W. R. Grace & Co.-Conn.
Lanthanum Carbonate Product Stewardship Summary

I. Overview

Lanthanum carbonate is used by Grace as a raw material in an industrial setting for production of Fluid Cracking Catalysts (FCC). Grace does not commercially supply lanthanum carbonate. The substance is an inorgnaic solid that is poorly soluble, not flammable, not highly reactive and not corrosive. It is stable in the environment under neutral or basic conditions, and is not expected to biodegrade. Under acidic conditions, lanthanum carbonate undergoes a transformation and dissolution. Lanthanum has the potential to bioaccumulate in the environment with the amount of bioaccumulation strongly dependent on the form of the metal and the environmental conditions.

II. Chemical Identity - Physical and Chemical Properties

Chemical Identity:
Substance Name: Lanthanum Carbonate Octahydrate
CAS RN: 587-26-8
EINECS No: 209-599-5
MF: $La_2C_3O_9$
Alternate Names: Dilanthanum tricarbonate; Lanthanum Carbonate Octahydrate; Lanthanum (III) Carbonate; Lanthanum Carbonate; Carbonic acid, lanthanum (3+) salt (3:2), octahydrate
Alternate CAS RNs: 6487-39-4 (Octahydrate); 54451-24-0

Physical Chemical Properties

Melting Point: >400 °C
Boiling Point: >400 °C
Vapor Point: Non-volatile
Density: 2.022
pH: Not available, poorly soluble
Physical State: Solid
Water Solubility: 1.25 mg/L at 20 °C (average); 0.8 mg/L at 10 °C; 1.81 mg/L at 30 °C
Oxidizing Properties: Does not oxidize
Other: does not self-ignite, is non-flammable, and is not an explosion concern.

III. Applications

Lanthanum is a critical component of FCC catalysts. The FCC process itself is an important conversion process within the modern petroleum refinery, providing high quantities of valuable fuels and petrochemical feedstocks from lesser quality feedstock. FCC catalysts convert heavy feedstocks, containing contaminant metals, into clean gasoline, diesel fuel oils and light olefins, such as propylene.

IV. Health Effects

Lanthanum carbonate is likely of minimal concern for human health effects if dosed orally. Light rare earth elements are generally moderately toxic however, lanthanum carbonate is used as a phosphate binder in humans and is generally well tolerated, even at high doses (clinical trials involving doses up to 4718 mg/day of lanthanum caused only GI symptoms in healthy adults).

It is not a skin irritant based on an in-vivo irritation assay, however skin irritation after long exposures cannot be excluded. The substance is not an eye irritant and is not corrosive. Sensitizing effects are not to be expected and it is not classified as a mutagen or carcinogen. Individuals in rare-earth mining areas show elevated lanthanum deposits in their hair, suggesting some potential for bioaccumulation in humans at environmental concentrations.

V. Environmental Effects

Data available for Lanthanum Carbonate is limited to Daphnia Acute testing. In lieu of additional data, read-across for other lanthanum (III) salts can be employed. Lanthanum (III) chloride has measured data for ecotoxicity, with the results expressed in terms of concentration of Lanthanum (III). Lanthanum Carbonate is poorly soluble, but if solubilized there is potential toxicity based on available lanthanum ions. No short-term effects were shown regarding the behavior, body length, weight or mortality of fish, nor on the mobility of aquatic invertebrates. Also no long-term negative effects on aquatic invertebrates were shown, and no abnormalities concerning algae were recognized.

VI. Environmental Fate

Lanthanum carbonate is an inorganic material that is stable in the environment under neutral or basic conditions. Lanthanum carbonate as an inorganic material is not expected to biodegrade. Under acidic conditions lanthanum carbonate undergoes a transformation and dissolution. Lanthanum has the potential to bioaccumulate in the environment. The amount of bioaccumulation strongly depends on metal form and conditions. Lanthanum itself is expected to adsorb strongly to soil, or sediment in the environment, but only marginal in food crops. The accumulation in plants differs as a consequence of plant and soil factors.

VII. Exposure Considerations

Use Description and Category: Lanthanum Carbonate is used by Grace as a raw material in an industrial setting for production of Fluid Cracking Catalysts.
Consumer Use: No
Potential for Exposure to Children: No
Production: No production by Grace
Use: The substance can be considered a site limited intermediate since it is not supplied or otherwise distributed by Grace.

Exposure Summary: Lanthanum carbonate used by Grace is employed in industrial setting as a raw material for catalyst production. Primary potential exposure and release points will occur during transfer operations between production and use. There is a low potential for concern to human health and the aquatic environment, and the use pattern suggests low potential for exposure and release. Care should be taken during use of lanthanum carbonate to minimize exposure and release.

VIII. W. R. Grace Contacts

Please feel free to contact one of the following Grace representatives should you desire additional information or have questions.

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