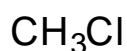


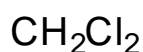
### 29.03 炭化水素のハロゲン化誘導体 (Halogenated derivatives of hydrocarbons.)

(A) 非環式炭化水素の塩素化誘導体(飽和のものに限る。)  
(Saturated chlorinated derivatives of acyclic hydrocarbons)

- (1) クロロメタン (塩化メチル)  
(Chloromethane (methyl chloride))



- (2) ジクロロメタン (塩化メチレン)  
(Dichloromethane (methylene chloride))



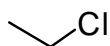
- (3) クロロホルム (トリクロロメタン)  
(Chloroform (trichloromethane))



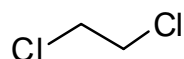
- (4) 四塩化炭素  
(Carbon tetrachloride)



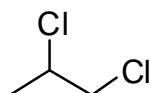
- (5) クロロエタン (塩化エチル)  
(Chloroethane (ethyl chloride))



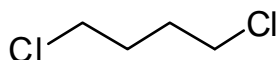
- (6) 二塩化エチレン (ISO) (1,2-ジクロロエタン)  
(Ethylene dichloride (ISO) (1,2-dichloroethane))



- (7) 1,2-ジクロロプロパン (二塩化プロピレン)  
(1,2-Dichloropropane (propylene dichloride))



- (8) ジクロロブタン  
(Dichlorobutanes)  
- 1,4-ジクロロブタン  
(1,4-Dichlorobutane)

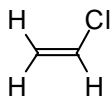


(B) 非環式炭化水素の塩素化誘導体(不飽和のものに限る。)

(Unsaturated chlorinated derivatives of acyclic hydrocarbons)

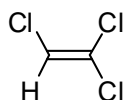
(1) 塩化ビニル (クロロエチレン)

(Vinyl chloride (chloroethylene))



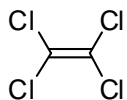
(2) トリクロロエチレン

(Trichloroethylene)



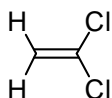
(3) テトラクロロエチレン (ペルクロロエチレン)

(Tetrachloroethylene (perchloroethylene))



(4) 塩化ビニリデン

(Vinylidene chloride)



(C) 非環式炭化水素のフッ素化誘導体 (飽和のものに限る。)

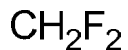
ー トリフルオロメタン (HFC-23)

(Trifluoromethane (HFC-23))



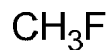
ー ジフルオロメタン (HFC-32)

(Difluoromethane (HFC-32))



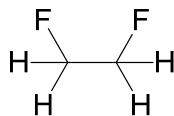
ー フルオロメタン (HFC-41)

(Fluoromethane (HFC-41))



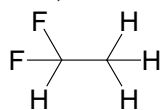
ー 1,2-ジフルオロエタン (HFC-152)

(1,2-Difluoroethane (HFC-152))



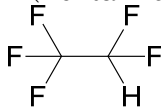
- 1,1-ジフルオロエタン (HFC-152a)

(1,1-Difluoroethane (HFC-152a))



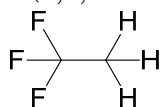
- ペンタフルオロエタン (HFC-125)

(Pentafluoroethane (HFC-125))



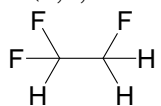
- 1,1,1-トリフルオロエタン (HFC-143a)

(1,1,1-Trifluoroethane (HFC-143a))



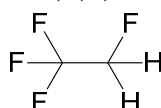
- 1,1,2-トリフルオロエタン (HFC-143)

(1,1,2-Trifluoroethane (HFC-143))



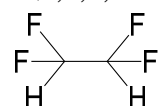
- 1,1,1,2-テトラフルオロエタン (HFC-134a)

(1,1,1,2-Tetrafluoroethane (HFC-134a))



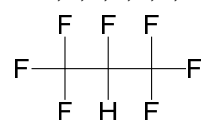
- 1,1,2,2-テトラフルオロエタン (HFC-134)

(1,1,2,2-Tetrafluoroethane (HFC-134))



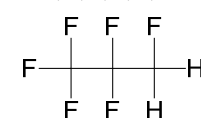
- 1,1,1,2,3,3,3-ヘプタフルオロプロパン (HFC-227ea)

(1,1,1,2,3,3,3-Heptafluoropropane (HFC-227ea))



- 1,1,1,2,2,3-ヘキサフルオロプロパン (HFC-236cb)

(1,1,1,2,2,3-Hexafluoropropane (HFC-236cb))



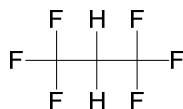
- 1,1,1,2,3,3-ヘキサフルオロプロパン (HFC-236ea)

(1,1,1,2,3,3-Hexafluoropropane (HFC-236ea))



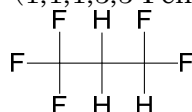
- 1,1,1,3,3,3-ヘキサフルオロプロパン (HFC-236fa)

(1,1,1,3,3,3-Hexafluoropropane (HFC-236fa))



- 1,1,1,3,3-ペンタフルオロプロパン (HFC-245fa)

(1,1,1,3,3-Pentafluoropropane (HFC-245fa))



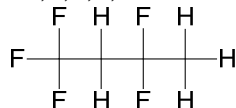
- 1,1,2,2,3-ペンタフルオロプロパン (HFC-245ca)

(1,1,2,2,3-Pentafluoropropane (HFC-245ca))



- 1,1,1,3,3-ペンタフルオロブタン (HFC-365mfc)

(1,1,1,3,3-Pentafluorobutane (HFC-365mfc))



- 1,1,1,2,2,3,4,5,5,5-デカフルオロペンタン (HFC-43-10mee)

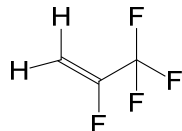
(1,1,1,2,2,3,4,5,5,5-Decafluoropentane (HFC-43-10mee))



(D) 非環式炭化水素のふっ素化誘導体 (不飽和のものに限る。)

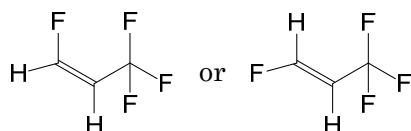
- 2,3,3,3-テトラフルオロプロペン (HFO-1234yf)

(2,3,3,3-Tetrafluoropropene (HFO-1234yf))

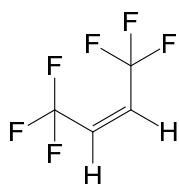


- 1,3,3,3-テトラフルオロプロペン (HFO-1234ze)

(1,3,3,3-Tetrafluoropropene (HFO-1234ze))

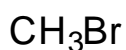


- (Z)-1,1,1,4,4,4-ヘキサフルオロ-2-ブテン (HFO-1336mzz)  
 ((Z)-1,1,1,4,4,4-Hexafluoro-2-butene (HFO-1336mzz))

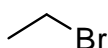


(E) 非環式炭化水素の臭素化誘導体及びよう素化誘導体  
 (Brominated or iodinated derivatives of acyclic hydrocarbons)

- (1) ブロモメタン (臭化メチル)  
 (Bromomethane (methyl bromide))



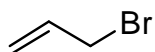
- (2) ブロモエタン (臭化エチル)  
 (Bromoethane (ethyl bromide))



- (3) ブロモホルム  
 (Bromoform)



- (4) 臭化アリル  
 (Allyl bromide)



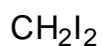
- (5) ヨードメタン (よう化メチル)  
 (Iodomethane (methyl iodide))



- ・ ヨードエタン (よう化エチル)  
 (Iodoethane (ethyl iodide))



- (6) ジヨードメタン (よう化メチレン)  
 (Di-iodomethane (methylene iodide))

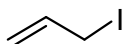


- (7) ヨードホルム  
 (Iodoform)



(8) よう化アリル (3-ヨードプロペン)

(Allyl iodide (3-iodopropene))



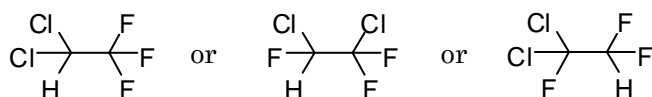
(F) 非環式炭化水素のハロゲン化誘導体 (二以上の異なるハロゲン原子を有するものに限る。)

(Halogenated derivatives of acyclic hydrocarbons containing two or more different halogens)

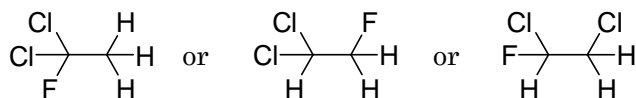
- クロロジフルオロメタン (HCFC-22)  
(Chlorodifluoromethane (HCFC-22))



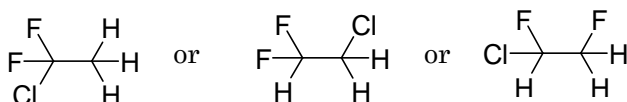
- ジクロロトリフルオロエタン (HCFC-123)  
(Dichlorotrifluoroethanes (HCFC-123))



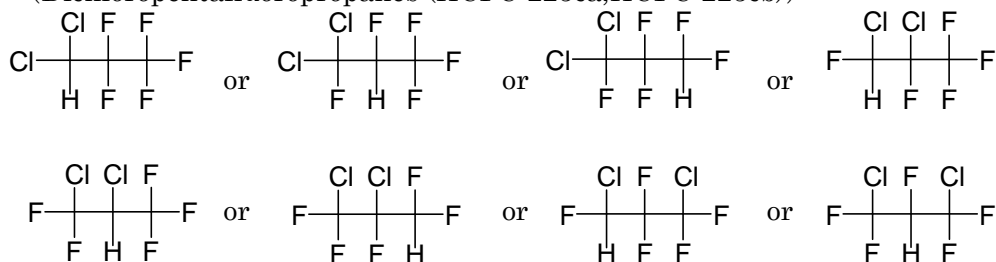
- ジクロロフルオロエタン (HCFC-141,HCFC-141b)  
(Dichlorofluoroethanes (HCFC-141,HCFC-141b))



- クロロジフルオロエタン (HCFC-142,HCFC-142b)  
(Chlorodifluoroethanes (HCFC-142,HCFC-142b))



- ジクロロペンタフルオロプロパン (HCFC-225ca,HCFC-225cb)  
(Dichloropentafluoropropanes (HCFC-225ca,HCFC-225cb))



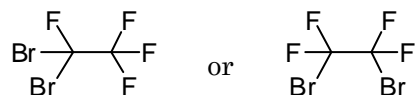
- ブロモクロロジフルオロメタン (Halon-1211)  
(Bromochlorodifluoromethane (Halon-1211))



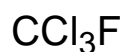
- － ブロモトリフルオロメタン (Halon-1301)  
(Bromotrifluoromethane (Halon-1301))



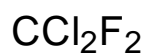
- － ジブロモテトラフルオロエタン (Halon-2402)  
(Dibromotetrafluoroethanes (Halon-2402))



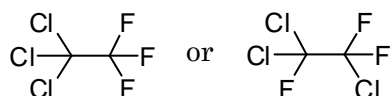
- － トリクロロフルオロメタン (CFC-11)  
(Trichlorofluoromethane (CFC-11))



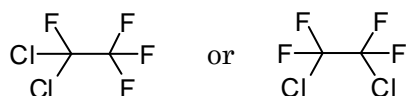
- － ジクロロジフルオロメタン (CFC-12)  
(Dichlorodifluoromethane (CFC-12))



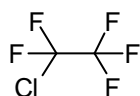
- － トリクロロトリフルオロエタン (CFC-113)  
(Trichlorotrifluoroethanes (CFC-113))



- － ジクロロテトラフルオロエタン (CFC-114)  
(Dichlorotetrafluoroethanes (CFC-114))

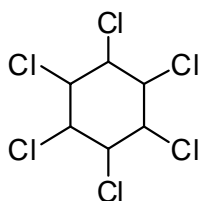


- － クロロペンタフルオロエタン (CFC-115)  
(Chloropentafluoroethane (CFC-115))



(G) 飽和脂環式炭化水素、不飽和脂環式炭化水素又はシクロテルペンのハロゲン化誘導体  
(Halogenated derivatives of cyclanic, cyclenic or cycloterpenic hydrocarbons)

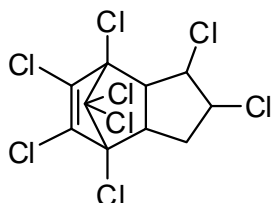
- (1) 1,2,3,4,5,6-ヘキサクロシクロヘキサン (HCH (ISO))  
(1,2,3,4,5,6-Hexachlorocyclohexane (HCH (ISO)))



- (2) シクロプロパン又はシクロブタンのハロゲン化誘導体  
(Halogenated derivatives of cyclopropane or cyclobutane)

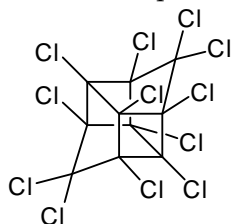


- (3) オクタクロロテトラヒドロ-4,7-エンドメチレンインダン  
(Octachlorotetrahydro-4,7-endomethyleneindane)



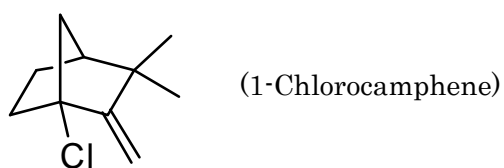
- (4) かご型構造の炭化水素のハロゲン化誘導体  
(Halogenated derivatives of “cage” structure hydrocarbons)

- ドデカクロロペンタシクロ[5.2.1.0<sup>2,6</sup>.0<sup>3,9</sup>.0<sup>5,8</sup>]デカン (マイレックス)  
(Dodecachloropentacyclo[5.2.1.0<sup>2,6</sup>.0<sup>3,9</sup>.0<sup>5,8</sup>] decane : Mirex)

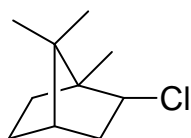


- (5) シクロテルペンのハロゲン化誘導体  
(Halogenated derivatives of cycloterpenes)

- クロロカンフェン  
(Chlorocamphenes)



- 塩化ボルニル  
(Bornyl chloride)



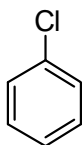


## (H) 芳香族炭化水素のハロゲン化誘導体

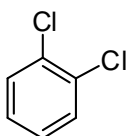
(Halogenated derivatives of aromatic hydrocarbons)

(1) クロロベンゼン

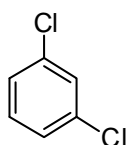
(Chlorobenzene)



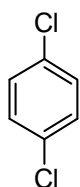
(2) オルト-ジクロロベンゼン

*(o*-Dichlorobenzene)

(3) メタ-ジクロロベンゼン

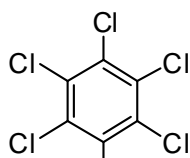
*(m*-Dichlorobenzene)

(4) パラ-ジクロロベンゼン

*(p*-Dichlorobenzene)

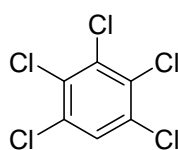
(5) ヘキサクロロベンゼン (ISO)

(Hexachlorobenzene (ISO))



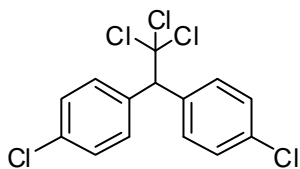
ペンタクロロベンゼン (ISO)

(Pentachlorobenzen (ISO))



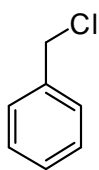
(6) DDT (ISO) (クロフェノタン (INN)、1,1,1-トリクロロ-2,2-ビス(パラ-クロロフェニル)エタン  
又はジクロロジフェニルトリクロロエタン)

(DDT (ISO) (clofenotane (INN), 1,1,1-trichloro-2,2-bis(*p*-chlorophenyl)ethane or  
dichlorodiphenyltrichloroethane))



(7) 塩化ベンジル

(Benzyl chloride)

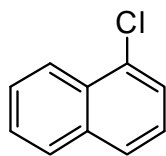


(8) モノクロロナフタレン

(Monochloronaphthalenes)

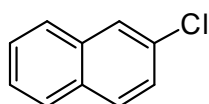
— アルファ-クロロナフタレン

( $\alpha$ -Chloronaphthalene)



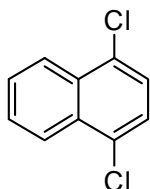
— ベータ-クロロナフタレン

( $\beta$ -Chloronaphthalene)

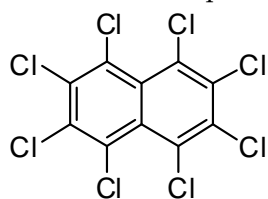


(9) 1,4-ジクロロナフタレン

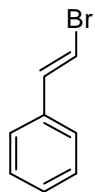
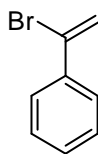
(1,4-Dichloronaphthalene)



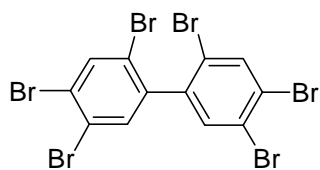
- ・ オクタクロロナフタレン  
(Octachloronaphthalene)



- (10) ブロモスチレン  
(Bromostyrenes)

 $\beta$ Bromostyrene $\alpha$ Bromostyrene

- (11) ヘキサブロモビフェニル  
(Hexabromobiphenyls)  
-2,2',4,4',5,5'-ヘキサブロモビフェニル  
(2,2',4,4',5,5'- hexabromobiphenyl)



- 3,3',4,4',5,5'-ヘキサブロモビフェニル  
(3,3',4,4',5,5'- hexabromobiphenyl)

