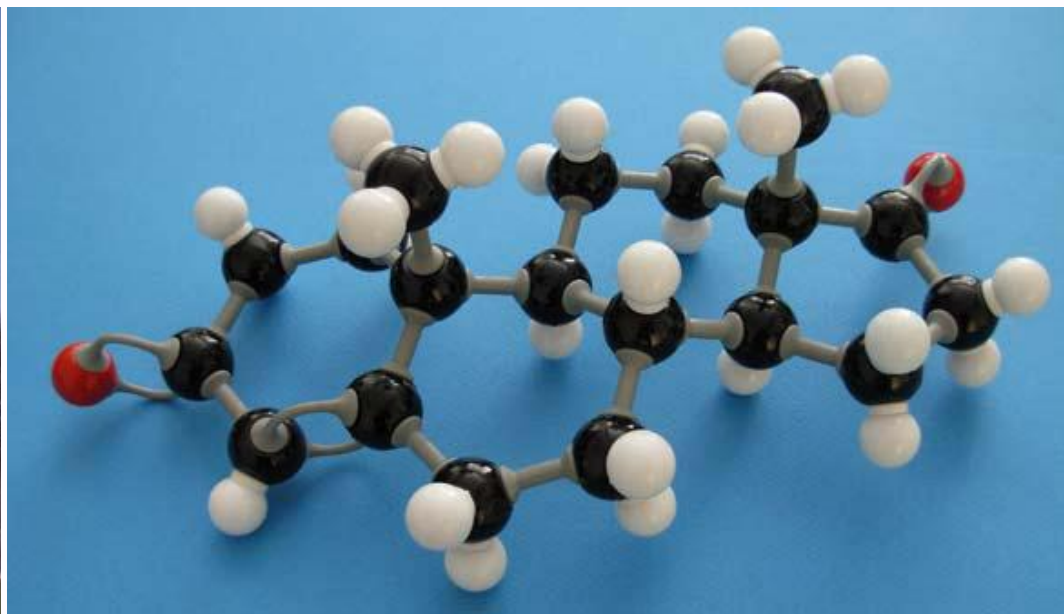
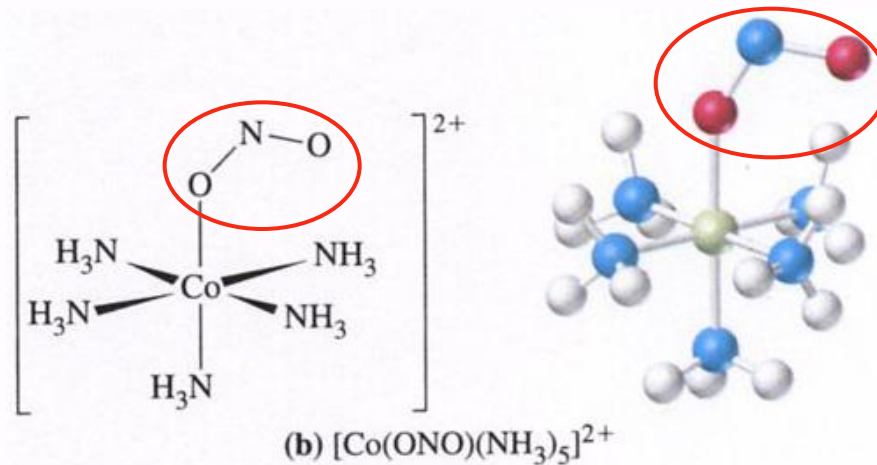
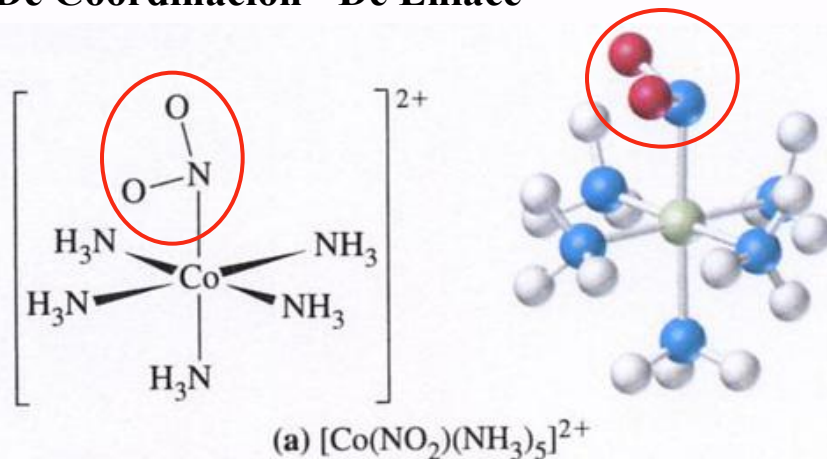


Moléculas poliatómicas (2)

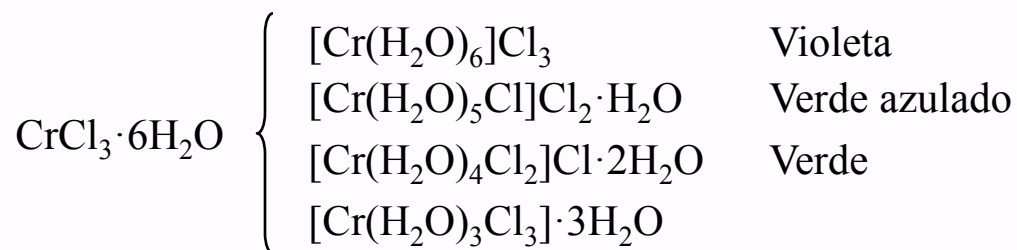


Isomerías

De Coordinación - De Enlace



Estructural - De Hidratación

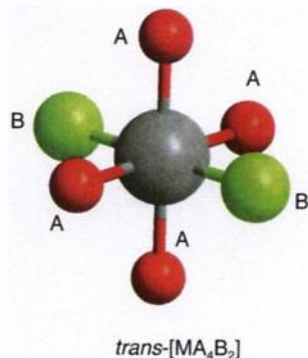
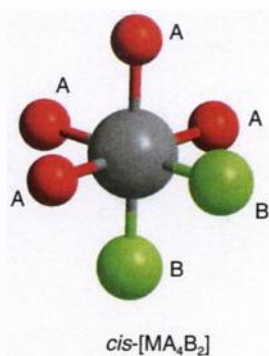
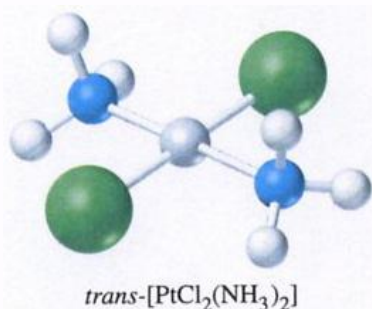
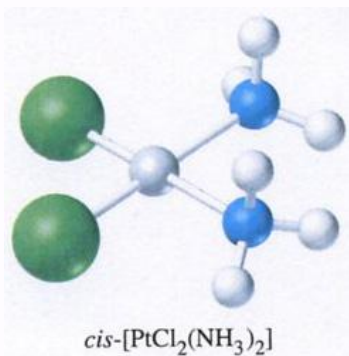


* Casabó i Gispert, J, "Estructura Atómica y Enlace Químico", Reverté, 1999, pp 167.

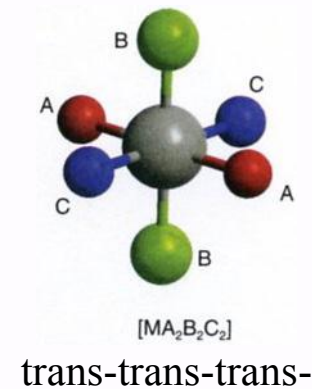
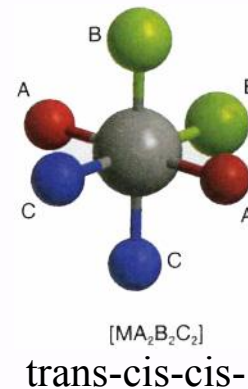
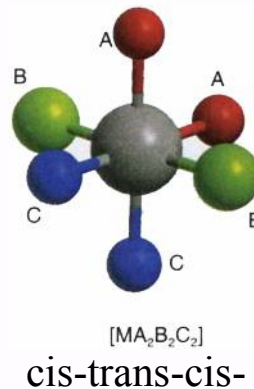
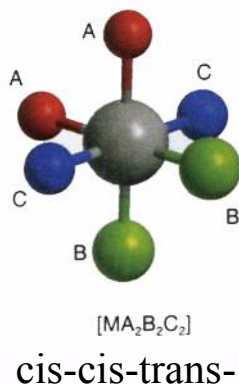
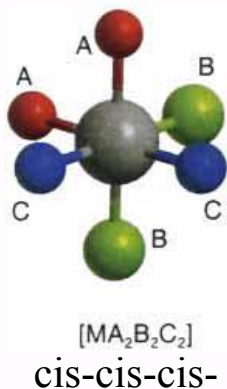
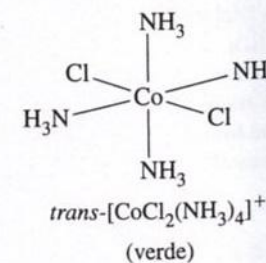
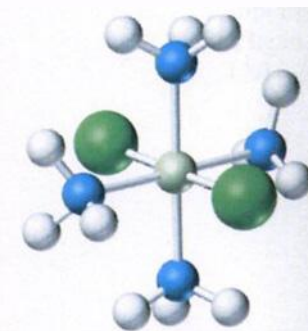
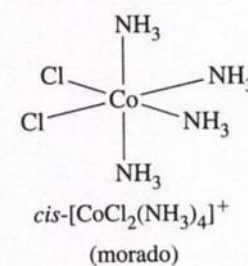
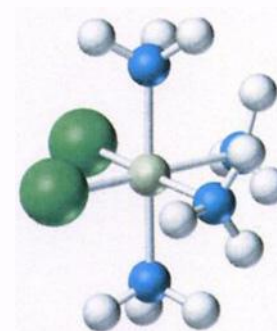
* Housecroft, C. E.; Sharpe, A. G., "Inorganic Chemistry", 3ª Ed., Pearson Prentice Hall, 2008, pp 54.

* Purcell, K. F.; Kotz, J. C., "Inorganic Chemistry", Saunders College, Philadelphia, 1977. Traducción española: "Química Inorgánica", Ed. Reverté, 1979, pp 770.

Isomerías
Geométrica



Diastereoisómeros



* Casabó i Gispert, J, "Estructura Atómica y Enlace Químico", Reverté, 1999, pp 167.

* Housecroft, C. E.; Sharpe, A. G., "Inorganic Chemistry", 3ª Ed., Pearson Prentice Hall, 2008, pp 54.

* Purcell, K. F.; Kotz, J. C., "Inorganic Chemistry", Saunders College, Philadelphia, 1977. Traducción española: "Química Inorgánica", Ed. Reverté, 1979, pp 770.

Isomerías
Geométrica

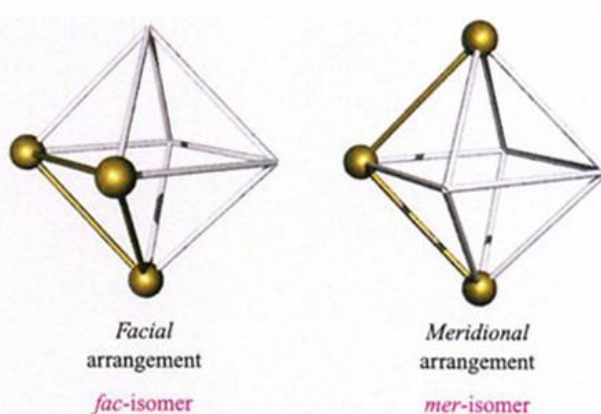
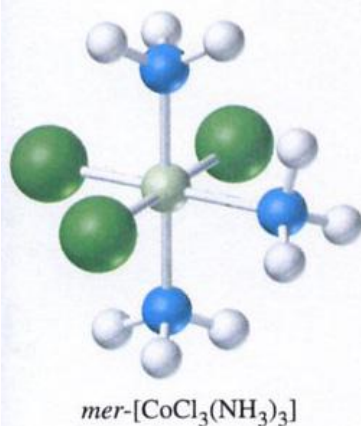
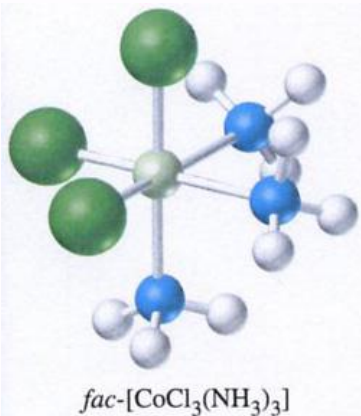
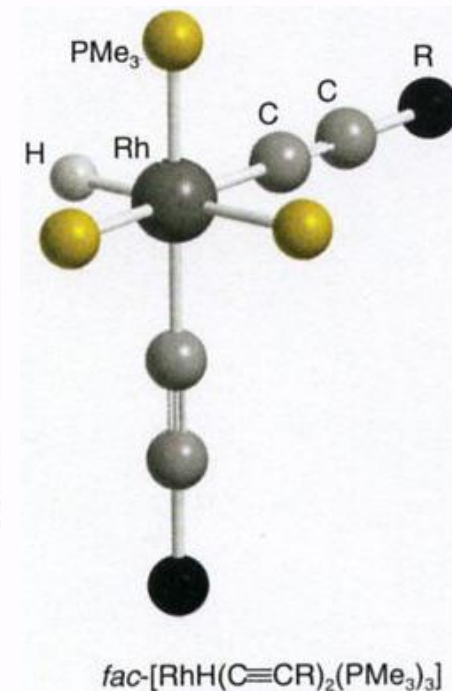
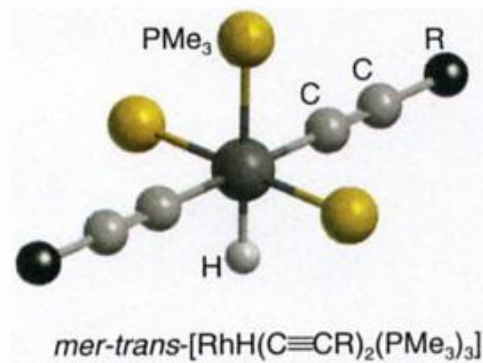
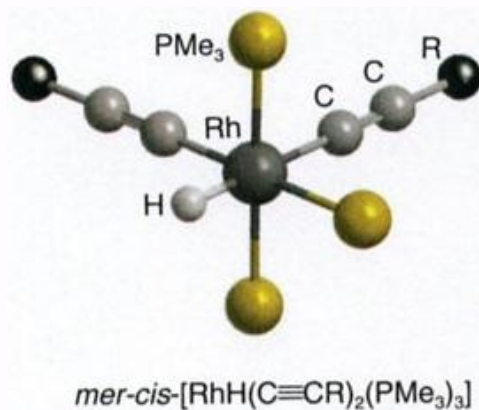
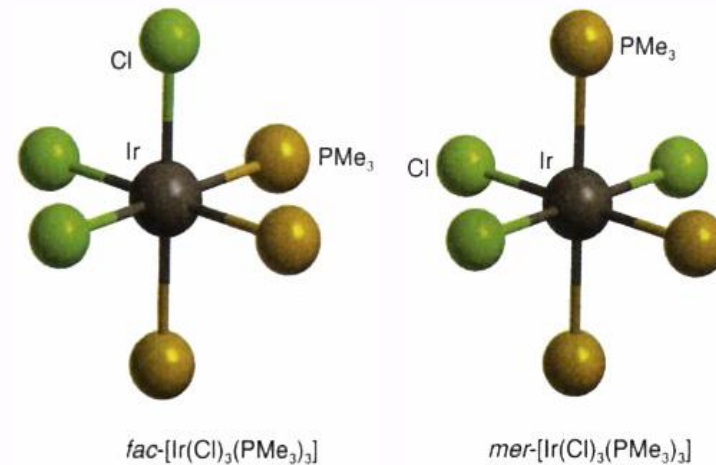


Fig. 2.17 The origin of the names *fac*- and *mer*-isomers. For clarity, the central atom is not shown.



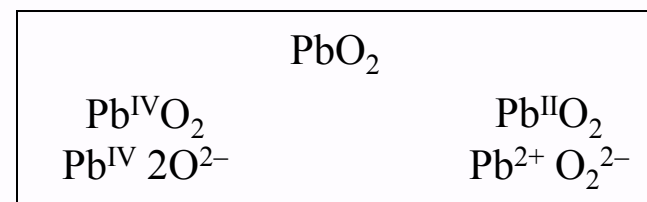
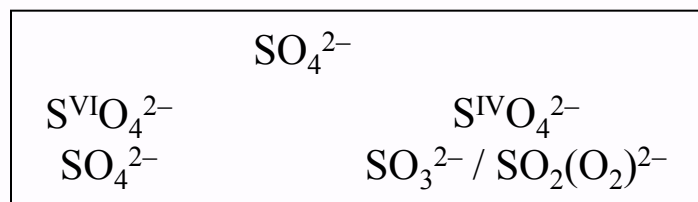
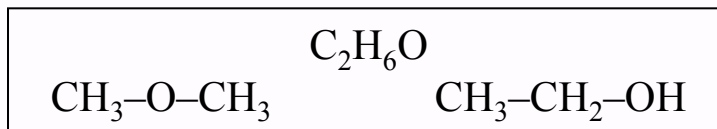
* Casabó i Gispert, J, "Estructura Atómica y Enlace Químico", Reverté, 1999, pp 167.

* Housecroft, C. E.; Sharpe, A. G., "Inorganic Chemistry", 3ª Ed., Pearson Prentice Hall, 2008, pp 54.

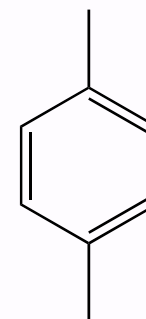
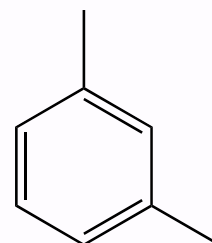
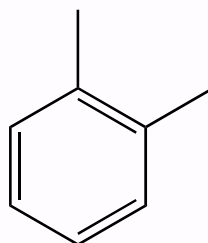
* Purcell, K. F.; Kotz, J. C., "Inorganic Chemistry", Saunders College, Philadelphia, 1977. Traducción española: "Química Inorgánica", Ed. Reverté, 1979, pp 770.

Isomerías

Funcional - De Grupo Funcional



Posicional

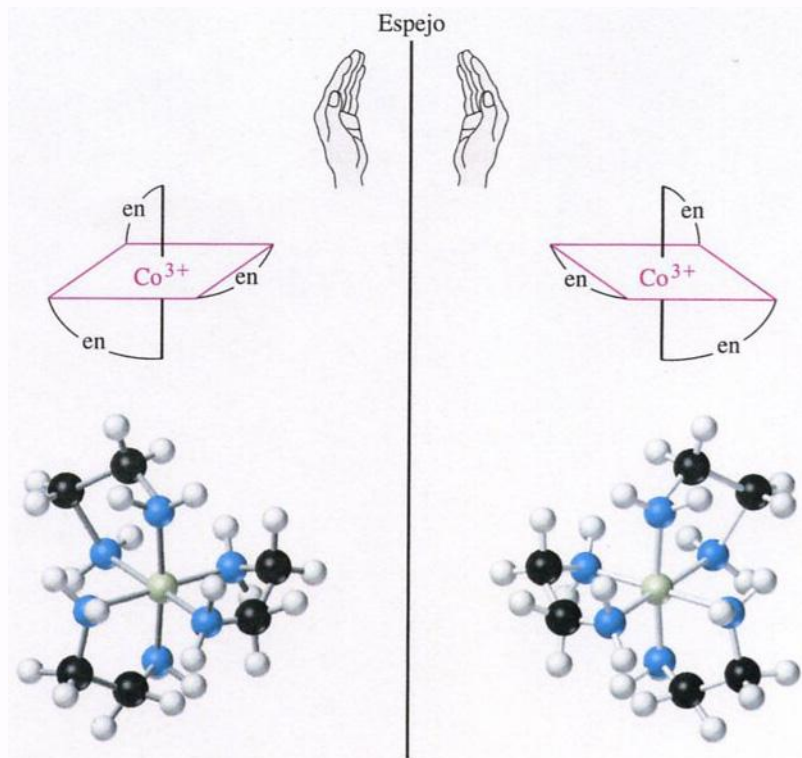


* Casabó i Gispert, J, "Estructura Atómica y Enlace Químico", Reverté, 1999, pp 167.

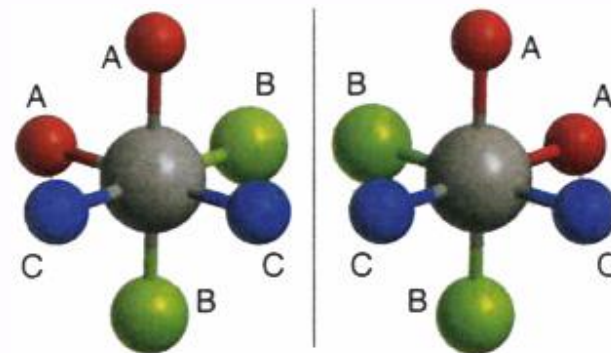
* Housecroft, C. E.; Sharpe, A. G., "Inorganic Chemistry", 3ª Ed., Pearson Prentice Hall, 2008, pp 54.

* Purcell, K. F.; Kotz, J. C., "Inorganic Chemistry", Saunders College, Philadelphia, 1977. Traducción española: "Química Inorgánica", Ed. Reverté, 1979, pp 770.

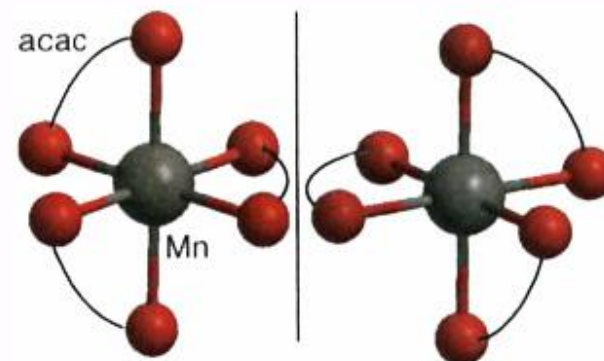
Isomerías
Óptica



Enantiómeros



$[\text{MA}_2\text{B}_2\text{C}_2]$ enantiómeros



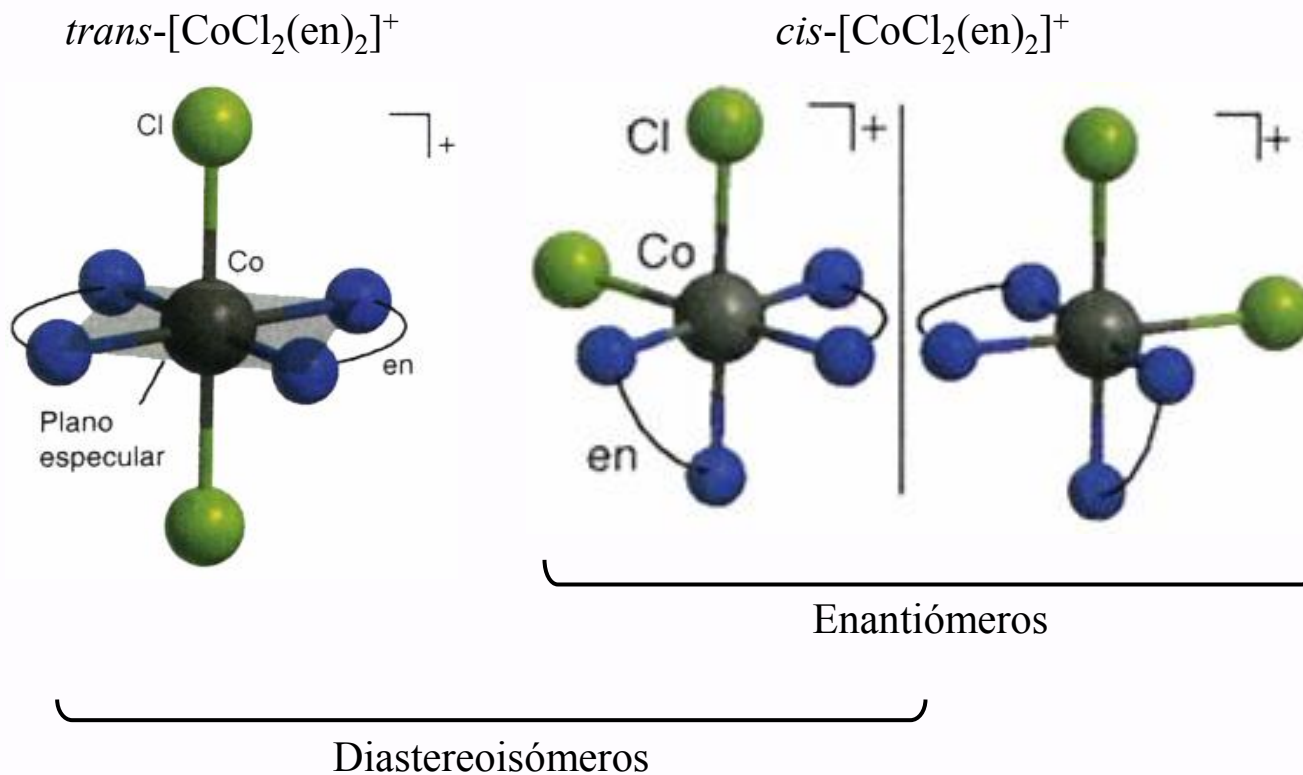
$[\text{Mn}(\text{acac})_2]$ enantiómeros

* Casabó i Gispert, J, "Estructura Atómica y Enlace Químico", Reverté, 1999, pp 167.

* Housecroft, C. E.; Sharpe, A. G., "Inorganic Chemistry", 3ª Ed., Pearson Prentice Hall, 2008, pp 54.

* Purcell, K. F.; Kotz, J. C., "Inorganic Chemistry", Saunders College, Philadelphia, 1977. Traducción española: "Química Inorgánica", Ed. Reverté, 1979, pp 770.

Isomerías
Óptica



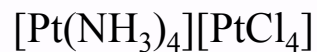
* Casabó i Gispert, J, “Estructura Atómica y Enlace Químico”, Reverté, 1999, pp 167.

* Housecroft, C. E.; Sharpe, A. G., “Inorganic Chemistry”, 3ª Ed., Pearson Prentice Hall, 2008, pp 54.

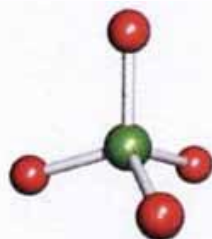
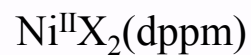
* Purcell, K. F.; Kotz, J. C., “Inorganic Chemistry”, Saunders College, Philadelphia, 1977. Traducción española: “Química Inorgánica”, Ed. Reverté, 1979, pp 770.

Isomerías

De Polimerización



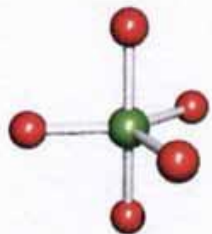
De conformación



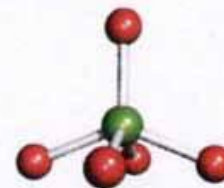
Tetrahedral



Square planar



Trigonal bipyramidal



Square-based pyramidal

* Casabó i Gispert, J, "Estructura Atómica y Enlace Químico", Reverté, 1999, pp 167.

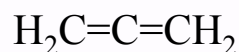
* Housecroft, C. E.; Sharpe, A. G., "Inorganic Chemistry", 3ª Ed., Pearson Prentice Hall, 2008, pp 54.

* Purcell, K. F.; Kotz, J. C., "Inorganic Chemistry", Saunders College, Philadelphia, 1977. Traducción española: "Química Inorgánica", Ed. Reverté, 1979, pp 770.

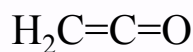
Principio Isoelectrónico

Moléculas con el mismo número de electrones y átomos pesados, tienen estructuras electrónicas similares, geometrías similares y propiedades químicas similares.

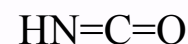
Moléculas e iones de 3 átomos pesados y 22 electrones totales:



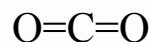
Aleno



Cetena



Ac. Isociánico



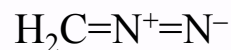
Dióxido de carbono



Oxido nitroso



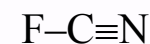
Ion azida



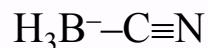
Diazometano



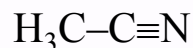
Ion nitrilo



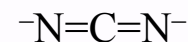
Fluoruro de cianógeno



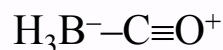
Ion cianoborohidruro



Acetonitrilo



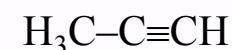
Ion cianamida



Carbonilborano



Ion metaborato



Metilacetileno

* Jolly, W. L., "Modern Inorganic Chemistry", 2ª Ed., McGraw-Hill, 1991, pp 48.

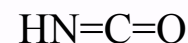
* Douglas, B.; McDaniel, D.; Alexander, J., "Concepts and Models of Inorganic Chemistry", 3ª Ed., John Wiley & Sons, 1994, pp 74.

* Housecroft, C. E.; Sharpe, A. G., "Inorganic Chemistry", Traducción española de la 2ª Ed. "Química Inorgánica", Pearson Prentice Hall, 2006, pp 43.

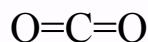
Principio Isoelectrónico

Moléculas con el mismo número de electrones y átomos pesados, tienen estructuras electrónicas similares, geometrías similares y propiedades químicas similares.

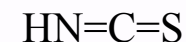
Moléculas e iones de 3 átomos pesados y 22 electrones totales, de los que 16 son de valencia:



Ac. Isociánico



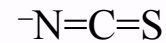
Dióxido de carbono



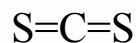
Ac. Tioisociánico



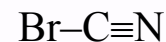
Sulfuro de dicarbonilo



Ion tioisocianato



Disulfuro de carbono



Bromuro de cianógeno

Todas estas especies tienen en común un esqueleto de átomos pesados lineal (180°) y valores similares de sus frecuencias vibracionales.

* Jolly, W. L., "Modern Inorganic Chemistry", 2ª Ed., McGraw-Hill, 1991, pp 48.

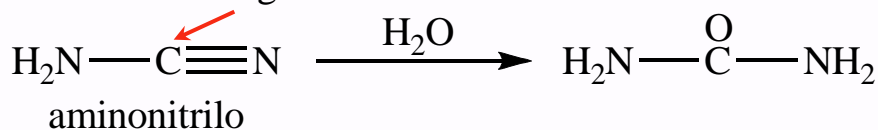
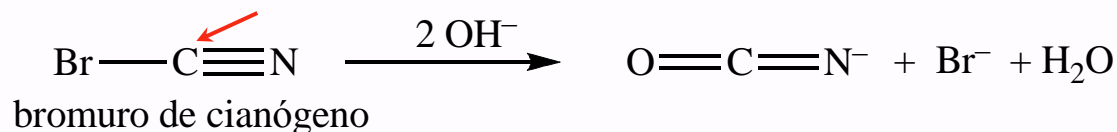
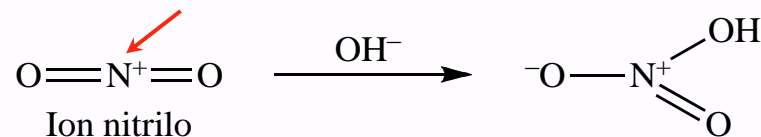
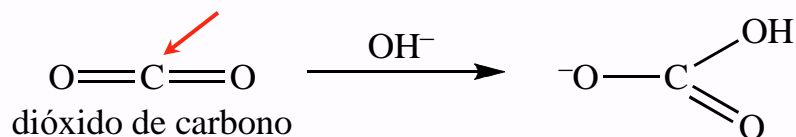
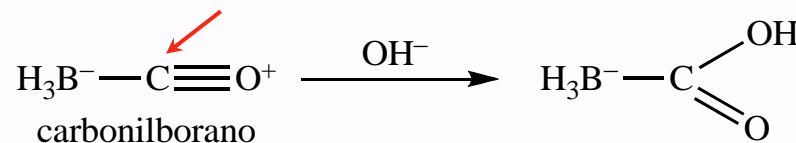
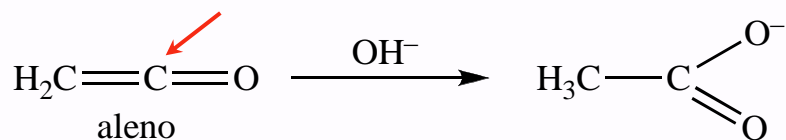
* Douglas, B.; McDaniel, D.; Alexander, J., "Concepts and Models of Inorganic Chemistry", 3ª Ed., John Wiley & Sons, 1994, pp 74.

* Housecroft, C. E.; Sharpe, A. G., "Inorganic Chemistry", Traducción española de la 2ª Ed. "Química Inorgánica", Pearson Prentice Hall, 2006, pp 43.

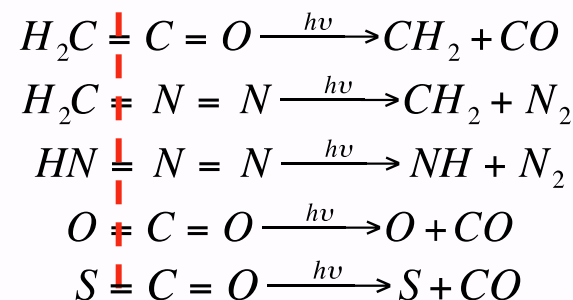
Principio Isoelectrónico

Moléculas con el mismo número de electrones y átomos pesados, tienen estructuras electrónicas similares, geometrías similares y propiedades químicas similares.

Muchas de estas especies sufren reacciones análogas frente a un mismo reactivo. Bases de Lewis como el $(\text{OH})^-$ o el H_2O atacan a la molécula en el átomo central:



Se fragmentan de modo similar por irradiación UV:



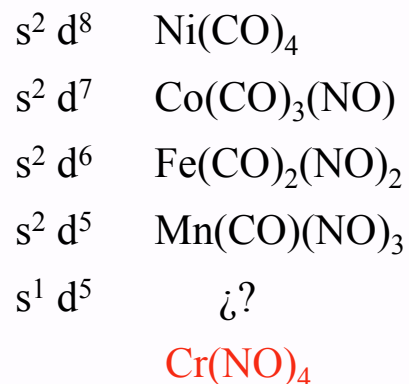
* Jolly, W. L., "Modern Inorganic Chemistry", 2ª Ed., McGraw-Hill, 1991, pp 48.

* Douglas, B.; McDaniel, D.; Alexander, J., "Concepts and Models of Inorganic Chemistry", 3ª Ed., John Wiley & Sons, 1994, pp 74.

* Housecroft, C. E.; Sharpe, A. G., "Inorganic Chemistry", Traducción española de la 2ª Ed. "Química Inorgánica", Pearson Prentice Hall, 2006, pp 43.

Principio Isoelectrónico

La existencia de análogos isoelectrónicos de un compuesto desconocido, puede servir de estímulo para su primera síntesis. En 1971 se conocen (CO - η^2) (NO - η^3)



Cr(NO)₄ preparado por fotólisis
de Cr(CO)₆ en presencia de NO

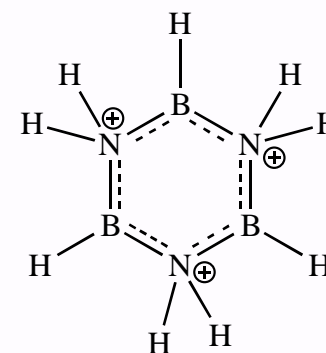
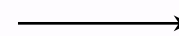
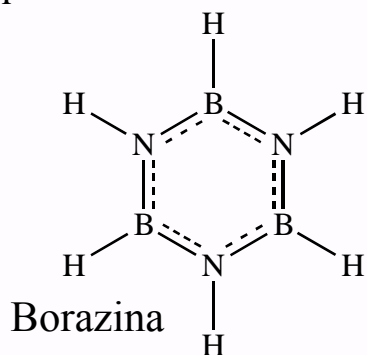
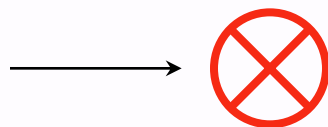
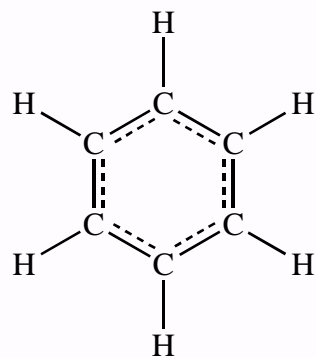
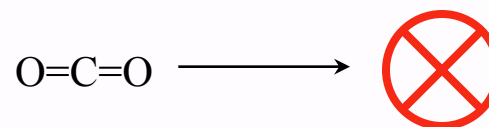
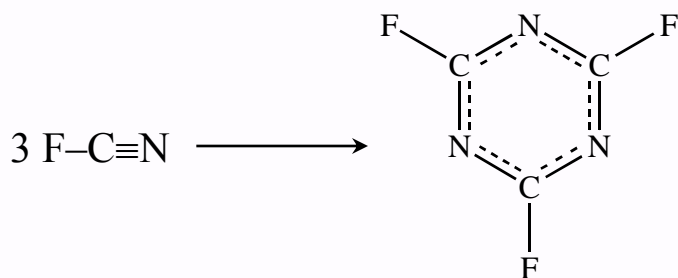
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* Douglas, B.; McDaniel, D.; Alexander, J., "Concepts and Models of Inorganic Chemistry", 3ª Ed., John Wiley & Sons, 1994, pp 74.

* Housecroft, C. E.; Sharpe, A. G., "Inorganic Chemistry", Traducción española de la 2ª Ed. "Química Inorgánica", Pearson Prentice Hall, 2006, pp 43.

Principio Isoelectrónico

Tiene sus limitaciones



* Jolly, W. L., "Modern Inorganic Chemistry", 2ª Ed., McGraw-Hill, 1991, pp 48.

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