



Himalaya
INDUSTRIES

Mfrs. of : Raney Nickel Catalyst, Precious Metal Catalyst & Salts.

Catalyst for future.

RANEY NICKEL CATALYST (ACTIVE)

INTRODUCTION :

This is the special form of Nickel which comprises of finely divided spongy Nickel particles prepared by leaching out Aluminium under controlled conditions from a Nickel-Aluminium alloy by treating the alloy in its powder form with a concentrated solution of caustic soda. The slurry of finely divided spongy Nickel particles so obtained is washed with large quantities of water till its nearly free from free caustic. Raney Nickel is highly pyrophoric when dry i.e. catches fire when allowed to dry in atmosphere so, it is always kept submerged under water or a suitable solvent such as Ethanol, Cyclohexane, Dioxane etc. the commercial transactions done on dry weight basis. Raney Nickel cannot be used in acidic reaction conditions below pH 5.5 because at that pH fine Nickel particles will start dissolving in the reactant/solvent, leading to rapid decline in activity.

USES / APPLICATIONS :

This special form of spongy, finely divided Nickel is a very powerful and versatile Hydrogenation Catalyst and is used in Hydrogenation of large number of functional groups notable among them being Carbon - Carbon double bond, Carbonyl (aldehydic and ketonic), Nitro, Azide, Nitrile, Oxime groups. Raney Nickel Catalyst is also used in foods, pharmaceuticals, aromatic, petrochemicals, sorbitol, rubber additives, dyes & drugs intermediates, pesticide intermediates, Caprolactum, fine organic chemicals industries and Hydrogenolysis (viz dehalogenation, debenzylolation) and Desulfurisation reactions and it can be used in batch as well as in continuous hydrogenation process.

It can also be used in hydrogenation reactions involving very high pressure and temperature. Due to its ability to hydrogenate virtually any type of functional group Raney Nickel is likely to hydrogenate most of the functional groups present on the molecule (of course to varying degrees) capable of getting hydrogenated, therefore its termed as non-specific catalyst.

Unlike most other Hydrogenation catalysts, **Raney Nickel Catalyst is not instantly poisoned by sulfur radicals if present in the reactants.** However, finely divided Nickel particles due to strong affinity for sulfur instantly react with sulfur present in any form in the molecule of the reactant, due to its this special property Raney Nickel is frequently used for desulfurisation and dehydrogenation reactions.



Advantages :

- Activated and ready to use.
- Accelerated settling properties resulting in improved filtration from product due to high density.
- Versatile use in wide range of hydrogenations.
- Large surface skeleton structure to impart high activity.
- Replacement of precious metal catalyst.
- Resistance to poisoning and sintering.



Grades of Raney Nickel Catalyst (Active) :

Himalaya Industries, manufacturers different grades which are coded as **HimCat - 1926, HimCat - 1981 & HimCat - 2016** based on our customers' need. The technical specifications for these grades can be obtained by contacting our manufacturing site. Company has capability of making Raney Nickel as per customer's specification such as very low activity, less pyrophoric, neutral pH low slurry density, high slurry density, special for Carbazole, special for de-sulfurisation, Molybdenum or Chromium promoted catalyst. Our catalysts are easy to filter and are guarded against small amount of oxidants.

Quality : Himalaya Industries is completely dedicated to improve the quality of the catalyst by continuous efforts and endeavors to retain and fortify the trust of our customers by ensuring that the best quality of the Raney Nickel Catalyst is delivered its Quality Management System ensure strict adherence to standard operating procedures while research and development meets the challenges in the areas of customized product development, improvement in quality, aspects & production processes.

Reactivation of Spent Raney Nickel Catalyst :

We have developed techniques of **reactivation of spent catalyst** and the job work is undertaken on commercial basis in our associate company at Metal Chem, Badlapur.

Product

RANEY NICKEL CATALYST (ACTIVE)

Description

Black Slurry of Finely divided metallic particles kept under water. Readily forms suspension on stirring. Ready to use catalyst.

Grade	HimCat 1926	HimCat 1981	HimCat 2016	HimCat 1023	HimCat 5996	HimCat 8491	HimCat 4891
Appearance	Clear to Light Milky in Supernatant Water.	Clear to Light Milky in Supernatant Water.	Clear to Light Milky in Supernatant Water.	Clear to Light Milky in Supernatant Water.	Clear to Light Milky in Supernatant Water.	Clear to Light Milky in Supernatant Water.	Clear to Light Milky in Supernatant Water.
pH	7 to 11	7 to 11	7 to 11	7 to 11	8 to 11	9 to 11	10 to 11
Chlorides	Absent	Absent	Absent	Absent	Absent	Absent	Absent
Sulphates	Absent	Absent	Absent	Absent	Absent	Absent	Absent
Iron Content	NA	NA	NA	NA	NA	NA	1-3 %
Molybdenum content	NA	NA	NA	NA	1-3 %	NA	NA
Nickel Content (w/w) on dry basis.	90-93%	88-90%	86-88%	85-89%	88-90%	84-87%	85-89%
Bulk Density in gms/ml.	1.50 to 1.60	1.50 to 1.70	1.70 to 2.00	1.25 to 1.45	1.8 to 2.0	1.8 to 2.0	1.6 to 1.8
Pyrophoric	Catches fire when it is dry to atmosphere	Catches fire when it is dry to atmosphere	Catches fire when it is dry to atmosphere	Catches fire when it is dry to atmosphere	Catches fire when it is dry to atmosphere	Catches fire when it is dry to atmosphere	Catches fire when it is dry to atmosphere
Activity With o-Nitrophenol (For 2.0 ml of Catalyst Slurry)	Average uptake of Hydrogen per minute shall NOT BE LESS THAN 110 ml.	Average uptake of Hydrogen per minute NOT BE LESS THAN 100 ml	Average uptake of Hydrogen per minute shall NOT BE LESS THAN 90 ml	Average uptake of Hydrogen per minute shall NOT BE LESS THAN 140 ml.	Average uptake of Hydrogen per minute shall NOT BE LESS THAN 85 ml.	Average uptake of Hydrogen per minute shall NOT BE LESS THAN 55 ml.	Average uptake of Hydrogen per minute shall NOT BE LESS THAN 80 ml.
Activity With o-Nitrobenzene (For 2.0 ml of Catalyst Slurry)	Average uptake of Hydrogen per minute shall BE 70-75 ml	Average uptake of Hydrogen per minute shall be 65 to 70 ml	Average uptake of Hydrogen per minute shall be 60-65 ml	Average uptake of Hydrogen per minute shall be 100 to 120	Average uptake of Hydrogen per minute shall be 40-50	Average uptake of Hydrogen per minute shall be 35-45	Average uptake of Hydrogen per minute shall be 45-60
Applications	Nitro to Amino, Oxime to Amine, Carbonyl to Alcohol, Debenzylation Ring Hydrogenation.	Aldehyde to Alcohol, Saturation to Olefinic double bond.	Nitrils to amines with higher recycles Ammonolysis of Alcohols dehydrogenation (high temp for longer period)	Aromatic Nitrile to Aromatic Amine, Carbonyl to Alcohol conversions, Fatty Nitrile to Fatty Amines, Aldehyde to Alcohol conversions	Aromatic Nitrile to Aromatic Amine, Polyols: Dextrose to Sorbitol, Mannitol, Xylitol etc, Aromatic Nitrile in presence of double bond, Oxidation reactions, Fatty Nitrile to Fatty Amine	Aromatic Nitrile to Aromatic Amine, Aldehyde to Alcohol conversions, Cyclization reactions dehydrogenation (high temp for longer period)	Dehydrogenation reaction, Sturdy catalyst which withstands high temperature, pressure and alkaline conditions, Aromatic Di-Nitro to Aromatic Di-Amino

Note : Use prescribed test procedures for the parameters

**Tailor made catalyst specific to the reaction can also be supplied against specific request.
(Catalyst with Pramotors / For Desulphrisation)**

Shelf Life : The activity of the catalyst does not drop below the specified level upto a period of 6 (six) months, from the date of manufacture if stored in a place where temperature does not go above 30°C (for best result use within one month from the date of manufacture)

Packing : The normally packing is 10 Kg. of Active Catalyst is packed in H.D.P.E. Drums of 20 Ltrs. capacity with double polythene bags inside. Catalyst is suspended in D.M. water (Packing size can be changed as per customer's requirement).

Certificate of Analysis (COA) : Is made available to all the customers irrespective of quantum of supply. Material safety information, technical specification and test methods however are supplied against specific request.

Weight of given quantity of catalyst on dry basis = 1.00 x 10⁻³ gms

About Us :

Himalaya Industries, established in year 1981, as a leading manufacturer of Nickel, Cobalt and Selenium Salts with installed capacity of 80 MT and Raney Nickel Catalyst about 120 MT per annum.

Company is innovation driven, people centric & client focused organization offering wide range of products & services to broad spectrum of Chemicals, Pharmaceuticals and other Industries. Our products are mainly used in the manufacturing of Bulk Drugs, Drug Intermediates, Glass Industries, Pesticides, Dyes & Dye-intermediates, Fine & Organic Chemicals etc. where hydrogenation is the key reaction. We have QC and R&D Center with all modern instruments & equipments with the world class infrastructure, We believe in developing processes for manufacturing high quality products in cost effective manner to improve the production with optimum utilization of resources and cost saving methods which provides us a competitive edge over others.

Mission :

Our goal is to emerge as a leader in providing high quality products by consistently striving for betterment in our quality, using latest technologies and tools with futuristic approach and to built strong relationships with the customers.

Our Other Products :

NICKEL	PALLADIUM	PLATINUM
Nickel - Aluminium Alloy (Ni-Al)	Palladium Metal (Pd)	Platinum Metal (Pt)
Nickel Oxide (NiO)	Palladium Chloride (PdCl ₂)	Platinum Chloride (PtCl ₂)
Nickel Salts	Palladium on Carbon (Pd/C)	Platinum on Carbon (Pt/C)

For any further queries please contact :



Mfrs. of : **Raney Nickel Catalyst, Precious Metal Catalyst & Salts.**

Plant :

Plot No. A-54, MIDC, Badlapur
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Tel. : (0251) 2690200, 2695021

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Tel. : (0251) 2709684