/freezing pt*†‡	<0°C	Kow*1‡	No data available.	٩	
Boiling pt-range*†‡	>100°C @ 760 mm Hg	Vapor press*#	1 mm H20 @ 25°C	٩.	
Flammability*1‡	Product is not combustible or flammable	Evaporation rate	* No data available.	Q	
LFL-UFL*#	Product is not combustible or flammable.	- ·			
LFL-UFL (G	deprecated) No data available.	Density or Sg*†‡	1.34 @ 20°C	Q.	
Flash point*#	No data available.	Rel vapor dens*	No data available.	<u>م</u>	
Explosive props	Product is not explosive.	Particle characteristics		Q	Supplemental info on physical haz classes
Auto-ignt tmp*†‡	No data available.	Q			
nuto igit unp	to data avanable.				
Aerosols		Other/furthe	r safety characteristics‡	Q	A template for EU-suggested content is added
Corrosive to r	metals		5,		
Desensitized e	explosives				
	ble gases when in contact with water				
Explosives					
Flammable ga		vigate Build	Guidance Help Video		
Flammable so	the second se	sDS La	Research VILLE	Done Cancel	
Gases under p				ii.	
Organic pero	xides				
Oxidizing gas	ies				
Oxidizing liqu					
Oxidizing soli					
Pyrophoric lic Pyrophoric so					
Self-heating	anus				
Self-reactive					



SDS appearance/order

In Section 9, keep the order of content as US-OSHA order if desired

8) Add GHS hazards in Section 2 / Suggestion Wizard

- a. Select GHS version (e.g., US, 4, 5, 6, EU) to present the applicable GHS hazards and statements
- b. If the hazards are known, enter them with the either the dropdown or Multi-select
- c. Use the **Suggestion Wizard** to suggest <u>health hazards</u>, such as "Acute toxicity, oral 4" or "Eye damage/irritation, 1" based on the hazards of the components and concentration
- d. If applicable, enter any <u>physical hazards</u>, such as Flammable liquid, Cat 3. These should be consistent with physical data entered in Section 9
- e. Use Regenerate related items button to regenerate related items for the listed hazard classifications.
- f. Use Check to identify inconsistencies in H and P statements

$\overline{}$	GHS version							GHS Haz	ard tabs		
🔯 Add new saf	e.g., US, EU, 4,5,6				-						
1 Identification [1st] 2 Hazards [4th] 3 Composition [2nd] 4.1 First aid 4.2 First aid 5 I	refighting 6 Accidental release 7	Handling-storage 8.1 Exposure-prot	ection 8.2 Exposure < 3		Та	bs '	for: <u>Picto</u>	<u>grams, Hazard</u>		
Name Acme cl	eaner	🔍 Acme cleaner, Draft	🔍 Language 🗸 [Template Archive		200	4 D,	ecaution	ary statement		
	omplete "3 Composition" and "9 Phys-chem props" sections FIRST.			Paste - Link -		am		ecaution	ary statement.	î de la centre de la	
	DOUS product, select the GHS version. For a NON-hazardous product, ch										
GHS version	US Class acc to [US] OSHA (29 CFR 1910.1200)	~ Q (OR No GHS hazards Signal w	ord []	sific	ations	Pictogra	ams Hazard statem	ents Precautionary statements	3 pictogram(s)	
	rd classification(s). Classifications Pictograms Hazard statements	Precautionary statements 0 clas	ssification(s)		No	. <u>Cod</u>	e (reor	dert)	Description	Wng. sign	
Select manu	estions ally (needed for inc. hazards).	HS classes (Item 2, at left)	Description (click transl	A A	1		GHS06	5 Skull and cr	ossbones		Sugg Cat.
	ct one v				2		GHS08	B Health haza	rd	٠	Sugg
2 Bagabarata	pictograms, H/P-				3	a	ssificat		Iazard statements Precautiona	ry statements 2	5 precautionary
stmts., and sig	nal word.						No.	Code (reorderi)	Descriptio	n	
	Dimpleteness.			~		v		P201	Obtain special instructions b		
4. Check for co				>			-		De net her die webitelie efst	and the set has	-
	heck TABLE NOTES: † C statement (for items not regulated under SDS requirements, such as Artic		Drange text: not in this GHS version. G				2	P202	Do not handle until all safety been read and understood.	precautions have	e
		\	· · · ·	<u></u>			3	P261	Avoid breathing dust/fume/gas/mist/vapors/	spray.	
Other hazards (not resulting in classification)+			+ required if present		tî	7	<			
For mixtures wit	h ingredient(s) of unknown acute toxicity, statement of percentage(s)*			+ required if present							
				Q							
Autosave is turned		Navigate abs <- v -> DSs << > >> SDS ba	bel Guidance Help Video Research V	# Done Cancel							

Fig 26. Composition table of the SDS

Add Hazards

Known: Multi-select or dropdown Components: Suggestion Wizard or Copy Completeness/Quality: Add H/P , Check

Suggestion Report

Detailed report of the hazards of the components with suggested health hazard

6.1 SKIN CORROSION/IR	RITATION	^
	rritation (chapter 3.2), Cat. 2: Signal word: Warning	
orrosion/irritation classification,	with cut-off values [2], for relevant ingredients which include a GHS skin the relevant ingredients with a classification of <u>Skin corrosion/irritation (chapter</u>	
3.2). Cat. 2 total to 64 percent, w	hich is 10 percent or more, and therefore this classification prevails.	
o one percent ("relevant ingre	cludes components where the concentration in the product is greater than or equal dients [*]). The component concentration used in the calculation does not take into than [*] , etc. mathematical inequality symbols that are entered in the Component table.	
which the additivity approach n	sider the possibility that there are skin-corrosion or skin-irritating components for may not apply, such as strong acids (pH 2 or less), strong bases (pH 11.5 or nydes, phenols, and surfactants. When any skin-corrosive components of this	
ature are present in the product lassification. Similarly, when skin- ar more, the product as a whole r component). If you are unsure who	at levis of 1 percent or more, the product as a whole may have a Cet. 1 "intating components of this nature are present in the product at levies of 3 percent may have a classification of Cet. 2 or 3 (depending on the category of the ether a component is non-additive for corrosion, then you may want to consult with a	
nature are present in the product lassification. Similarly, when skin- or more, the product as a whole r component). If you are unsure whe chemist.	irritating components of this nature are present in the product at levels of 3 percent product and the component of the 12 of 3 (depending on the category of the ether a component is non-additive for corrosion, then you may want to consult with a product of the consult of the corrosion of the component of the consult with a second of the component is non-additive for corrosion.	*
nature are present in the product classification. Similarly, when skin- or more, the product as a whole r	irritating components of this nature are present in the product at levels of 3 percent may have a classification of Ge.1 2 and 3 (depending on the category of the ether a component is non-additive for corrosion, then you may want to consult with a 	*

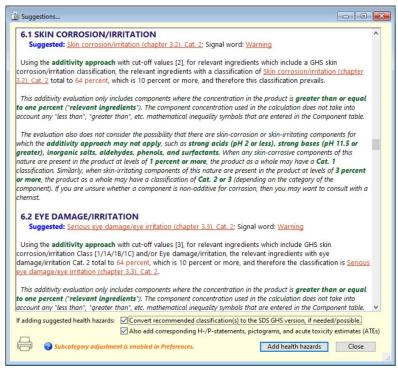


Fig 27a. Suggestion report showing recommended "Skin corrosion/irritation, Cat 2" and "Serious eye damage/irritation, Cat 2"

Acute toxicity determinations

The Suggestion report recommends an acute toxicity classification for a mixture-type product using:

1) The concentrations of "relevant"^[5] components, from the Hazard table on SDS Tab "3 Composition"; and

2) Either:

- Point values from a lookup table, based on the acute toxicity classifications for individual components, as entered on the "Hazards 1" tab of the linked Substance record for the component; or
- **Measured** toxicity values for the individual components (e.g., LD₅₀, LC₅₀), as entered on the "**Toxicological table**" tab of the linked Substance record

Acute tox. (measured)*		Oral	5152 mg/kg bw	📃 Unkn	Dermal	0 mg/kg bw 📃 Unkn
No thresholds	Inh	0 ppm	/ gas 📃 Unkn	0 mg/l	vap 📃 Unkn	0 mg/l dust-mist 📃 Unkn

Component acute

toxicity measurements (on the "Toxicological table" tab of the linked Substance record).

If measured values are present for a component, the program will use those values in preference to acute toxicity classifications.

The report calculates an acute toxicity point estimate for the product as a whole (ATE_{mix}), using one of two equations:

· For components with unknown acute toxicity totaling less than 10 percent

$$ATE_{mix} = 100 / \sum (C_i / ATE_i)$$

• For components with unknown acute toxicity totaling **at or above** 10 percent

$ATE_{mix} = (100 - \sum C_{unknown}) / \sum (C_i / ATE_i)$

In these equations, C_i is the concentration for any individual component. $C_{unknown}$ is the concentration of a component with unknown acute toxicity. **ATE**_i is the toxicity point value or experimental measurement for a component. The report performs the calculations **separately** for the different **routes of exposure** (oral, dermal, inhalation of gas, inhalation of vapor, and inhalation of dusts-mists).

Lookup tables then enable the program to identify the appropriate acute toxicity classification for each route of exposure, from the calculated ATE_{mix} values.

Where the Suggestion report has performed acute toxicity calculations of this type, the ATE_{mix} values appear in the summary section at the top of the report. Details of the calculations, including intermediate values, appear further down, in the body of the report.

If the user checks the second box on the "Suggestions..." dialog ("Also add corresponding H-/P-statements, pictograms, and acute toxicity estimates (ATEs)"), the program will place the calculated ATE_{mix} values into the Acute toxicity field, on the "11.1 Toxicological" tab.^[6]

In general, SDS authoring is most time-efficient if you start with an appropriate SDS template. Stock phrases can also be helpful, especially if you have relevant examples. If you start with a blank SDS, you can copy text from a SDS template or even linked components by simply clicking on the "**Paste**" button (see image below)

Name Product name	Q Description	Q Language	Template Archive
Specific target organ toxicity - single exposure	[Ctrl]-k: stock pho	ises, [Ctrl]-5: guide this item — Paste [t]o	oxicity iter s - Paste - ink -
эреспистанует огдан тохиску - зандне ехрозоге	Select a componen	t or a template from which to paste inform	nation
	[F]ind text	x 48 of 48 listed	Show: Components [Ctrl]-1 Templates [Ctrl]-2
	Type	Name or	description (from where to paste)
Specific target organ toxicity - repeated exposure	Template	Template: Animal feed: non-haz, poss	comb dust
	Template	Template: Automotive cleaner, liquid:	
	Template		tive wax: poss irritant, non-flam [2020-9-14]
	Template	Template: Buffer: non-hazardous (2020	
	Template	Template: Buffer: non-hazardous with	recombinant viral vector
Aspiration hazard	Template	Template: Carpet and fabric cleaner, li	quid: poss irritant, non-flam
	Template	Template: Cleaner, liquid: corrosive (e.	.g., toilet cleaner with acid) [2020-9-17]
	Template	Template: Cleaner, liquid: corrosive (e.	g, bleach, laundry bleach) [2020-9-17]
	Template	Template: Cleaner\conditioner. liquid,	gel: non-flam, no solvents, no aspiration hazard
	Template	Template: Cleaner\conditioner. liquid,	solvents with aspiration hazard (e.g., mineral oil)
Endocrine disrupting properties (toxicological)+	Template	Template: Corrosive and oxidizing liqu	nid
	Template	Template: Corrosive liquid	
	Template	Template: Drug candidate in capsule for	or clinical research (STOT- repeat Cat 2)
	Template	Template: Drup candidate sample: sm	all molecule (STOT- repeat Cat 2)
		<	,
Other information			OK Cancel
			OK Cancel
			×
Edit	Navigate	Build Guidance	

Fig 27b. SDS templates and linked substance records can be accessed by clicking on the Paste button

In addition, it is useful to know that data in Substance records is carried into the SDS or available to be pasted into them as you author the SDS. This is why we recommend identifying the relevant Substance records and validating them ahead of time as was mentioned previously. Some additional suggestions relevant to Sections 4-16 are listed below.

9) Section 4 -First Aid

Make sure the first aid is consistent with the P-statements relating to first aid.

10) Section 5 - Fire-fighting measures

As you enter components in Section 3, text in the "Special hazards" box of the linked components will be carried over to save you time.

11) Section 8 - Exposure controls/personal protection

As you enter components in Section 3, exposure limits of the linked components will be carried into the Exposure table of the SDS to save you time. Right click on the "Omit" button above the table to omit exposure limits with the "omit row" checked in Section 3.

ire	e limi	ts table Separate BEI® value	s			— [Ctrl]-k: s	tock	phases, [Ctr	l]-5: g	uide this item —	Paste -	Li
)[No.	Chemical (click to re-order)	Omit	CAS no	EC no	Paramet	or	Exposure (oute	Value	Sourc	e
	1	Formaldehyde		Mark the Omit all	Omit column.			in	~	0.3 ppm	ACGIH	
	2	Formaldehyde	C	Omit non					~	0.75 ppm		
ſ	3	Formaldehyde	_	Omit if co	mponent om	itted in Section	on 3	n	~	0.016 ppm	NIOSH	
j	4	Formaldehyde		50-00-0	200-001-8	PEL-C	~	Inhalation	~	0.1 ppm	NIOSH	
	5	Methanol		67-56-1	200-659-6	PEL-TWA	~	Inhalation	~	200 ppm, 260 mg/m3	OSHA	
	6	Methanol		67-56-1	200-659-6	PEL-TWA	~	Inhalation	~	200 ppm	Cal/O	

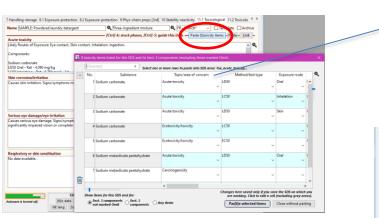
Fig 28. Exposure limit table

12) Section 10 - Stability and reactivity

As you enter components in Section 3, text in the "incompatible materials" box of the linked components will be carried over to save you time.

13) Section 11 - Toxicological information

As components are entered in Section 3, their toxicity data will be available to be pasted into the SDS by clicking on the **Paste [t]oxicity button**. Highlight the rows you wish to paste. There is also a slider on the bottom to reduce the selection.



Toxicity data

The "Toxicological table" tab of the linked substance record holds the data that will be presented by pressing "Paste [t]oxicity" button

Interference Mathod/text type Exposure route Rat Dose/level T 1 Acate toxicity LD50 Oral Rat 4000 mg/kg T 2 Acate toxicity LC50 Inhalation Rat 5,750 mg/l 2 h 3 Acate toxicity LC50 Inhalation Rat 5,750 mg/l 2 h 4 Ectoxicity LD50 Skin Rabbit >2000 mg/kg 2 h 4 Ectoxicity/toxicity LD50 Skin Rabbit >2000 mg/kg 2 h
I Acute toxicity LD50 Onal Ret 4000 mg/kg 2 Acute toxicity LC50 inhalation Ret \$750 mg/l 2 h 3 Acute toxicity LD50 Skin Rabbit \$2000 mg/kg 2 h
3 Acute toxicity LD30 Skin Rubbit >2000 mg/kg
v v v v v
4 Ecotoxicity/toxicity LC50 Lepomis ma 300 mg/l 96 H
v v v v
5 Ecotoxicity/toxicity C50 Daphnia ma 265 mg/l 48 h

Fig 29. Toxicological tab in the SDS showing the Paste [t]oxicity button

14) Section 12 - Ecological information

Similar to Section 11, as components are entered in Section 3, the ecotoxicity data of the linked components will be available to be pasted into the SDS by clicking on the **Paste [t]oxicity** button.

15) Section 14 - Transportation information

In this section/tab you provide guidance concerning the transportation of the product by road, air, rail, or sea. The focus of this tab is on shipments within the US, but it may be applicable to other jurisdictions.

Г				 Shipping suggestions
	props [3rd] 10 Stability-reactivity 11.1 Toxicological 11.	2 Toxicological 11.3 Toxicological 12 Ecological 13 D		Uses algorythm to predict shipping hazard classes
Name SAMPLE: Foto-Ease Fixing Conc Use US format for transportation ([Ctrl]-k:	Es - Spanish* Template A stock phases, [Ctrl]-5: guide this item Paste L		
DOT (US)† Find shipping inform Not applicable.	mation Show reportable quantity Marine p	ollutant list + highly recommen	ided	Reportable Quantities
			×	US may require this information
IMDG+ Find shipboard emer Not covered.	rgency schedules (EMS) for fires/spillage	+ highly recommen	nded Q	
			~	Marine Pollutant
IATA† Not covered.		† highly recommen	nded	
L			×	 EMS Info/ Water/ Vessel
	Edit Navigate Build ata Stoc[k] Tabs <	bel Guidance Help Video Research V	# ancel	

are	Had	ed, fre cards'						(no peci	ect a al state t yet fied on SDS).	<	-	Gela Melt	Gas Liquid Solid /Treezing p	Physical state (solid, liqui on tab: "Phys/chem prop	Only show
			ons dialog suffications on this :	505		Calaci	a abai	al a	ate: © Soli	۹.	louid	0.64		ecified 🖉 n.o.s. only 🗲	in the hazm
AVA	iLA8L	E - 61	nin DOT options, can be	shown beim	r if seile	cted								ELLER (P. R. S. Only -	
	cass		GHS class descri		-	ns + F (solid)		-	DOT (gas)					Note	Highlighted r
Fla	m. Lie	1.2	Flammable liquids (C.	4.191. Cat. 2	N	IA	3		NA			1	none	0004 ·	equivalents
- 54	in Init	1.2	Skin comosion/irritation	(C.4.4), Cat.	no	ine .	non	e i	none	0.0	D-P	none	none	Not dangerous	the hazma
ST	OT S	11	Specific target organ to	sicity (single	no	ine .	non	e	none	110	ne	none	none	Not dangerous	table. Searc
Aa	p. To	< 1	Aspiration hazard (C.4	13), Cat. 1	no	ne	nor	e	none	ne	ne	none	none	Not dangerous	on DOT cla
Aqua	tic Ac	ste 1	Hazardous to the	aquatic		,	. 9		none						PG, and/or E type, for
Lqua	tic Ch	ronic	Hazardous to the	aquatic		9			none				none	reference 49 CFR	highlighte
1														/	rows.
			a <mark>t table</mark> 12 listed of 3594 total opt	ion/st:			more tha	n one	option coul	d be as	cepta		HS selection	N 🔍	Search for a
	Sym		Proper shipping nan		Class/d	_) nbrs	PG	-		_	c provisions	Piges	ptro Ag non-bulk	hazmat list independen
1	G	Alcoh	olates solution, n.o.s., in	alcohol	3	~ U	N3274	п	3.1			18/2	154	202 4	without usi
2	G	Alcoh	ols, flammable, toxic, n.	0.5.	3	~ U	N1996	1	- 3,6.	1 -	18	2. T11, TP2,	154	292	the GHS
3		Alcoh	ob, n.o.s.		3	~ U	N1997	1	- 3		172	IB2, T7, TP	L 154	292 0	classification
4	6	Aldeh	ydes, flammable, tooic, i	0.0.5	3	~ U	NL998	1	- 3, 6.	1 -	18	2. T11, TP2,	154	202	the upper li
5		Aldeh	ydes, n.o.s.		3	v U	NL909	п	- J		1B2,	T7, TP4, TP	8, 154	1	
6	6	Amin	es, flammable, corrosive	8.0.5. OF		v U	N2775	п	v 3,4		18	2. T11, TP1,	154	292	Highlight o
7		Chilor	osilanes, flammable, cor	TOSÍVE,	3		N/105	п	- 3, 8			L T11, TP2,	Non		row that be
8		Exten	8.0.3.		3	- 9	13272	п			1	T7, TP1, TP			describes y
9		Ether	. n.o.s.	w a web t	able	dana.				+		T7, TP4, TP			product; th
_	ŧ.		h	azard class option (only	sificat	tion is	listed	as a	n	Help					click on th Select butb (You can al

Shipping suggestions dialog.

16) Section 15 - Regulatory information

As you enter components in Section 3, "Regulations" in the linked components will be carried over to save you time. **Merge** and **Omit** buttons are available to help you edit the text.

You will likely want to include a Disclaimer. You will want to include a version number and issue and print date. Press the "**Build SDS**" button

No. 9 of 9 listed safety data sheets			- • •		
12 Ecological 13 Disposal 14.1 Transport (US) 14.2 Tra	nsport (EU) 15.1 Regulatory 15.2 Regulat	ory 16 Other Build SDS Build SDS no	n-English GHS L、 < >		
Name SAMPLE: Powdered laundry detergent	Chree-ingredient mixture	Q FR - French* ∨ □1	emplate Archive		
	[Ctrl]-k:	stock phases, [Ctrl]-5: guide this item	- Paste - Link -		
Other information / revision history+		+ required for EU/EEA, GI			
			^ Q		Disclaimer
			~	-	
Further information (disclaimer) ⁺ DISCLAIMER: The information above is believed to be	accurate and represents the best informat		+ required for Mexico we make no 🔥 🍳		
warranty of merchantability or any other warranty, ex use. Users should make their own investigation to det NAME] be liable for any claims, losses, or damages of damages, whatsoever arising, even if [COMPANY NA	press or implied, with respect to such infor ermine the suitability of information for th any third party or for lost profits or any sp	rmation, and we assume no liability re- neir particular purposes. In no event sha ecial, indirect, incidental, consequentia	ulting from its II [COMPANY		
			-		Documentation tracking
Preparation information		/			
			~ Q	· ·	
			~		
Version 1.0 Revision	Supersedes	Issued on 7/1/2017 Print date	7/1/2017		
Autosove is turned off. Edit [N]o data Stoc[k] NE lang Zoom Spel[]	Navigate bild Tabs <-	Guidance Help Video Research v	# Done Cancel		
				1	

Fig 30. Other tab in the SDS

18) Building the SDS

Pressing the "Build SDS" button presents a yellow SDS formatting dialogue window for changing the format of the SDS, size of the logo, etc

	B select SUS generation options	
	Main and sections Style options	UN or ECHA format
English SDS format UN last build 7/14/2021 09:54 To save to disk: File -> Save (in the		
File Edit View Insert Style Colors Paragraph Format Tools	SDS format to use UN vertex for European countries, 'UN' for others	
👔 😂 🗇 🖪 🚱 🚳 🕸 🤔 🗠 👓 🔍 👖 🖬 🕓 🔟	Options for specific SDS sections	
SDS_indtTxt_04 🗸 Arial 🗸 10 🗸 🛚 🗌 🖓 🖌 🖳		
b • • • • • • • • • • • • • • • • • • •	Hazard pictograms Size 48 points (30-200) Show GHS pictogram names	
	Select SDS generation options	
Safety Data Sheet		
SAMPLE: Powdered laundry detergent	Main and sections Style options	
SECTION 1: Identification	ØiRebuild style sheets —	
SECTION 1: Idenutication	This box MUST be checked to update fonts, font sizes, and section headers (using the options below) when there is an existing SDS in the word processing area.	
1.1 GHS Product identifier	If you have already customized styles on an existing SDS in the word processing area (Format -> "Style	
Product name SAMPLE: Powdered laundry detergent	sheets"), AND you wish to keep those changes, then UN-check this box.	
Floduct name SAWIFLE. Fowdered launury detergent	The header style and logo scaling options (below) do NOT depend on whether this box is checked or not.	
1.2 Other means of identification	Font options	
No data available.	Use an alternate font (default is Arial): Arial	Colored and boxed
	Depending upon which font you select, you may need to adjust header margins monually.	
1.3 Recommended use of the chemical and restrictions on use Powdered laundry detergent	Reduce standard font sizes by 0 v points Case correction (English SDSs only)	headings
	Applies to principal font styles only: Select zero to obtain default font sizes	
1.4 Supplier's details Build SDS	Section header options	
Name	SECTION: Sample header	
Page 9 9/9 Line 32, Col 1		Logo size
	Use colors: Text color Background color Border color	
Edit Navigate Build Guidance	Border rectangle 1 v pts. Additional spacing 4=0.063 or higher to add space)	
Autosave is turned off. [N]o data Stoc[k] Tabs <- V -> SDS Lahal Help Video	Header style Standard	
NE lang Zoom Spel(1) SDSs << > >> C EN - English	Company logo	
FR - French*	Logo scaling 0 percent (zero for actual size, or range 20-200)	
Fig 31. Yellow SDS formatting window		
rig 51. Tenow 505 joinnatting Willdow		
	Defaults Help OK Cancel	
	Defaults Help OK Cancel	

19) Export the SDS

Select Save As to save the SDS in a .doc file.

🔯 No. 9 of 9 listed safety data sheets
12 Ecological 13 Disposal 14.1 Transport (US) 14.2 Transport (EU) 15.1 Regulatory 15.2 Regulatory 16 Other Build SDS Build SDS non-English GHS L < >
Name SAMPLE: Powdered laundry detergent Q Three-ingredient mixture Q FR - French* V Template Archive
English SDS format UN last build 7/14/2021_10:05 rg.
File Edit View Insert Style Colors Paragraph Format Tools Select "Save as" to save as a .doc file
Save as
Save as Template
nber Preferences
555-123-1234 (8 am - 5 pm CST)
Page Setup Print Preview Ctrl+Alt+P ntification
Print Ctrl+P
Print Merge s defined by the US Consumer Product Safety Act and which are used as intended (typical
Geta Full Mindaux Cetting Trequency), are exempt from the OSHA Hazard Communication Standard (29 CFR
being provided as a courtesy to help assist in the safe handling and proper use of the product.
2.1 Classification of the substance or mixture GHS classification in accordance with: (US) O SHA (29 CFR 1910.1200) - Eve damage/irritation, Cat. 1
- Skin corrosion/irritation, Cat. 2
< ×
Page 9 9/9 Line 32, Col 1 NUM CAPS
Edit Navigate Build Guidance Autosave is turned off. [N]o data Stoc[k] Tabs >> NE lang Zoom Spel[i] SDS << >>>

Fig 32. SDS editing and export

Additional Features of SDScribe

Guide Wizard

Tip: To obtain assistance as you complete the SDS entry fields, use the **Help** button, which is located at the lower right on the SDS entry form (see figure below).

Clicking on the Help button displays a pop-up menu offering:

- A "Brief tour" item, to familiarize you with the basics of navigation and data entry. The program will offer this tour automatically when you open your first new (blank) SDS. Thereafter you must select "Brief tour" from the Guide button to view the tour.
- A "floating" guide window (Error! Reference source not found.) which walks you field-by-field through the S DS entry form, in a logical order for completing the SDS. Select "Guide from beginning", "Resume guide", or "Guide this section" from the pop-up menu, to display the guide window.

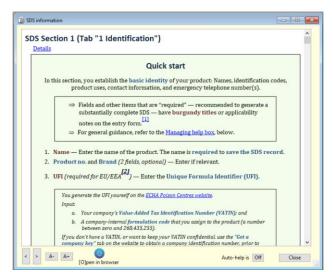
pecial protective actions for fire-fighters		
Vear self-contained breathing apparatus for firefighting if necessary.		^
	Brief tour	
	Resume tour	
	Stepwise guidance	
urther information	Guide from beginning	
lse water spray to cool unopened containers.	Resume guide	Ctrl+4
	Guide this item	Ctrl+
	Guide this section	Ctrl+6
	Change guide settings	Ctrl+
	Show hazards this SDS	Ctrl+
Edit Navigate Build	Background for this section	Ctrl+9



If inhaled	
// Edit this section! Many flammable liquids contain solvents which can cause dizziness or drows	in and an analysis in the first of the first
Make sure this section is consistent to the actual hazard class(es) and H-statements of the product (se	
symptoms as well as actual test data, if available, here. We have provided some possible text to use. D	
// if "Specific target organ toxicity, single exposure, Cat 3" and "H336 May cause drowsiness or d	First aid if inhaled
Pamous to feach size learn astignt warm and at each le hearthing is irregular as stanned aires artificial ea	
In case of skin contact	product.
// Edit this section! May be applicable if there is a skin hazard(s). Make sure this section is consist	
hazard class for this product (see Section 2 of SDS). Include effects and symptoms as well as actual tes	
possible text to use. Delete the non-applicable statements //	Notes/instructions (from the field contents):
	1. Edit this section! Many flammable liquids contain solvents which
// If Skin corrosion/irritation 1A,1B, 1C, use this text //	can cause dizziness or drowsiness and/or respiratory irritation if inhaled.
Take off immediately all contaminated clothing. Mach with plenty of coap and water for at least 15 m	
	Make sure this section is consistent to the actual hazard class(es) and H-
In case of eye contact	statements of the product (see Section 2 of SDS). Include effects and
// Edit this section! May be applicable if there is are eye hazard(s). Make sure this section is consi	
irritation" hazard class for this product (see Section 2 of SDS). Include effects and symptoms as well as	
provided some possible text to use. Delete the non-applicable statements //	 if "Specific target organ toxicity, single exposure, Cat 3" and "H336
// If "Serious eye damage/eye irritation 1", use this text //	May cause drowsiness or dizziness."
	Cancel
Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. O	
Edit Navigate Build	Guidance
Autosave is turned off. [N]o data Stoc[k] Tabs <- > ->	Help Video
NE lang Zoom Spel() SDSs << < >>>	Research V Done Cancel
rectary zoom spellij sos s s s s	

Guide window.

- Information on an individual field, by clicking to place the cursor into the field, and then selecting "Guide this item".
- A "Show hazards this SDS" item, to display the GHS hazard classifications (from SDS Section 2) in a separate window. You can keep this window open as a reminder, while you work on the SDS form.
- A "Background for this section" item, which displays applicable US-OSHA, UN, European Union, and Health Canada guidance, plus program notes for the currently-displayed SDS section (Error! Reference source not f ound.).



Background for this section (from the Guide pop-up menu)

Customizing hazard (H-) and precautionary (P-) statements

Some hazard and precautionary statements include square brackets [.....], ellipsis (...) or slashes (/), which may indicate that the statement(s) need to be completed by the user. Complete these statements in the hazard table with appropriate instructions for your product. For example, you might indicate the proper type of fire extinguisher to use, or what type of medical assistance to seek.

Additionally, you can create one or more custom precautionary statements for each precautionary (P-) code. For example, you might create four or five different "P501" statements, each indicating a different product disposal recommendation. You can use the customized statements in place of standard statements for each of the SDSs that you create.

- 1. Go to File (menu) -> Customize P-statements. The program will present a dialog with standard P-statements in the upper list (Figure 1).
- 2. Select the **GHS rev** for the SDS (e.g., "US") to obtain the correct selection of standard P-statements.
- 3. If desired, use the "Quick find" code or name boxes to narrow the standard items in the upper list.
- 4. Double-click; highlight and click the arrow; or click and drag a P-statement into the lower list. Then customize the new P-statement text in the lower list. You can create multiple custom P-statements.

When you have custom precautionary statements, the program will prompt you to select the appropriate one as it adds P-statements to the hazard table.

IS rev.	P-code	Standard precautionary P-statements	
s ~	P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.	^
	P411	Store at temperatures not exceeding °C/ °F.	
	P411+P235	Store at temperatures not exceeding °C/ °F. Keep cool.	
	P412	Do not expose to temperatures exceeding 50 °C/122 °F.	
	P413	Store bulk masses greater than kg/ Ibs at temperatures not exceeding *C/ *F.	
	P420	Store away from other materials.	
	P422	Store contents under	
v	P501	Dispose of contents/container to	_
v	P502	Refer to manufacturer/supplier for information on recovery/recycling.	~
	<		>
\downarrow	Code search	Text search x 1 selected Double click an item in the upper list to copy to lower list (button, or drag). Single click to edit statements in	the lower lis
\downarrow	P-code	Your customized precautionary (P-) statement	
1	P-code P301+P312	Your customized precautionary (P-) statement IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.	the lower lis
1 2	P-code	Your customized precautionary (P-) statement	the lower lis
	P-code P301+P312	Your customized precautionary (P-) statement IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.	the lower lis
	P-code P301+P312	Your customized precautionary (P-) statement IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.	the lower lis
	P-code P301+P312	Your customized precautionary (P-) statement IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.	the lower lis
	P-code P301+P312	Your customized precautionary (P-) statement IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.	the lower lis
	P-code P301+P312	Your customized precautionary (P-) statement IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.	the lower lis
	P-code P301+P312	Your customized precautionary (P-) statement IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.	the lower lis

Figure 1: Customize precautionary statements dialog.

Creating labels (end-user GHS and shipping)

To build the text and images for a label:

- 1. Click on "Label" tab of the SDS data entry form (Figure 34).
- 2. Enter shipping label information, such as proper shipping name, UN number, hazard class(es), lot number, net weight, expiration date, and up to three DOT-style graphic shipping labels.¹

NOTE: The label names which appear in the "Shipping labels" 1, 2, and 3 drop-down menus represent the file names of labels stored on disk, in the "/SDScribe/Database/Resources/DOT_labels" folder. You can augment or replace these graphical image files as you wish.

¹ Some of these items also can be entered or edited on the "14.1 Transport (US)" and "14.2 Transport (EU)" tabs. Page 28 of 36

3. Click on the "Generate label text" button. The program will generate a label of the type you request in the word processing area, in the lower portion of the form.

This document can be edited in and printed from the word processing area on the form. You can also save the document externally on disk, as a Word (.doc) file.

When you save the SDS record using the **Save** or **Done** buttons, the program will also save the generated label as part of the record.

1.1 Transport (US) 14.2 Transport	EU) 15.1 Regulatory 15.2 Regulatory 16 Other Build SDS B	aild SDS non-English GHS Label FDA label Notes
lame SAMPLE: Acetone	🔍 Single-ingredient mixture	Q EN - English → Template Archi
UN number UN1090 Trans	port hazard class(es) - 3	Paste - Link
lacards ("DOT" labels) 1 label-	-flammable-liquid.png - 2 Select graphic file name	 ✓ 3 Select graphic file name
Proper Shipping Name		
Acetone		<u>^</u>
		Net wt Exp on 00/00/00
iHS label format GHS-DOT		
a second and a second	Colors Paragraph Format Tools	•
	 % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % %	and the second sec
LBL_H_stmt		
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LBL Huttert V AAA N P Acme 12345 Main S Any City Any Phone (24h) (5 Shipping ne UN no. Class DANCEP	a v v v v v v v v v v v v v v v v v v v	
LEL Hutter Addition Addition Addition Additional Additi	rreet State 55555 15) 555-1224 ime Acetone UN1090	First aid Six: Wain of with scap and j Free Transford you we per
LBL.H.stmt V A4	rreet State 55555 15) 555-1234 Ime Acetone UN1090 3 (II)	First aid Sin: Wath of with none and Eyes Arma forward y with point physical measurement of the second of the measurement of the second of the second of the measurement of the second of the second of the measurement of the second of the second of the second of the measurement of the second of the second of the second of the measurement of the second

Figure 34: Generated label in the word processing area, "Label" tab of the SDS entry form.

Determining health hazard classifications in products that are mixtures

Evaluations for hazard classifications in products which are mixtures can be a complex task. The evaluations can involve adding the percent concentrations of "relevant" ingredients (present above minimum thresholds, which individually fall into the hazard classification) to determine whether the mixture as a whole also has the same hazard classification. The mixture may fall into a different category (severity) level than some of the ingredients, as well. The table below (found in <u>OSHA Appendix A TO §1910.1200—Health Hazard Criteria (Mandatory)</u> is an example of evaluating a mixture for the hazard classification Skin corrosion/irritation. In this case, if the concentration of the sum of the ingredients that individually have Category 1 designation is over 5 percent, then the mixture as a whole can be classified as Skin Corrosion Category 1. In this case, extreme pH (acid or alkaline) can also cause the mixture to be classified as Skin Corrosion Category 1.

The **Suggest** button in SDScribe[™] performs many of these evaluations for you, so that the recommendations it makes takes ingredient classifications and concentrations (and pH in this case) into account. For these evaluations to work properly, it is important that you enter concentrations into the Components table as accurately as you can.

Table A.2.3: Concentration of ingredients of a mixture classified as skin Category 1 or 2that would trigger classification of the mixture as hazardous to skin (Category 1 or 2)

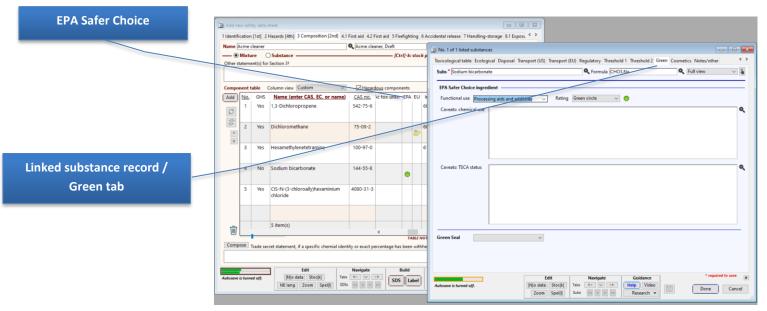
Sum of ingredients classified as:	Concentration triggering classif	cation of a mixture as:		
	Skin corrosive	Skin irritant		
	Category 1	Category 2		
Skin Category 1	≥ 5%	≥ 1% but < 5%		
Skin Category 2		≥ 10%		
(10 x Skin Category 1) + Skin Category 2		≥ 10%		

For more information concerning hazard evaluation (for OSHA), refer to:

OSHA Appendix A to §1910.1200—Health Hazard Criteria (Mandatory) OSHA Appendix B to §1910.1200—Physical Criteria (Mandatory)

Green Products

EPA Safer choice ratings are found in the Green tab of the Substance record. The EPA rating is also displayed in the SDS components under the EPA column



Cosmetics / Personal Care

Cosmetic ingredient information is found in the Cosmetics tab of the Substance record. The EU Cosmetic Ingredient status (allowed, prohibited, restricted) and INCI name are also displayed in the SDS components under the EU and INCI name column

	EU Cosmetic Ingredie	ent				g 6 Accident	al release 7 Handling-storage 8.1 Expos.	
	status (allowed,		ubstance	Acme cle	aner, Draft [Ctrl]-k: st	ock phases,	👔 No. 1 of 1 listed substances	
			ction 3†			+ Can	Toxicological table Ecological Disposal Transport (US) Transport (EU) Regulatory Threshold 1 Threshold 2	
	prohibited, restricted	d)					Subs* Sodium bicarbonate Q. Formula CH03.Na	🔍 Full view 🗸 🎽
			umn view Custom ~	Hazar	dous components	Use	EU cosmetic ingredient (CosIng)	
	Add	_	Name (enter CAS, EC, or name)	CAS no.	INCI name(s)	EPA EU	Reference no. 37736 Function V Abrasine, buffering, deodorant, oral of	are, skin protecting 🔥 🔍
	C	1 Yes	1,3-Dichloropropene	542-75-6			Status - Edit Last updated 10/15/2010 - -	~
	INCI name		romethane	75-09-2	Dichloromethane	₽	Chemical name, IUPAC name(s), or description	~ Q
			iethylenetetramine	100-97-0	Methenamine			v
			n bicarbonate	144-55-8	Sodium bicarbonate	•	INCI name Sodium bicarbonate INN name Sodium bicarbonate	્ લ
			CIS-N-(3-chloroally)hexaminium chloride	4080-31-3	Quaternium-15		EU pharm. Natrii hydrogenocarbonas	<u>्</u>
			chioride				Notes Restrictions on use Citation	
Lii	nked substance record	/					^ Q	~ Q
	Cosmetics tab		5 item(s)					
	cosmeties tab				TABL	E NOTES: + Hig		
		Heue secto	et statement, if a specific chemial identi	ty or exact p	ercentage has been w	ithheld ‡		
	Autosave is	turned off.	Edit Navigate Build Gui [M]o data Stoc[k] Tabs Stoc Stoc Help				Edit Navigate Guidance	* required to save
		_	NE lang Zoom Spel[] SDSs	< < >		Res	Autosove is turned off. [Pi]o data Stock[] Tabs €- · <th>Done Cancel</th>	Done Cancel

Inventory and Production Manager

As an affordable add on to SDScribe[™], we offer Inventory and Production Manager, a powerful tool for inventorying your raw materials and finished products, preparing batch and recipes sheets, and even purchase orders.

Inventory Features

- In the same software as SDScribe[™]! Save time not having to install more software.
- Quick inventory maintains part and ingredient (raw material) stock levels for your warehouse.
- Set reorder levels for parts and ingredients, and generate reorder reports.
- Automatically generate multiple purchase orders from parts and ingredients that are below reorder levels, or generate individual purchase orders by selecting parts or ingredients.
- Create production batches that allocate against raw materials stock, and place product into finished goods stock.
- Generate batch sheets (BOMs) for the workers to use during production.
- Calculate per-bottle costs (including parts, ingredients, labor, and markup) of a production run.
- Maintain batch history including lot numbers, task dates/times, spillage, and remarks.

Substance name	Туре	CAS	Stocked	On hand	Units	Reorder	New batch	Unit cost	Stk value est	Creat
4-CHLORONITROBENZENE	Ingredient	100-00-5	Stocked 👻	322.089	kg 👻	2,000.000	0.000	\$24.96	\$8,039.34	6/27/2 ^
ALPHA-CYCLODEXTRIN	Ingredient	10016-20-3	Stocked 👻	0.000	•	0.000	0.000	\$0.00		6/27/2
COBALT SULFATE HEPTAHYDRATE	Ingredient	10026-24-1	Stocked 👻	28.896	kg 👻	0.000	0.000	\$0.00		6/27/2
Dronabinol in sesame oil in soft gelatin capsule	Ingredient	1972-08-3	Stocked 👻	15.898	kg 👻	0.000	0.000	\$32.99	\$524.49	9/23/2
Acephate	Ingredient	30560-19-1	Stocked 👻	20.000	L 🕶	30.000	45.000	\$9.85		7/11/2
Hydrocodone & isoquinoline alkaloid 15 mg/du	Ingredient	125-29-1	Stocked 👻	625.000	mg 👻	850.000	0.000	\$0.00		9/23/2
Acetophenone	Ingredient	98-86-2	Stocked 👻	68.000	L 🕶	75.000	0.000	\$14.25	\$969.00	7/11/2
Bromophenol blue	Ingredient	115-39-9	Stocked 👻	0.000	•	0.000	0.000	\$0.00		9/2/20
Bromate	Ingredient	15541-45-4	Stocked 👻	0.000	-	0.000	0.000	\$0.00		7/11/2
Bromoacetyl bromide	Ingredient	598-21-0	Not stocked 📼	0.000	bbl	0.000	0.000	\$0.00		9/17/2
Bromo-p-toluic acid, 97%	Ingredient	6232-88-8	Stocked 👻	0.000	fl oz ft3	0.000	0.000	\$0.00		3/24/2
ACETONITRILE WITH 0.1% TFA	Ingredient	75-05-8	Stocked 👻	265.037	q	0.000	0.000	\$0.00		4/3/20
Benzoic acid, 2-hydroxy-5-[[{8-hydroxy-3,6-disulfo	Ingredient	68003-34-9	Stocked 👻	7.000	gal	10.000	0.000	\$3.19		6/4/20
Sulfuric acid	Ingredient	7664-93-9	Stocked 👻	0.000	kg L	0.000	0.000	\$22.61		7/12/2
					lb					
					m3					
					mg ml					
					pt					
					qt					
					ton-l ton-s					
					tonne					
					ug					
					ul					
										-
	•									•

Batch and Formula Management

From designing a new formulation to the actual manufacturing and bottling of your product, this very affordable functionality will keep you organized and save you precious time.

- Create a new batch record. SDScribe[™] can make a complete clone a previous batch, create the ingredients from a Substance record, or allow you to create a completely new bill of materials (BOM, or "batch recipe") and instructions.
- 2. If desired, scale the batch to a different size. SDScribe[™] recalculates ingredient amounts and part quantities, in your selected units of measure.
- 3. Allocate the ingredients and parts needed for the batch against existing inventory. SDScribe[™] automatically converts between warehouse stock units and batch units as necessary, and warns when stock levels are insufficient to produce the batch.
- 4. Print a batch sheet for production workers to follow, logging the ingredient lots, time spent on each task, spillage, and observations.
- 5. Upon entry of batch sheet information, SDScribe[™] calculates batch and per-filled-container costs based on parts and ingredient costs, labor, and an optional percent mark-up. SDScribe[™] can also attach a scanned copy of the completed batch sheet.
- 6. Place the batch product into stock. SDScribe[™] converts between batch units of measure and stock units as necessary

	paration		o's Phosphate Buffer		Q Bat	_	lling	20302.143	3/2/20	rev. Rvsn 20 prep	. 00/00/0	Original	00/00/00	~ t
-	h size: Ca		L Actual	0.000 (0.00%)	٩	74		0 lb	~	0 calc./		0 act. fille	_	rchi
	uid	nosphate bujje	rea saurie (Densj: 0.54	i lo/gal, (state):	~ _	G		0.00)/00/00	_	Plannin	-	
ems In	struction	s Evaluation	Notebook Label	Batch items tal	ble (ingredients	- ра	rts)		Recipe-	2	~ 0	se Chemic	al name	
Add	M	/ Ing/Part	Iter	<u>n</u>	Amt	Ur	nits	lb	gal	Cost ea	per	Cost ext	I.	•
٨	1	Ingredient	Sodium chloride		8	g	\sim	.017		\$0.00	~	\$0.00	[Sg]: [/	
v	2	Ingredient	Potassium phosph	ate Monobasic	.2	g	\sim			\$0.00	~	\$0.00	[Dens	Ľ
	3	Ingredient	Sodium phosphate	dibasic	1.15	g	\sim	.002		\$0.00	~	\$0.00	[Dens]:	
\bigcirc	4	Ingredient	Potassium chloride		.2	g	\sim			\$0.00	~	\$0.00	[Sg]:	
Check	5	Ingredient	Water/Aqua/Eau		1	L	\sim	2.197	.264	\$0.00	~	\$0.00	[Dens]:	ц.
	Print co	itch sheet [lar ist summary ost summary												
163	Print ar	alytical result	s											
To ivtry							_	2.21	.26			\$0.00	8.34	1
1 00 1		1			<			2.21	.20			30.00	0.04	
	VOCs Ad	tual 0.	00 g/L Regulatory	0.00 g/L				KEY: BL				olvent; Red-n try). Rt-click		
	Ingredier	its 0.00		%] + Parts	0.00 + Labor	_	0.00	·	0.00 <u>x N</u>		0.0 %= S		0.00	
+ Misc.		Amt	0.00 =Total	\$0.00	Unit total	s	\$0	0.00 /cont	ainer	\$0.00 /18	S	0.00 /lb wit	h markup)
					Naviga									

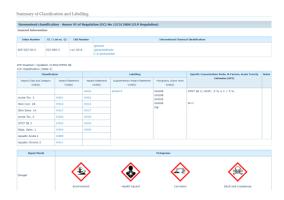
Learn more by going to our website.

Some Resources

GHS Hazard Classification Data for Section 2

The European Chemical Agency (ECHA) maintains a database of the harmonized classification and labeling approved by the European Union. Chemicals can be found by entering the CAS or EC number. Much of the data has been imported into SDScribe Substance records for you. <u>ECHA C&L Inventory</u>

	CL Inventory Notifications submitted/updated by: 14 Ju	ıly 2021				
	Names and numerical identifiers Substance name: Numerical Ill1-30-8 Identifier: Discriminator All	Contains v	Classification de <u>Hazards:</u> <u>Search opera</u>	Physical Health Environmental		
Open the result	View all substances Searched for: '111-30-8'				Search Clear all	
	Name O glutaral glutaraldehyde 1,5-pentanedial 605-022-00-X	EC/List no. 203-856-5 111-30-8	Classification Acute Tox. 3 Skin Corr. 18 Skin Sens. 1A Acute Tox. 2 STOT 5E 3 Resp. Sens. 1 Aquatic Acute 1 Aquatic Chronic 2	\$ \$ \$ \$	Source Harmonised C&L	•



Exposure Limit Data for Section 8

We recommend entering exposure limits in the linked Substance record for each ingredient (or for the product itself, if the product is not a mixture), prior to entering ingredients in the Components table (SDS Section 3). Then, when you add the ingredients to the Components table, the program will offer to copy these limits from the linked Substance to Section 8.

Some sources of exposure limit data:

NOTE: Web addresses change over time, and you may need to perform a web search if the link is broken.

Occupational exposure limit references

Occupational exposure limits (OELs) are intended for the protection of healthy workers; they are not intended to apply to the general public, which can include sensitive populations such as infants, the elderly, or the infirm. OELs are based on repeated daily exposures over a working lifetime. They are normally averaged over an 8-hour workday and serve to protect against acute and chronic health effects.

									/	OSHA and Cal/OSHA
Exposu	re lim	its table Separate BEI® values	5			- [-[],	phases, reary-s, ge		T PALE T	
Add	No.	Chemical (click to re-order)	<u>Omit</u>	CAS no.	EC no.	Parameter	Exposure route	Value	Sourc	PEL-C (ceiling)
þ	1	Cyclohexane		110-82-7		PEL	Inhalation 🗸	300 ppm	OSHA	PEL-ST (short term)
S		Out the second		440.00.7			In heletien	1050	OSHA	PEL-TWA (time weighted)
Q	2	Cyclohexane		110-82-7		PEL ~	Inhalation ~	1050 mg/m3	OSHA	
	3	Cyclohexane		110-82-7		PEL	Inhalation 🗸	300 ppm	Cal/O	
×						051	In help the n		NICOLL	
	4	Cyclohexane		110-82-7		REL	Inhalation	300 ppm	NIOSH	
						BEI® - blood				NIOSH
						BEI® - urine CEV				Nicsh
						CLV				
						DNEL				REL-C (ceiling)
-						IDLH				、 REL-ST (short term)
⑩	Ļ	<				Limit val - 8 br	1		>	
Approp	oriate	engineering controls				Limit val - ST	TES: + Highlight row	first. Gray columns o	are display-o	
						PEL-C PEL-ST				^ ~
						PEL-TWA				×
Eye/fac	e pro	tection				PNEC REL-C				
						REL-Ca			_	ACGIH
						REL-ST				v
Skin pr	otect	ion				REL-TWA ST				TLV©
						STEL				~ <mark>Q</mark>
						STEV				· ·
		Edit	1	Naviga	ite i	TLV® TWA	Guidance	1		
		anual save [N]o data Stoc[k]		-	< ->	TWAEV	Help Video			Conset
prevented thermom		on NE lang Zoom S	pel[l]	SDSs << <	> >>	WEL	Research 🔻		one	Cancel

• OSHA Table Z-1-Limits for Air Contaminants

- The units associated with the limits are either parts per million (ppm) or milligrams per cubic meter (mg/m3).
- Also refer to Tables Z-2 and Z-3, for contaminants for which OSHA has "stayed" the limits under certain circumstances.
- OSHA Annotated Table Z-1
 - Includes both regulatory (mandatory) and recommended limits.
 - Consult the footnotes at the end of the table.
 - SDScribe[™] already contains the limits in Table Z-1
- ACGIH <u>"Threshold Limit Values (TLVs®)</u> and Biological Exposure Indices (BEIs[®])"
 - These values are exposure limit recommendations from the American Conference of Governmental and Industrial Hygienists (ACGIH); they are not legally-binding standards.
 - They include time-weighted averages (TWAs), short-term exposure limits (STELs), and biological exposure indices (BEIs).
 - These data are available for purchase from ACGIH.
- ACGIH "Workplace Environmental Exposure Levels (WEELs) ®
- NIOSH <u>"RELs and IDLHs"</u>
- EU Occupational Exposure Limits (EH40/2005)
- EU GESTIS DNEL Database
 - For the registration of substances in the EU, manufacturers or importers must quote assessment benchmarks on which they base recommended protective measures. Among these assessment yardsticks are Derived No-Effect Levels (DNELs).
 - GESTIS is also a very good source for additional properties of SDS ingredients (for example, physical properties, toxicology and ecotoxicology). It includes source citations.
 - Includes German Occupational Exposure Limits.
- GESTIS International Limit Values Database
 - Contains occupational limit values for almost 1800 substances.
 - Gathered from various EU member states, Australia, Canada (Ontario and Québec), Japan, New Zealand, Singapore, South Korea, Switzerland, The People's Republic of China, and the United States.

	Arbeitsschutz d Gesetzlichen U	ler infallversicherung			
ESTIS Internationa	I Limit Values				Project par
Substance	Acetic acid				
CAS No.	64-19-7				
	Limit value - E	ight hours	Limit value - Si	ort term	
	ppm	mgim*	ppm	mg/m*	
Australia	10	25	15	37	
Austria	10	25	20	50	
Belgium	10	25	15	38	
Canada - Ontario	10		15		
Canada - Québec	10	25	15	37	
Denmark	10	25	20	50	
European Union	10	25			
France			10	25	
Germany (AGS)	10	25	20 (1)	50 (1)	
Germany (DFG)	10	25	20	50	
Hungary		25		25	
Ireland	10	25	15 (1)	37 (1)	
Italy	10	25			
Japan					
Latvia	10	25			
New Zealand	10	25	15	37	
People's Republic of China		10		20 (1)	
Poland		15		30	
Singapore	10	25	15	37	
South Korea	10	25	15	37	
Spain	10	25	15	37	
Sweden	5	13	10(1)	25 (1)	
Switzerland	10	25	20	50	
The Netherlands					
USA - NOSH	10	25	15 (1)	37 (1)	

GESTIS DNEL database, alphabetical listing of substances.

- GESTIS Substance Database
- Workplace exposure standards for airborne contaminants Safe Work Australia
- NITE Chemical Risk Information Platform (NITE-CHRIP), Japan

Toxicological and Ecological Data for Section 11 and 12

- Manufacturers SDS
- <u>TOXNET</u> (U.S. National Library of Medicine), is a resource for searching databases on toxicology, hazardous chemicals, environmental health, and toxic releases
- <u>REACH Registration Dossier</u> –Includes Section 11 and 12 data, including Toxicological and Ecological as well as environmental fate data

	Sodium acetate		BQ 🚔					
<u>Data from Dossier</u>	EC number: 204-823-8 CAS number: 127-09-3							
Environmental fate Ecotoxicological	General information	Substance identity Identification Type of substance Substance Identifiers Compositions						
Toxicological	Classification & Labelling & PBT assessment	Identification						
	Manufacture, use & exposure	Ac Ac Type of Substance						
	Toxicological information	Composition: mono-constituent substance Origin: other: Carbonylic acid, salt						
	Cuidance on safe use	Substance Identifiers - EC number 204-823-8 - CAS number	open all close all					

• The <u>OECD Guidelines for the Testing of Chemicals</u> is a collection of about 150 of the most relevant methods for testing health effects. Governments, industry and independent laboratories use the methods to identify and characterize potential hazards of chemicals.