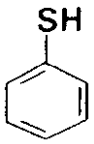
Schwefelverbindungen

1 Mercaptane

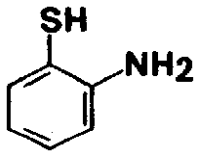
1.1 Aliphatische und araliphatische Mercaptane

Methanthiol	CH_3-SH	*Methylmercaptan*	F.-121°C, Kp.5,8°C, D.0,896
Ethanthiol	CH_3-CH_2-SH	*Ethylmercaptan*	F.-144°C, Kp.35°C, D.0,845
Propan-1-thiol	CH_3-$(CH_2)_2$-SH	*Propylmercaptan*	F.-113°C, Kp.67°C, D.~0,84
Propan-2-thiol	CH_3-CH(SH)-CH_3	*iso-Propylmercaptan*	F.-130°C, Kp.53°C, D.~0,81
Butan-1-thiol	CH_3-$(CH_2)_3$-SH	*Butylmercaptan*	F.-115°C, Kp.98°C, D.~0,84
Butan-2-thiol	CH_3-CH_2-CH(SH)-CH_3	*sec-Butylmercaptan*	Kp.85°C, D.~0,83
Pentan-1-thiol	CH_3-$(CH_2)_4$-SH	*Pentylmercaptan*	Kp.126°C, D.0,840
Hexan-1-thiol	CH_3-$(CH_2)_4$-CH_2-SH	*Hexylmercaptan*	F.-81°C, Kp.~152°C, D.0,841
Heptan-1-thiol	CH_3-$(CH_2)_5$-CH_2-SH	*Heptylmercaptan*	
Octan-1-thiol	CH_3-$(CH_2)_6$-CH_2-SH	*Octylmercaptan*	F.-49°C, Kp.199°C, D.0,842
2-Methylbutan-1-thiol	CH_3-CH_2-CH(CH_3)-CH_2-SH		Kp.116°C, D.0,848
2-Methylbutan-2-thiol	CH_3-CH_2-C(SH)(CH_3)-CH_3	*tert-Pentylmercaptan*	Kp.102°C, D. 0,842
3-Methylbutan-1-thiol	CH_3-CH(CH_3)-CH_2-CH_2-SH		Kp.117°C, D. 0,835
(E)-But-2-en-1-thiol	CH_3-CH=CH-CH_2-SH		
Propan-1-ol-2,3-dithiol	CH_2SH-CH(SH)-CH_2OH	*Dimercaprol*	Z.120°C, D.1,25, L.W.87(25°C)
Ethan-1,2-dithiol	HS-$(CH_2)_2$-SH	*Ethylenmercaptan*	F.-41°C, Kp.146°C, D.~1,12
Propan-1,3-dithiol	HS-$(CH_2)_3$-SH	*Propylenmercaptan*	F.-79°C, Kp.170°C, D.~1,08
Butan-1,4-dithiol	HS-$(CH_2)_4$-SH	*Butylenmercaptan*	
Pentan-1,5-dithiol	HS-$(CH_2)_5$-SH	*Amylenmercaptan*	F.-72°C, , D.1,016
Hexan-1,6-dithiol	HS-$(CH_2)_6$-SH		Kp.269°C, D.0,962
Heptan-1,7-dithiol	HS-$(CH_2)_7$-SH		
Octan-1,8-dithiol	HS-$(CH_2)_8$-SH		Kp.284°C, D.0,952
Nonan-1,9-dithiol	HS-$(CH_2)_9$-SH		

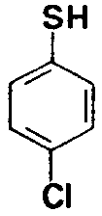
1.2 Aromatische und heterocyclische Mercaptane



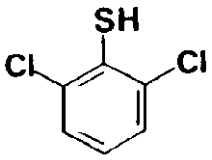
Thiophenol
F.-15°C, Kp.168°C, D.1,078



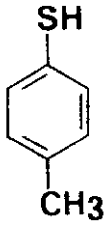
2-Aminothiophenol
F.26°C, Kp.234°C, D.1,172



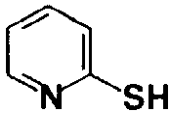
4-Chlorthiophenol
F.51°C, Kp.206°C



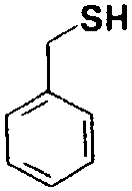
2,6-Dichlorthiophenol
F.47°C



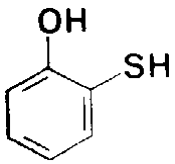
4-Methylthiophenol
F.41°C, Kp.195°C



2-Pyridinthiol
F.127°C, LW.50



Phenylmethanthiol
Benzylmercaptan
Kp.194°C, D.1,055



2-Hydroxy-benzenthiol
2-Mercaptophenol

18.1.3 Bifunktionelle Mercaptane

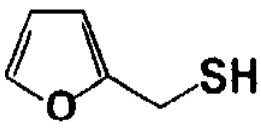
2-Hydroxy-propan-1-thiol CH_3-CH(OH)-CH_2-SH *1-Mercapto-propan-2-ol* D.1,048

Mercaptoethansäureethylester HS-CH_2-CO-OCH_2-CH_3 *Ethylthioglycolat* Kp.157°C, D.1,093

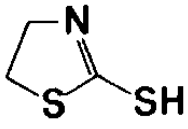
Ethanthiosäure (besser: Ethanthiolsäure) CH_3-CO-SH *Thioessigsäure* F.-17°C, Z.93°C, D.1,068
(besser: Ethanthionsäure) CH_3-CS-OH
(-thio steht möglichst vor dem Affix welches das ausgetauschte O-Atom bezeichnet)

Mercaptoethansäure HS-CH_2-COOH *Thioglycolsäure* F.-16°C, D.1,326

2-Mercaptoethansulfonsäure HS-CH_2-CH_2-SO_3H



Furan-2-methanthiol
Kp.155°C, D.1,127

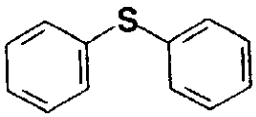


2-Thiazolin-2-thiol
F.103°C

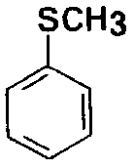
2 Sulfide und Disulfide

2.1 Sulfide

Dimethylsulfid	CH_3-S-CH_3	*Dimethylthioether*	F.-83°C, Kp.38°C, D.0,846
Ethylmethylsulfid	CH_3-S-CH_2-CH_3	*Ethylmethylthioether*	F.-105°C, Kp.67°C, D.0,837
Diethylsulfid	CH_3-CH_2-S-CH_2-CH_3	*Diethylthioether*	F.-102°C, Kp.92°C, D.0,836
Dipropylsulfid	CH_3-$(CH_2)_2$-S-$(CH_2)_2$-CH_3		
Dibutylsulfid	CH_3-$(CH_2)_3$-S-$(CH_2)_3$-CH_3		F.-80°C, Kp.182°C, D.0,838
Dipropylensulfid	$(H_2C$=CH-$CH_2)_2$S	*Diallylsulfid*	F.-83°C, Kp.139°C, D.0,887
Bis(2-chlor-ethyl)sulfid	Cl-$(CH_2)_2$-S-$(CH_2)_2$-Cl	*S-Yperit*	Kp.215°C



Diphenylsulfid
F.40°C, Kp.296°C, D.1,113

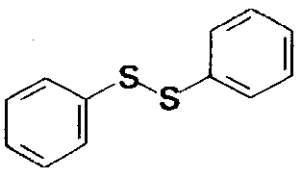


Methylphenylsulfid
F.-15°C, Kp.188°C, D.1,057

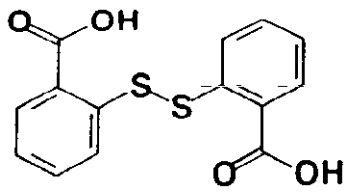
2.2 Disulfide

Dimethyldisulfid	CH_3-S-S-CH_3	*Dimethyldithioether*	
Diethyldisulfid	CH_3-CH_2-S-S-CH_2-CH_3		
Dipropyldisulfid	CH_3-$(CH_2)_2$-S-S-$(CH_2)_2$-CH_3		
Dibutyldisulfid	CH_3-$(CH_2)_3$-S-S-$(CH_2)_3$-CH_3		Kp.231°C, D.0,937

Di-(1,1-dimethylethyl)-disulfid CH_3-$C(CH_3)_2$-S-S-$C(CH_3)_2$-CH_3 *Di-tert-butyldisulfid*



Diphenyldisulfid
F.59°C

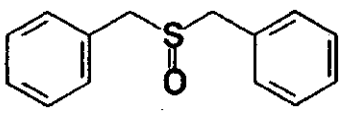


2,2´-Dithiodibenzoesäure
F.284°C

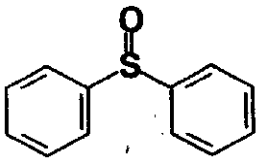
3 Sulfoxide und Sulfone

3.1 Sulfoxide

Methylsulfinylmethan	CH_3-SO-CH_3	*Dimethylsulfoxid*	F.18°C, Kp.189°C, D.1,100
Ethylsulfinylmethan	CH_3-SO-CH_2-CH_3	*Äthylmethylsulfoxid*	
Ethylsulfinylethan	CH_3-CH_2-SO-CH_2-CH_3	*Diäthylsulfoxid*	



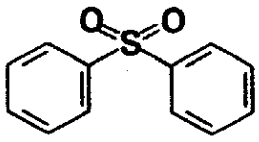
Dibenzylsulfoxid
F.129°C, Z.210°C, LW.0,3



Diphenylsulfoxid
F.69°C

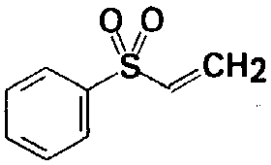
3.2 Sulfone

Methylsulfonylmethan	CH_3-SO_2-CH_3	*Dimethylsulfon*	F.108°C, Kp.238°C
Ethylsulfonylmethan	CH_3-CH_2-SO_2-CH_3	*Äthylmethylsulfon*	
Ethylsulfonylethan	CH_3-CH_2-SO_2-CH_2-CH_3	*Diäthylsulfon*	F.73°C, Kp.248°C
Ethenylsulfonylethen	CH_2=CH-SO_2-CH=CH_2	*Divinylsulfon*	F.-26°C, D.1,177

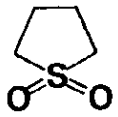


Diphenylsulfon

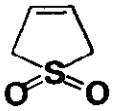
F.127°C, Kp.379°C



Phenylsulfinylethen
Phenylvinylsulfon
D.1,155



Sulfolan
Tetrahydrothiophen-1,1-dioxid
Kp.287°C

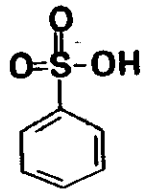


3-Sulfolen
2,5-Dihydrothiophen-1,1,-dioxid
F.63°C, LW.130

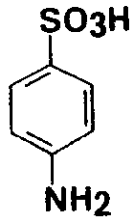
4 Sulfonsäuren und Derivate

4.1 Sulfonsäuren, deren Salze und deren Ester

Methansulfonsäure	CH_3-SO_3H		F.20°C, Kp.167°C(13hPa), D.~1,48
Ethansulfonsäure	CH_3-CH_2-SO_3H		F.-17°C, Kp.138°C(3hPa), D.~1,34
Propansulfonsäure	CH_3-CH_2-CH_2-SO_3H		
Methansulfonsäuremethylester	CH_3-SO_2-O-CH_3	*Methylmethansulfonat*	Kp.203°C, D.1,298
Methansulfonsäureethylester	CH_3-SO_2-O-CH_2-CH_3	*Äthylmethansulfonat*	Kp.85°C(13hPa), D.1,206



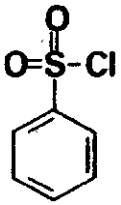
Benzensulfonsäure



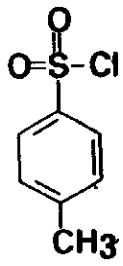
Sulfanilsäure
4-Aminobenzensulfonsäure
LW.10

4.2 Sulfonsäurechloride und -anhydride

Chlorsulfonsäure	Cl-SO_3H		F.-80°C, Kp.151°C, D.1,751
Methansulfonsäurechlorid	CH_3-SO_2Cl	*Methansulfonylchlorid*	F.-33°C, Kp.164°C, D.1,475
Ethansulfonsäurechlorid	CH_3-CH_2-SO_2Cl	*Ethansulfonylchlorid*	Kp.171°C, D.1,359

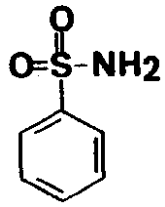


Benzensulfonylchlorid
F.15°C, Z.251°C, D.1,378



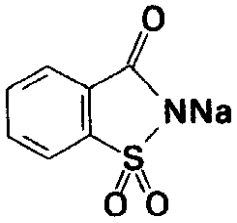
Toluen-4-sulfonylchlorid
Tosylchlorid
F.67°C, Kp.135°C

4.3 Sulfonsäureamide und Derivate

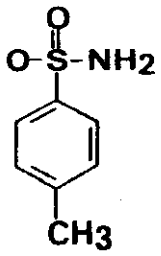


Benzensulfonamid

F.151°C, LW.4,3(16°C)



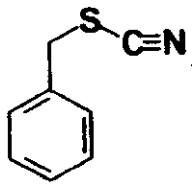
2-Sulfobenzensäureimid, Na-Salz
Saccharin, Na-Salz
LW.830



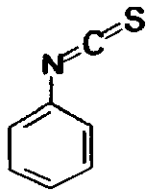
Toluen-4-sulfonsäureamid
p-Toluolsulfonamid
F.137°C

5 Thiocyanate und Isocyanate

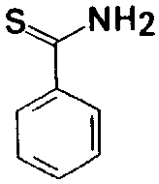
Methylthiocyanat (Thiocyansäuremethylester)	CH_3-S-CN	*Methylrhodanid*	F.-53,6°C, Kp.131°C, D.1,076
Ethylthiocyanat (Thiocyansäureethylester)	CH_3-CH_2-S-CN	*Ethylrhodanid*	F.-85,5°C, Kp.68°C, D.0,736
Chlormethylthiocyanat (Thiocyansäure-chlormethylester)	Cl-CH_2-S-CN		D.1,365
Isothiocyansäureethylester	CH_3-CH_2-N=C=S	*Ethylisothiocyanat*	F.-5°C, Kp.132°C, D.0,999



Thiocyansäurebenzylester
Benzylthiocyanat
F.39°C, Kp.230°C



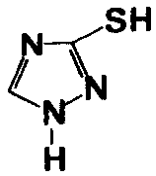
Isothiocyansäurephenylester
Phenylisothiocyanat
F.-21°C, Kp.221°C, D.1,133



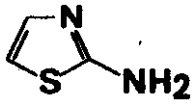
Thiobenzamid
F.114°C

6 Thioharnstoffe und Derivate

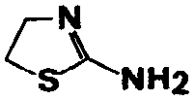
N-Methylthioharnstoff	CH_3-NH-CS-NH_2		F.119°C
N-Acetylthioharnstoff	CH_3-CO-NH-CS-NH_2		F.165°C, LW.128(15°C)
Thiosemicarbazid	NH_2-CS-NH-NH_2		Z.178°C,
Thioharnstoff	NH_2-CS-NH_2	*Thiocarbamid*	F.173°C, LW.180



1,2,4-Triazol-3-thiol
3-Mercapto-1,2,4-triazol
F.219°C



2-Aminothiazol
F.87°C, LW.0



2-Amino-2-thiazolin
F.79°C

7 Sonstige Schwefelverbindungen

Aminomethandisulfonsäure	H_2N-CH(SO_3H)$_2$		
2-Aminoethansulfonsäure	H_2N-CH_2-CH_2-SO_3H	*Taurin*	F.329°C
Sulfomethansäure	HO_3S-COOH		
Sulfoethansäure	HO_3S-CH_2-COOH		F.85°C, Z.~245°C
Sulfopropansäure	HO_3S-$(CH_2)_2$-COOH		
Methansulfensäure	CH_3-SOH	*Methylsulfensäure*	
Ethansulfensäure	CH_3-CH_2-SOH	*Äthylsulfensäure*	
Methansulfinsäure	CH_3-SO_2H	*Methylsulfinsäure*	
Ethansulfinsäure	CH_3-CH_2-SO_2H	*Äthylsulfinsäure*	
Propan-1-sulfinsäure	CH_3-$(CH_2)_2$-SO_2H	*Propylsulfinsäure*	
Methansulfonylchlorid	CH_3-SO_2Cl		Kp.160°C
Ethansulfonylchlorid	CH_3-CH_2-SO_2Cl		Kp.171°C, D.1,359
1-Propansulfonylchlorid	CH_3-$(CH_2)_2$-SO_2Cl		F.-46°C,Kp.71°C(16hPa), D.1,271
Methylchlorsulfat	CH_3-O-SO_2Cl		F.-60°C, Kp.134°C, D.1,490