



## Chromium Hexacarbonyl Ester Formation in Transition Metal Complexes

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### DESCRIPTION

Chromium also occurs in divalent state and primarily as a ferrous chromite, where Cr is in chromic state, which is the most stable for oxidation state. Many of the metal complexes show antimicrobial activities and play a key role in pharmaceutical industry.

A new Schiff base (L<sub>22</sub>) was prepared and co-ordinated to Cr(III). It is odorless and tasteless metallic element which is found in earth's crust.

They include:

1. Partial hydrolysis products of Cr(III) nutritional supplements, which are capable of binding.
2. Highly reactive Cr(VI/V/IV) species and organic radicals.

The Two poly-dentate base complexes of Ru(III), Cr(III) and Fe(III) were synthesized and used in catalytic oxidation. Due to excessive exposure of chromium, in any form, it leads to several diseases along with symptoms such as nausea, vomiting, vertigo, fever and muscle cramps. The reduction of Cr(VI) is considered to serve as a detoxification process when it occurs at a distance from the target site for toxic or geno-toxic effect.

Both free ligand and metals complexes are transition metals for titanium, vanadium and chromium which show the biological activities. The uses of chromium in ferrous alloys, doesn't requires any pure metal. Cr has been reported to interact with cysteine and histidine of cellular proteins of microbes, resulting in the formation of stable complexes.

The metallic chromium which offers a fair number of Cr (II) compound includes oxides and dihalides. It is obtained commercially by heating the ore in presence of aluminum or silicon. The concentration of chromium in water varies according to their type of surrounding industrial sources and nature.

The compounds have been widely used as corrosion inhibitors and in manufacture of pigments, metal finishing and chrome

plating, and wood preservatives. The oxide of Cro, a black powder is formed by exposing the chromium amalgam to air. It is not well characterized.

It is used in metallurgy to impart the corrosion resistance. The trivalent chromium is found in foods and supplements. It might help to keep the blood sugar levels normal by improving the way at which the body uses insulin. Potassium dichromate is a chemical reagent, which is used in cleaning laboratory glassware. The sodium chromite is leached out with water and converted into sodium dichromate by addition of concentrated sulfuric acid.

When CrO<sub>3</sub> dissolved in Tertiary Amyl Alcohol (TAA) it is mixed at room temperature with an ethanolic solution of phthalic acid, reduction of chromium (VI) by ethanol. The chromium is then added to iron and nickel in the form of ferrochromium that produce alloys. The chromate and dichromate ions are in equilibrium, with orange dichromate that being favoured in acidic conditions. The toxicity rises with an increase in oxidation state. The pure chromium is produced by thermal reduction of Cr<sub>2</sub>O<sub>3</sub> with aluminum or by electrolysis of trivalent chromium solutions.

Chromium hexacarbonyl catalyst is a gasoline additive. The sodium dichromate is soluble in cold and hot water and insoluble in alcohol; and then the toxic fumes of sodium monoxide are emitted. Several chromium compounds are used as chemical catalyst for the production of hydrocarbon.

### CONCLUSION

The drugs which are metal-based are found in most of the promising compounds which is used. Many challenges were present regarding the synthesis of new Cr-complexes. The main activity of Cr(III)-complexes is comparable which are better than that of clinical drugs. The chromium that combines with oxygen before the ability of iron is present at different forms of chromium oxide layers. It is also used in various food, feed additives, and other Cr compounds.

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