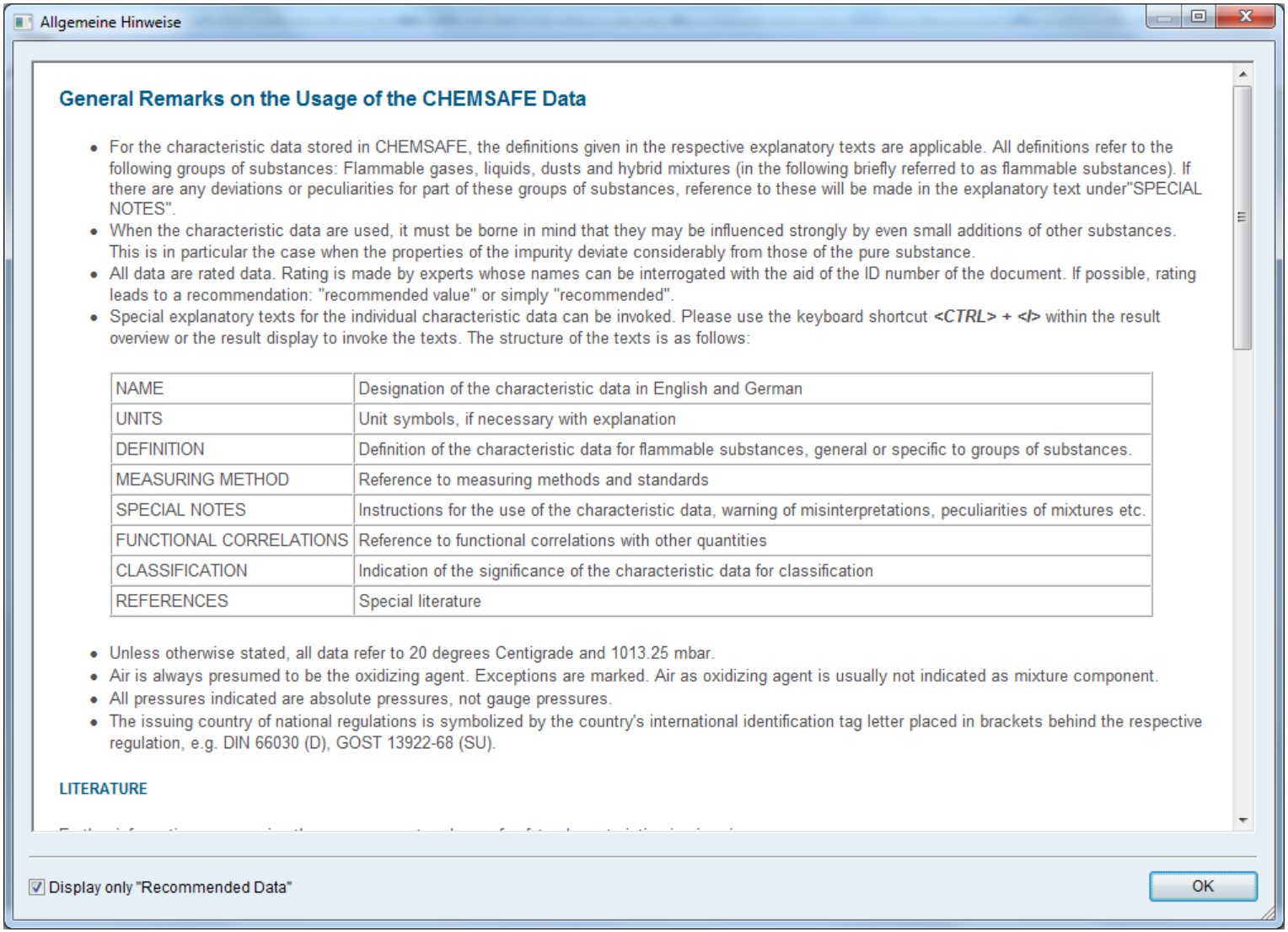
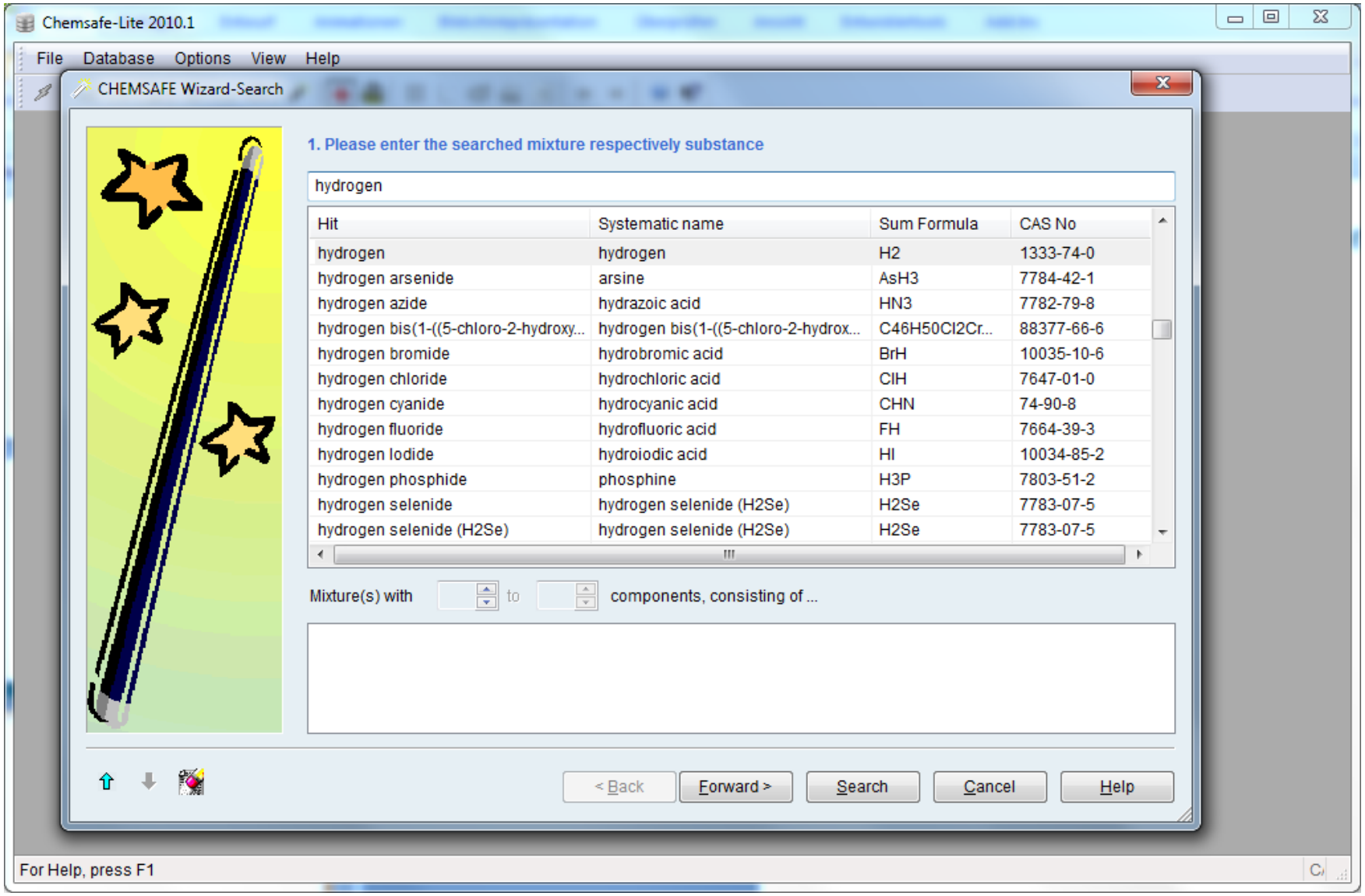
CHEMSAFE in Action ...

Overview on the look and feel of CHEMSAFE

1st step: Usage notes



Wizard-Search: Identification of component(s)



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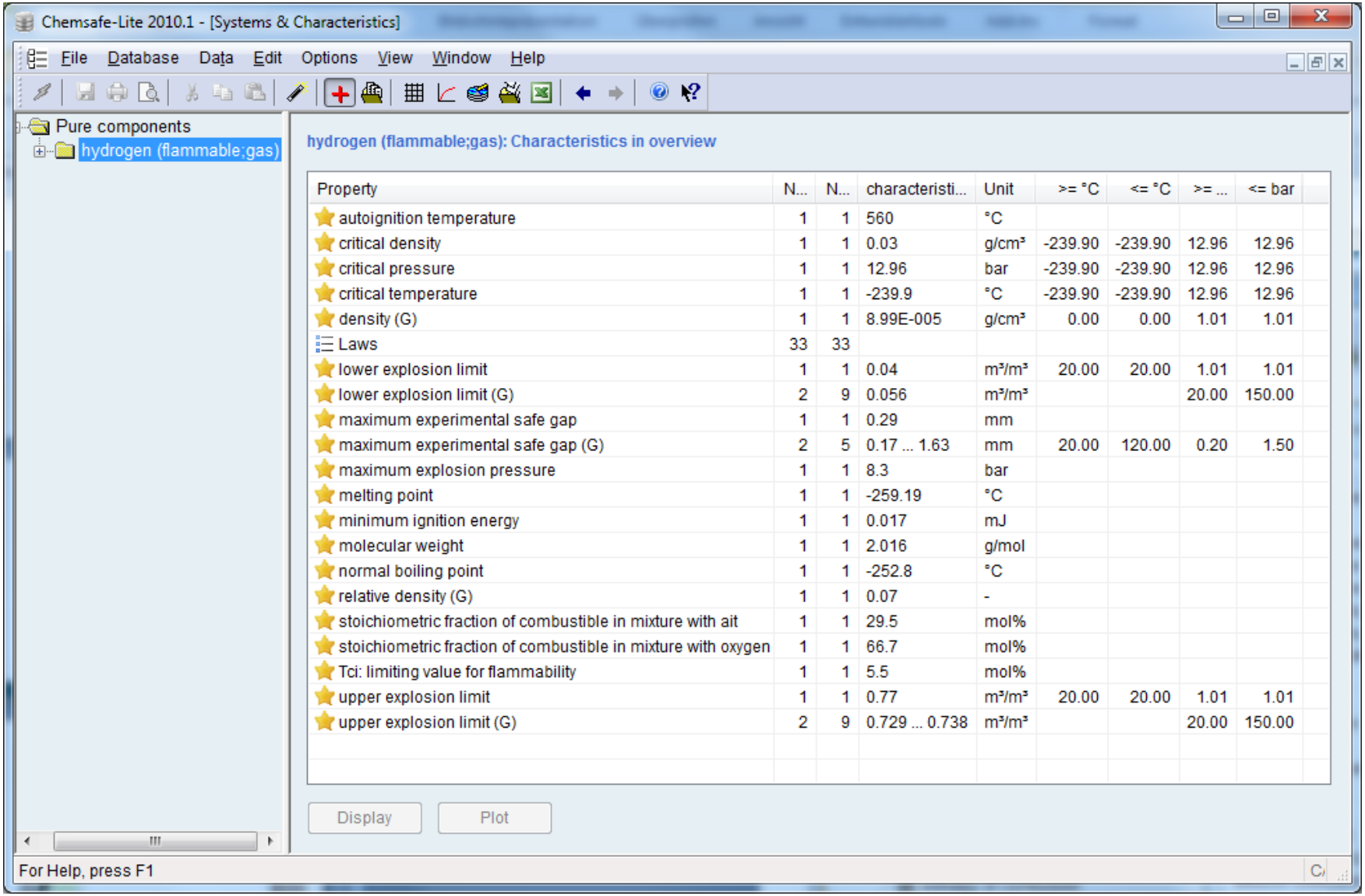
Results: Properties of Hydrogen in overview



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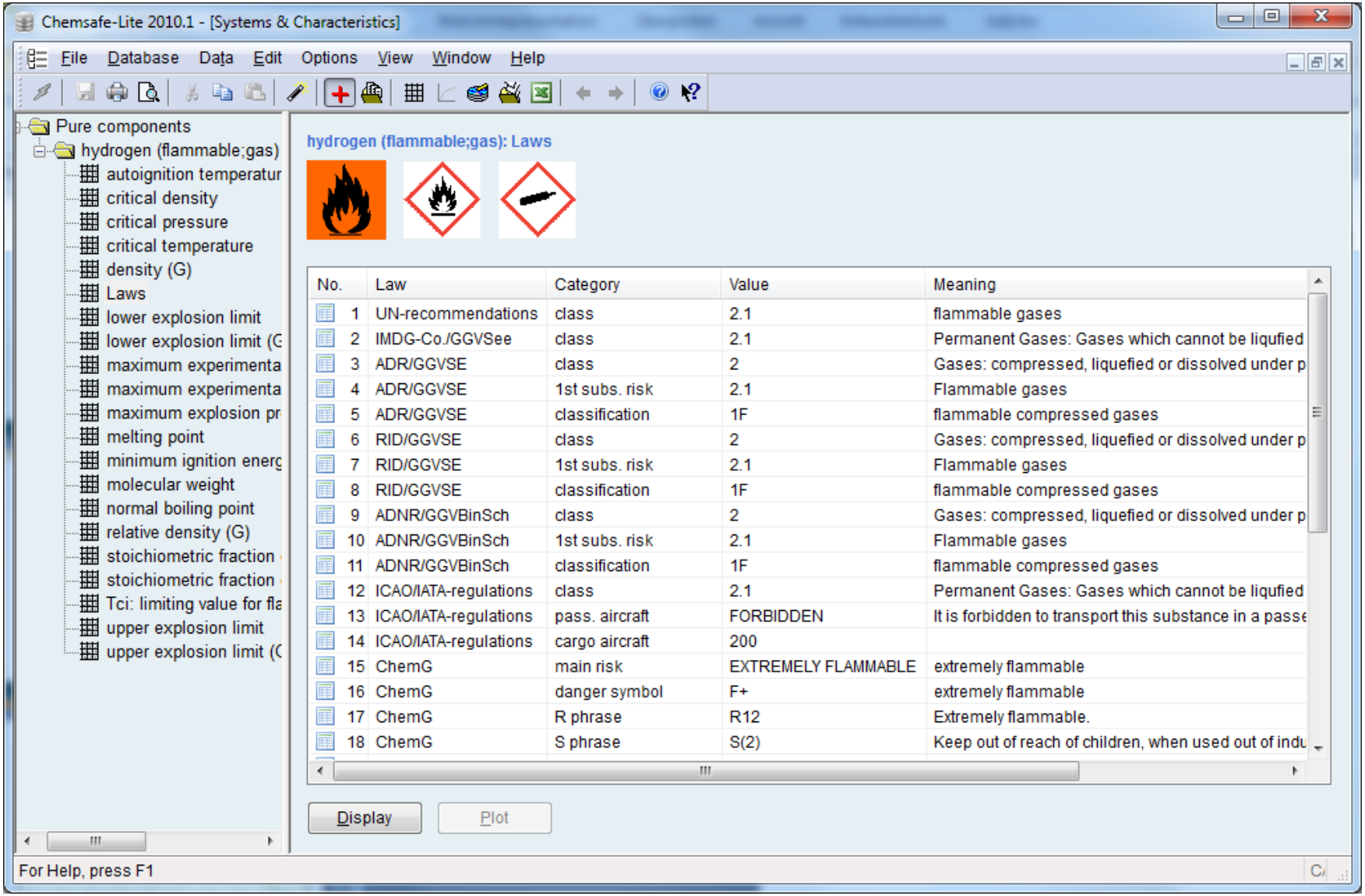
Results: Laws for Hydrogen in Overview



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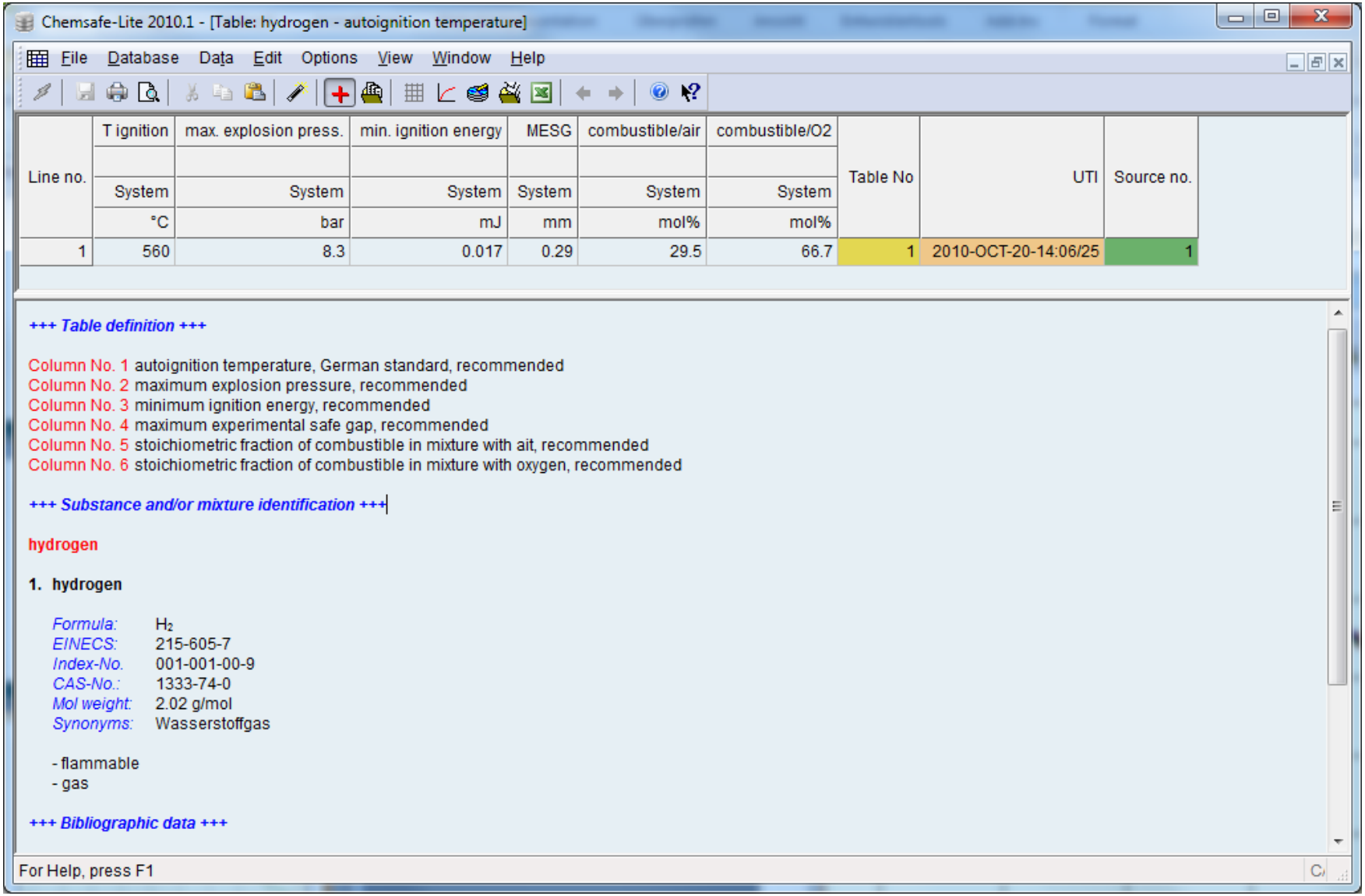
Results: Table display for autoignition temperature of Hydrogen



Line no.	T ignition	max. explosion press.	min. ignition energy	MESG	combustible/air	combustible/O2	Table No	UTI	Source no.
	System	System	System	System	System	System			
	°C	bar	mJ	mm	mol%	mol%			
1	560	8.3	0.017	0.29	29.5	66.7	1	2010-OCT-20-14:06/25	1

+++ Table definition +++

Column No. 1 autoignition temperature, German standard, recommended
Column No. 2 maximum explosion pressure, recommended
Column No. 3 minimum ignition energy, recommended
Column No. 4 maximum experimental safe gap, recommended
Column No. 5 stoichiometric fraction of combustible in mixture with ait, recommended
Column No. 6 stoichiometric fraction of combustible in mixture with oxygen, recommended

+++ Substance and/or mixture identification +++

hydrogen

1. hydrogen

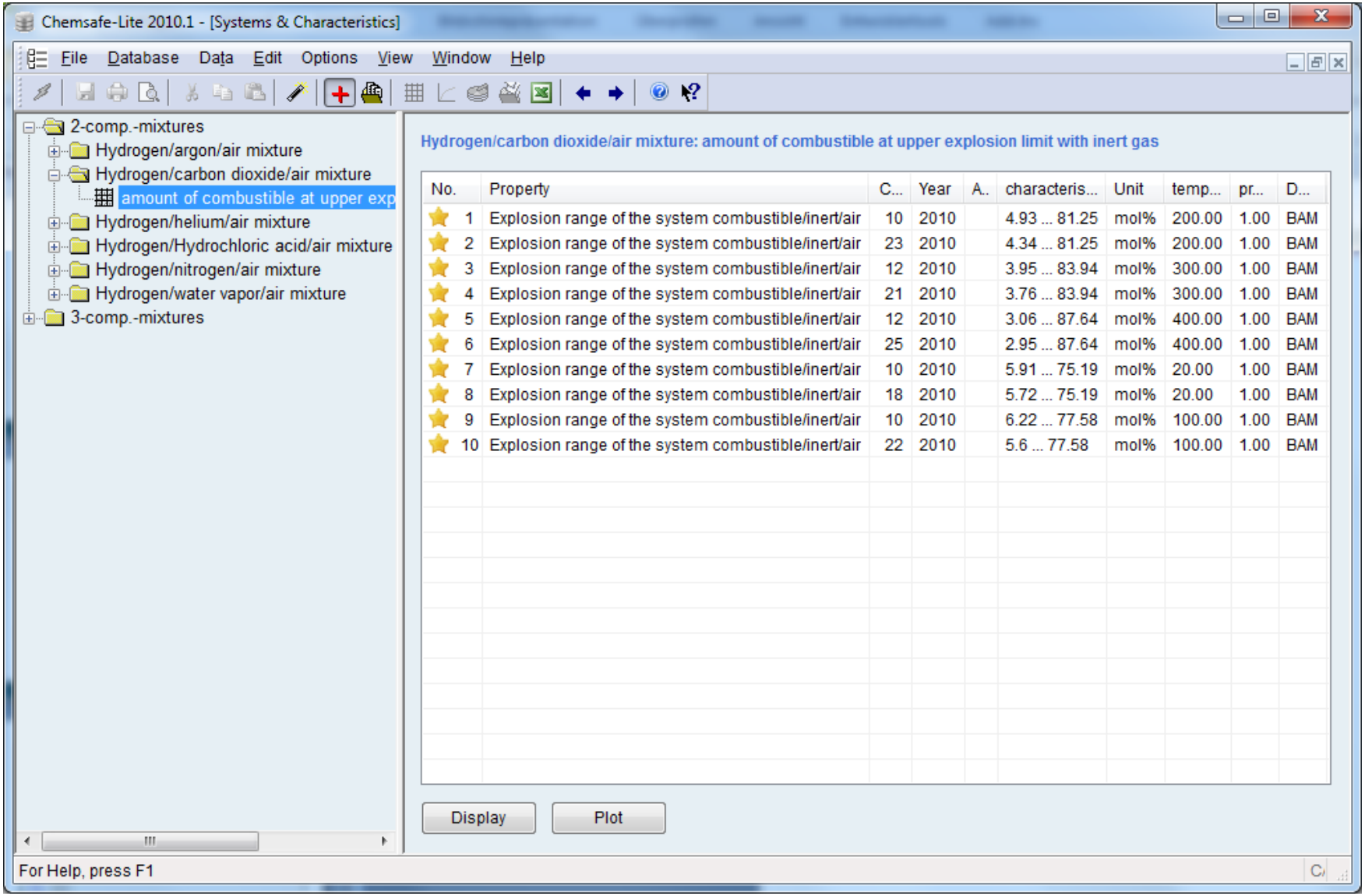
Formula: H_2
EINECS: 215-605-7
Index-No. 001-001-00-9
CAS-No.: 1333-74-0
Mol weight: 2.02 g/mol
Synonyms: Wasserstoffgas

- flammable
- gas

+++ Bibliographic data +++

For Help, press F1

Explosion ranges of mixtures with hydrogen in overview



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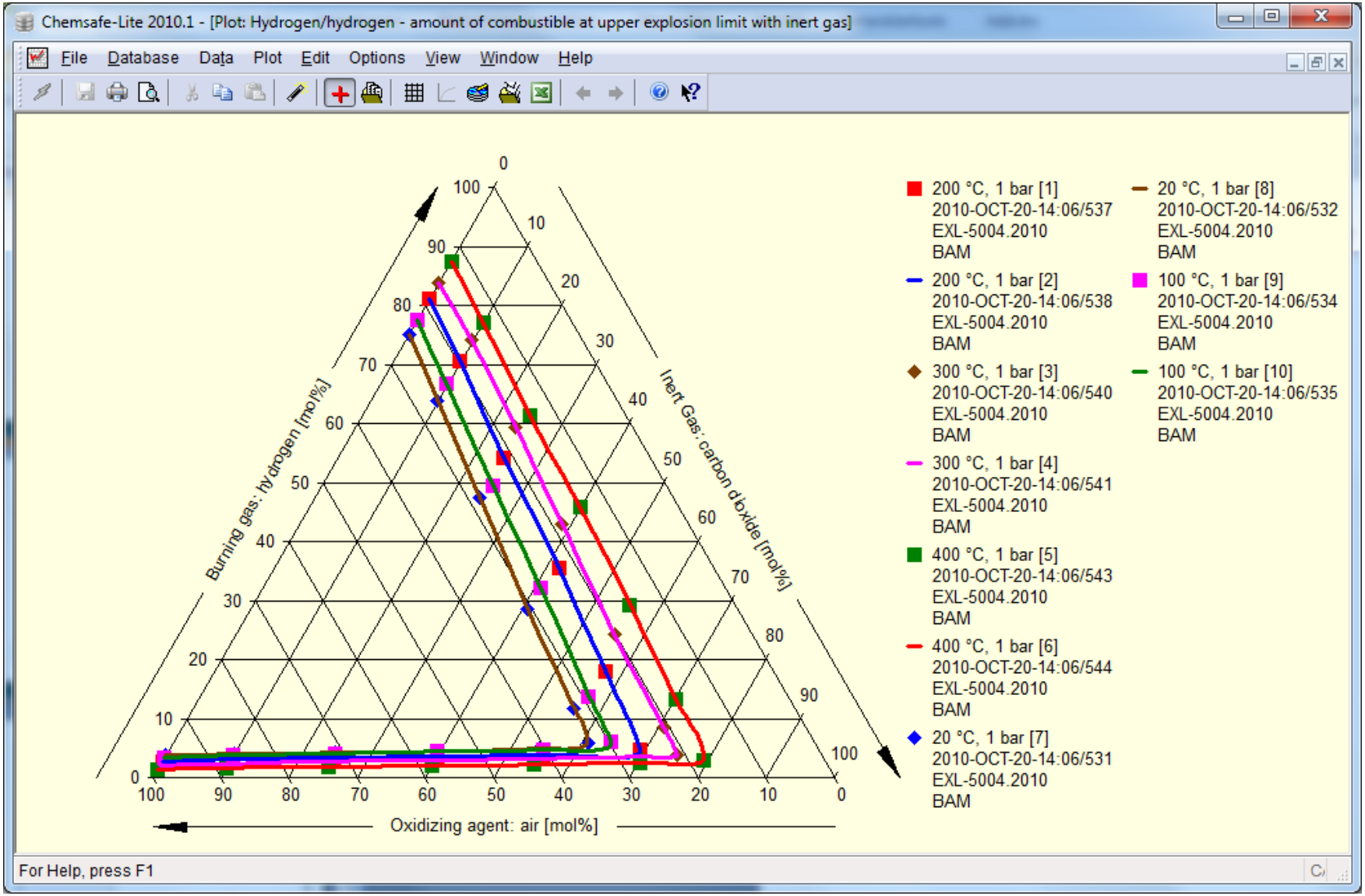
Plot of explosion ranges for Hydrogen/CO_2/Air-mixture



Data for explosion range of Hydrogen/CO_2/Air-mixture

Chemsafe-Lite 2010.1 - [Table: Hydrogen/hydrogen - amount of combustible at upper explosion limit with inert gas]

File Database Data Edit Options View Window Help

Line no.	T	p	inert gas	combustible LEL	combustible UEL	combustible LEL	combustible UEL	Table No	UTI	Source no.
	System	System	carbon dioxide	hydrogen	hydrogen	air	air			
	°C	bar	mol%	mol%	mol%	mol%	mol%			
1	200	1	0.00	2.86	81.25	97.14	18.75	1	2010-OCT-20-14:06/537	1
2			9.79	-	70.66	-	19.55			
3			9.90	3.19	-	86.91	-			
4			24.31	-	54.31	-	21.38			
5			24.81	3.50	-	71.69	-			
6			39.86	3.69		56.45				
7			41.77	-	35.71	-	22.52			
8			55.26	4.02	-	40.72	-			
9			57.34	-	18.09	-	24.57			
10			69.10	4.93	4.93	25.97	25.97			

+++ Table definition +++

Column No. 1 temperature
Column No. 2 pressure
Column No. 3 amount of inert gas in the mixture, carbon dioxide, recommended
Column No. 4 amount of combustible at lower explosion limit with inert gas, hydrogen, recommended
Column No. 5 amount of combustible at upper explosion limit with inert gas, hydrogen, recommended
Column No. 6 amount of oxidator at lower explosion limit with inert gas, air, recommended
Column No. 7 amount of oxidator at upper explosion limit with inert gas, air, recommended

+++ Substance and/or mixture identification +++

Hydrogen/hydrogen

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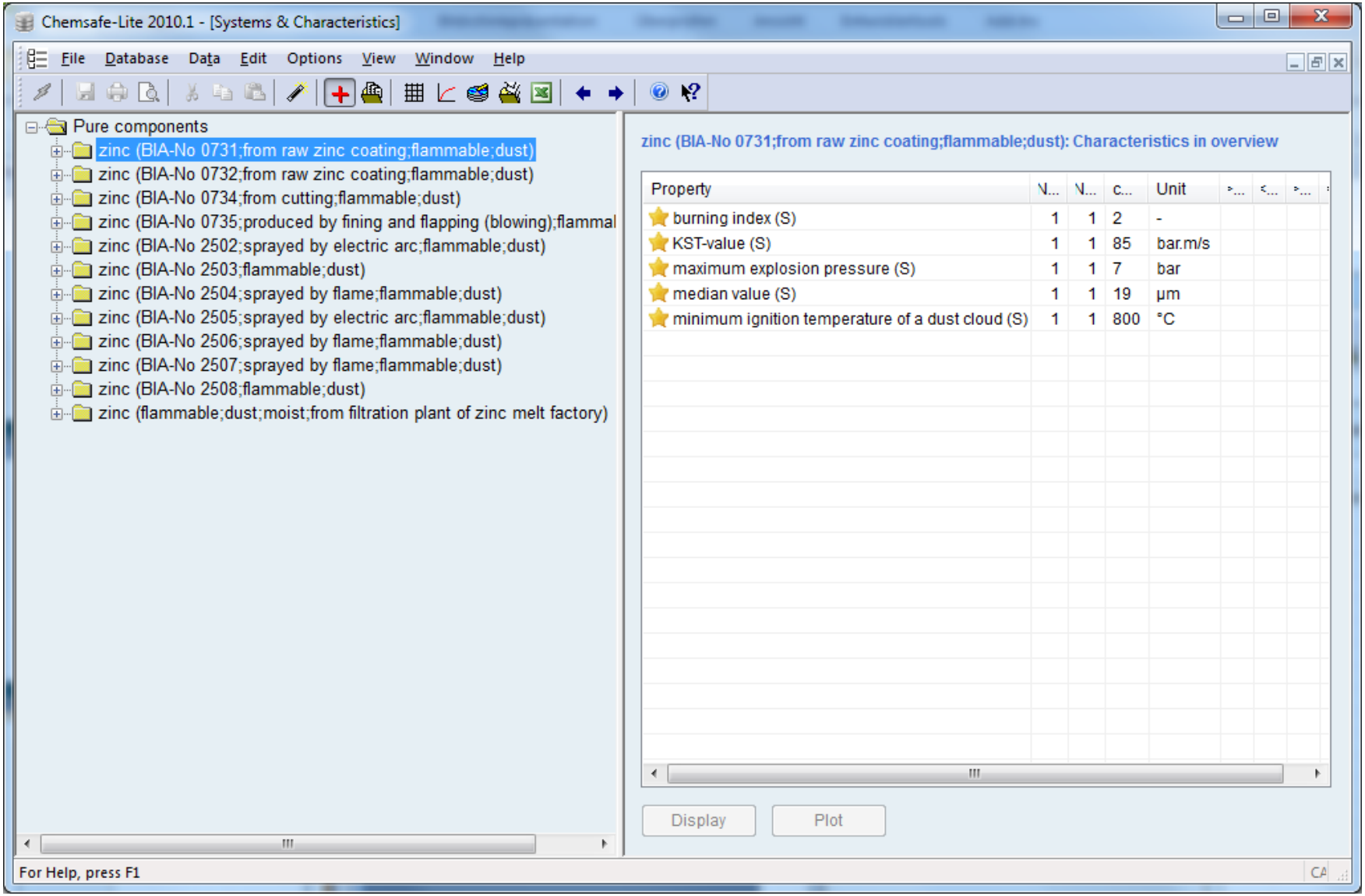
Example for dust layers: Data of Zinc



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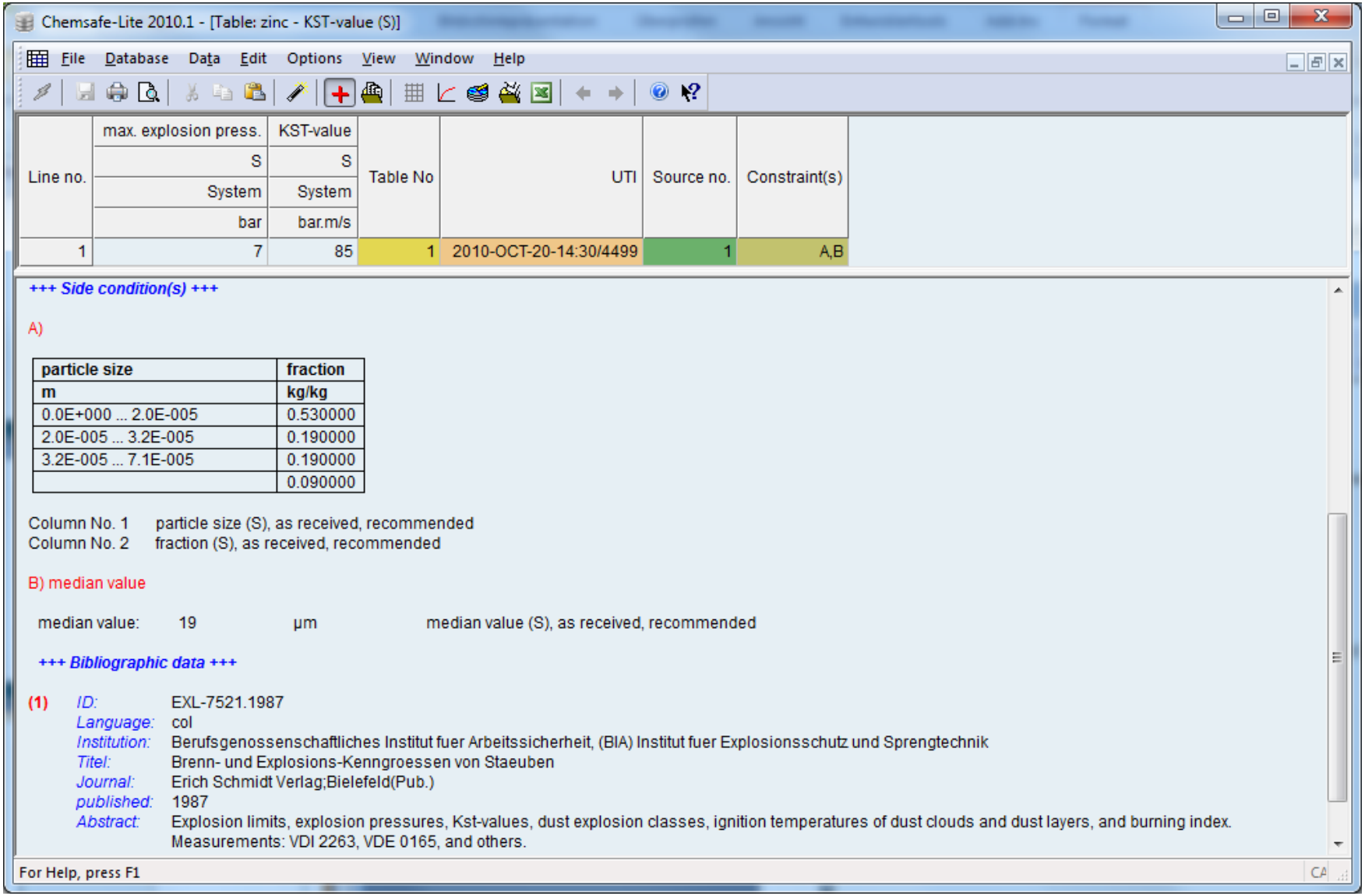
Example for dust layers: KST-value of Zinc-layer



Chemsafe-Lite 2010.1 - [Table: zinc - KST-value (S)]

File Database Data Edit Options View Window Help

Line no.	max. explosion press. S System bar	KST-value S System bar.m/s	Table No	UTI	Source no.	Constraint(s)
1	7	85	1	2010-OCT-20-14:30/4499	1	A,B

+++ Side condition(s) +++

A)

particle size	fraction
m	kg/kg
0.0E+000 ... 2.0E-005	0.530000
2.0E-005 ... 3.2E-005	0.190000
3.2E-005 ... 7.1E-005	0.190000
	0.090000

Column No. 1 particle size (S), as received, recommended
Column No. 2 fraction (S), as received, recommended

B) median value

median value: 19 µm median value (S), as received, recommended

+++ Bibliographic data +++

(1) *ID:* EXL-7521.1987
Language: col
Institution: Berufsgenossenschaftliches Institut fuer Arbeitssicherheit, (BIA) Institut fuer Explosionsschutz und Sprengtechnik
Titel: Brenn- und Explosions-Kenngroessen von Staeuben
Journal: Erich Schmidt Verlag;Bielefeld(Pub.)
published: 1987
Abstract: Explosion limits, explosion pressures, Kst-values, dust explosion classes, ignition temperatures of dust clouds and dust layers, and burning index. Measurements: VDI 2263, VDE 0165, and others.

For Help, press F1

DECHEMA