

BUY

26 October 2004

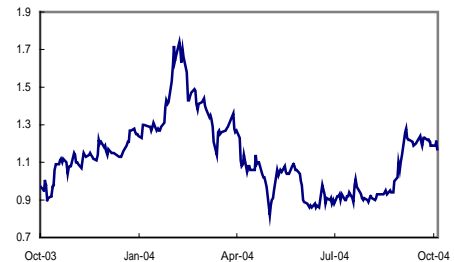
CRE: A recovery play

- **Bottoming-out of rare earth prices:** We see a sign of recovery in rare earth prices as market competition is easing. While demand has been picking up again, we expect this price up-cycle to sustain.
- **Improved Profitability:** Benefiting from the price rebound, CRE's rare earth division's gross margin improved by 500 bps to 15% in 1H04 when compared to a year ago, but it is still below the average of 20% achieved by CRE during the past four years.
- **Resilient refractory:** CRE's refractory division provides a strong recurrent income as the replacement needs from customers such as steel mills comprises a large part of the demand. Besides, this division is able to command a high operating margin of about 28%. It should offer some profit stability to the Group.
- **Process extension:** After the recent acquisition of the ceramics plant, CRE is now exploring business opportunities in the downstream rare earth products, which are high value-added materials, for better margins.
- **Financials:** CRE has a healthy balance sheet. Its net cash per share is estimated to be about HK\$0.25.
- **EPS outlook:** On the backdrop of the rare earth price recovery and the income from the newly acquired ceramics business, we expect CRE to post strong profit growth of 86% yoy to HK\$124mn for FY04. We also expect CRE's FY05 net profit to grow to HK\$147mn, representing a 19% yoy increase, when the rare earth margin continues to improve.
- **Valuation:** The stock is now trading at 9.0x FY04 and 7.6x FY05 PER, which is an undemanding valuation, in our view. We initiate our coverage of this under-researched stock with a BUY rating.

KEY DATA

<i>Sector</i>	<i>Basic materials</i>
<i>Share price</i>	<i>HK\$1.13</i>
<i>Stock code</i>	<i>0769 HK</i>
<i>Shares O/S</i>	<i>987.0mn</i>
<i>Mkt. Cap</i>	<i>HK\$1.12bn</i>
<i>52wks High-Low</i>	<i>HK\$1.79 – 0.80</i>
<i>NAV per share</i>	<i>HK\$1.01</i>
<i>Major Shareholders</i>	<i>Jiang Quanlong (60.0%) Martin Currie (6.7%)</i>

Price Performance



Source: Bloomberg

Earnings Summary

Year ended: Dec 31	FY02A	FY03A	FY04F	FY05F	FY06F
Turnover (HK\$ mn)	467.7	457.1	735.4	852.7	990.7
Net profit (HK\$ mn)	41.0	66.6	124.0	146.9	170.9
EPS (HK\$ cents)	5.0	8.2	12.6	14.9	17.3
DPS (HK\$ cents)	2.0	2.0	3.1	3.7	4.3
EPS growth (%)	(73.8)	64.0	53.2	18.5	16.3
PER (x)	22.6	13.8	9.0	7.6	6.5
Yield (%)	1.8	1.8	2.8	3.3	3.8

Sources: Group information. FSSL

CRE: A recovery play

China Rare Earth Holdings Limited (CRE) is primarily engaged in the processing and manufacture of two major products: rare earths and refractory materials. The Group operates one rare earth separating factory and one refractory production factory in Yixing, China. Total annual production capacity reaches 6,500 tonnes of rare earth oxides (REO) and 80,000 tonnes of refractory materials.

Rare earth products have a large variety of applications (please refer to our appendix). They are mainly used for producing electronic devices, computers, magnetic materials and special alloys. CRE's rare earth products are mainly exported to the US, Japan, Europe and Korea. Its major clients include Nippon Electric Glass, Siemens, and General Electronics.

The refractory materials are extensively used for heat-treatment facilities in the petrochemical, steel manufacturing and power generation industries. CRE's refractory materials are sold in the domestic market and exported mainly to Japan.

Rare earth prices have recently rebounded. While demand is picking up again and market competition is easing, it is likely that the current price up-cycle would sustain.

CRE is now exploring business opportunities in the downstream rare earth products, which are high value-added materials, for better margins. The Group is currently running a trial production on fluorescent materials.

On the back of improved margins and a new income stream from the acquisition of the ceramics manufacturing business, CRE's profitability returns to an upward trend. We initiate our coverage of this under-researched counter with a Buy rating.

Rare earth prices rebound

Prices in the rare earth industry declined in the last three years. The major culprit for the dramatic price fall was the rapid capacity expansion by industry participants, which were allured by the significant increase in demand and prevailing high prices in 1999/2000. However, shrinking demand from electronics and telecom industries subsequently caused three years of depressed rare earth prices because of the oversupply problem.

The PRC government proposed the industry restructuring to develop an orderly market.

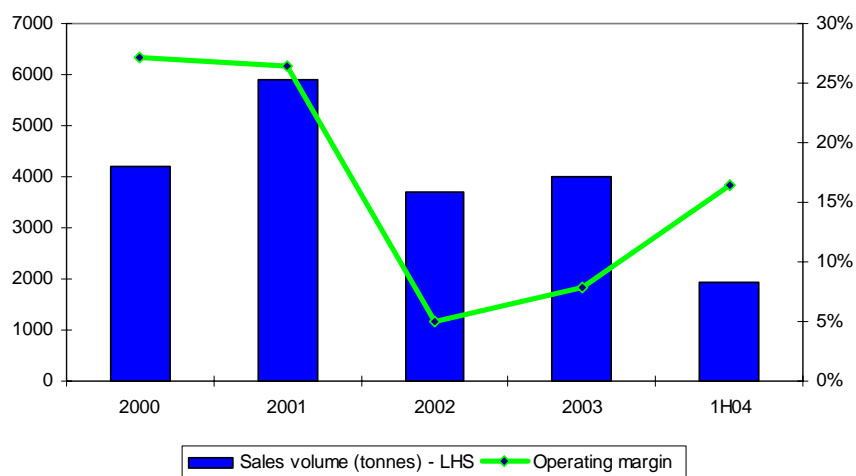
Due to price wars among domestic rare earth producers, the Chinese government has taken measures to curb the price decline. In 2002, the government proposed the industry to restructure into two regional groups – China North Rare Earth Group Co., and China South Rare Earth Group Co. This restructuring is aimed to reduce the number of processing companies and develop a healthy and orderly market. The government also decided not to issue new licenses for the prospecting and mining of rare earths until 2005 to limit the supply.

From the China Rare Earth Information Net, it was reported that 7 major rare earth manufacturers (including CRE) in Jiangsu province have proposed to curb their production outputs in order to boost up the product prices early this year. They targeted to raise prices of rare earths by not less than 30%. These 7 major manufacturers have great influence on the market as their combined production capacity accounts for more than 50% of the nation's total capacity.

The worst situation is already behind, in our view.

We believe that the worst situation is over. Benefiting from the price recovery, CRE's operating margin shows a sign of bottoming out. We also see that its rare earth sales volume has been picking up continuously since 2003, though the growth is moderate at about 8-10% per year.

CRE's rare earth division's historical margin & sales volume



Sources: Group information, FSSL

China has abundant rare earths

75% of rare earths in the world are processed by China.

China is the leading rare-earth producer, consumer and exporter in the world. According to "The Economics of Rare Earths", China has the largest rare earth reserves in the world. Benefiting from the cost advantage, the local availability of rare earth ores and its well-established technological infrastructure, China's processed rare earths now account for about 75% share of the global market, and its market share is expected to continue to grow due to its richness in the reserves and the strong demand growth in the domestic market.

China is also the world's largest consumer of rare earths. According to Roskill, an international metals and minerals research, China consumed approximately 29,500 tonnes of REO in 2003, representing about 35% of the global demand.

Top five countries' rare earth reserves

	Est. reserve mn tonnes REO	% of world total
China	43.0	41.3
Former USSR	19.0	18.3
USA	13.0	12.5
Australia	5.2	5.0
India	1.1	1.1
World total reserve	104.0	100

Sources: *The Economics of Rare Earths*, FSSL

The resilient refractory division

CRE's refractory division has a stable performance.

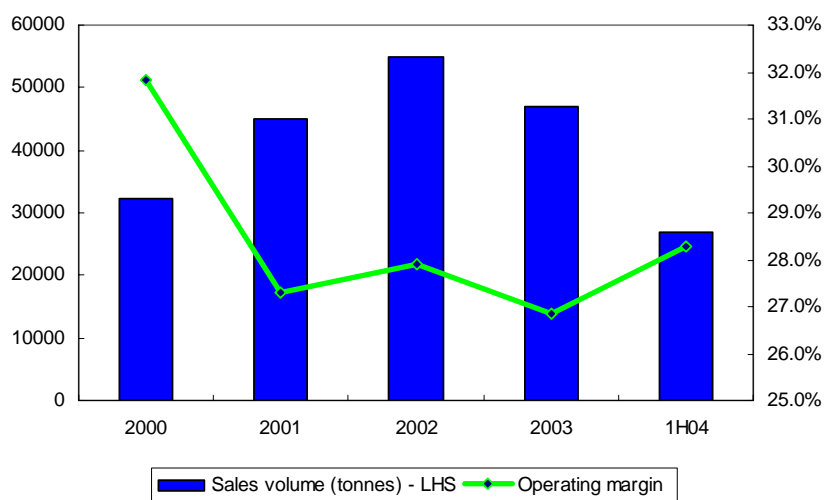
When the profit contribution from rare earths was affected by the price depression in the past few years, CRE's refractory division has demonstrated its relative stability. The refractory division accounted for 80% and 66% of its total operating profit in FY03 and 1H04 respectively.

The performance of the refractory division has been quite stable. Refractory materials are mainly used for heating facilities in the petrochemical, steel, glass and cement industries. They can withstand high temperatures and good wear resistance. As a significant portion of demand for refractory materials is

replacement needs, which should generate stable order flows to CRE. CRE's major customers in the PRC include steel mills such as Baosteel. Apart from the domestic sales, CRE also exports about 30% of its refractory materials to Japan.

Over the past years, CRE's refractory division has maintained its operating margin at around 28%, which is higher than the average margin of 20% in the rare earth division in 2001 to 2003. We believe that this division's growth momentum will be driven mainly by volume. Between 2000 and 2002, refractory sales volume reported a strong CAGR of about 30%. Owing to the impact of SARS, sales were affected in FY03, but we expect its sales to regain its momentum while the domestic economic growth remains robust.

CRE's refractory division's historical margin & sales volume



Sources: Group information, FSSL

The steel Industry is the major user of refractories

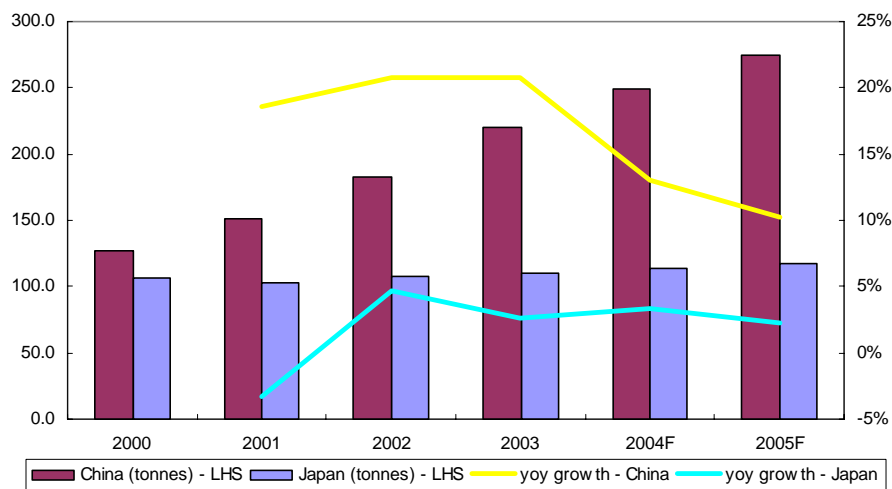
The robust growth in the PRC steel industry would bode well for refractories.

The steel industry is by far the major consumer of refractory materials as it takes up about 55-60% of the total demand. The other refractory consuming industries include non-ferrous, cement, glass, chemicals, petrochemicals. In our opinion, the growth prospect of the steel industry somehow reflects the future refractory demand.

China is now the world's largest crude steel producer. Owing to the robust economic growth, China's appetite for steel products continues to expand. According to the International Iron and Steel Institute, demand for steel products in China is expected to grow 13% yoy to 248mn metric tons in 2004 and 10% yoy to 274mn metric tons in 2005. China remains to be one of the world's driving forces for finished steel products. We believe that the strong growth in the steel industry should bode well for the refractory producers.

Japan is the second largest crude steel producer with an estimated annual growth rate of 2-3% over the next two years.

Crude steel production output in China and Japan



Sources: International Steel and Iron Institute, FSSL

A new income source – ceramics

CRE has a new profit contributor after the acquisition.

In the beginning of this year, CRE acquired Wuxi Pan-Asia, which is primarily engaged in the manufacture of high temperature ceramics business, for HK\$207mn. High temperature ceramics are mainly used in the electrical power industry.

The Group sees it as an earnings driver for 2004 as this business is able to command a higher gross margin of 40%. With the management's guidance, this newly acquired company achieved a net profit of about HK\$20mn in FY03. This could be another earnings driver for the Group. We hold an optimistic view of this segment as many numbers of power plants are coming on stream in the PRC.

However, the Group needed to amortize HK\$143mn goodwill arising from the acquisition. Assuming that it will be amortized over 20 years, the Group would have to bear about HK\$7.2mn of amortization per year. Together with a HK\$47mn loan carried from this subsidiary, the acquisition was priced at 12.7x estimated FY03 PER. In our view, the acquisition would have some EPS dilution effect in the near term.

1H04 results review

1H04 profit surge was due to a price rebound in rare earths.

CRE reported a net profit of HK\$59.8mn for 1H04, up 174% yoy. The profit surge was mainly attributable to a margin improvement from a rebound in rare earth prices and refractory sales recovered from SARS. Overall gross margin rose to 26% in 1H04 from 20% a year ago.

Rare earth division

Revenue from rare earths in 1H04 increased 63% yoy to HK\$159mn, while the division's operating profit surged 165% yoy to HK\$26mn. During 1H04, it sold 1,950 tonnes of rare earths in 1H04, up 10% yoy. The strong profit growth was mainly due to a 50% yoy increase in the average selling price. According to the Group, prices of some of the products such as terbium oxide and dysprosium oxide doubled during the period because of supply shortage. However, a 30% yoy increase of fuel and material costs offset some of the gains from rising prices. As a result, the division's gross margin only improved to 15% from 10% a year before.

The refractory division

Without the impact of SARS, 1H04 sales in the refractory division bounced back to

26,800 tonnes, representing a 30% yoy increase. This division's gross margin was stable at 30%.

During the period, the division had a new income source from the acquisition of Wuxi Pan-Asia. Wuxi Pan-Asia sold 6,400 tonnes of high temperature ceramics products in 1H04.

Driven by rising sales volume and the new acquisition, the division's 1H04 revenue jumped 79% yoy to HK\$178mn, and operating profit surged 159% yoy to HK\$50mn, accounting for two thirds of the Group's 1H04 total operating profit.

1H04 segment analysis

	% of 1H04 Sales	1H04 Sales volume (tonnes)	YoY chg (%)	Gross margin 1H04	YoY chg % points	% of operating profit
Rare earth division	47%	1,950	10	15%	+ 5 pts	34%
Refractory division	53%					66%
- Refractory materials		26,800	30	30%	unchanged	
- High temperature ceramics		6,400	40	40%	new operation	

Sources: Group information, FSSL

Financial position

CRE is in a net cash position.

CRE has a healthy balance sheet. The Group's operation generated a strong positive cash flow of HK\$86mn in 1H04. As at June 2004, CRE had a short-term loan of HK\$47mn mainly due to the new acquisition and cash and cash equivalents of HK\$250mn. As such, its net cash per share is around HK\$0.25.

Earnings forecast

We expect its refractory division to continue to be a stable earner for the Group. We assume that there would be 20% yoy volume growth in FY04, implying that sales volume would return to the pre-SARS level, and its gross margin remains flat at over 30%. For FY05 and FY06, we expect its gross margin to remain flat and sales volumes to grow by 10% per year.

For the rare earth division, we believe that the current price up-cycle would extend into the next few years when market competition is expected to ease. As a result, CRE's rare earth division's gross margin is likely to benefit from this trend. We assume that the gross margin would enhance from currently 15% to 18% in FY05 and 20% in FY06. It is worth noting that our assumption of 20% gross margin, which is the average of gross margins achieved by CRE during 2000 to 2003, is still far below the 34% achieved during the peak of the previous cycle.

As the 50% reduction of EIT for its two PRC subsidiaries will expire by the end of this year, and they are required to pay a normal tax rate of 24%, we hence expect the Group to incur additional tax expenses in FY05 and FY06, which partially offset some of gains from the growth in its core businesses.

Valuation

The stock is trading at 7.6x FY05 PER.

We estimate that CRE would post a net profit of HK\$124mn for FY04, up 86% yoy, on the back of the rare earth price recovery and the income from the newly acquired ceramics business. We expect CRE's FY05 net profit to grow to HK\$147mn, representing a 19% yoy increase, when the rare earth margin has a further improvement. The stock is now trading at 9.0x FY04 and 7.6x FY05 PER, which is an undemanding valuation, in our view.

Risk factor

Rare earth prices: Low transparency and high volatility

As far as we know, there are no market benchmarks in the PRC to track the price movements of rare earths. Prices are usually determined between customers and suppliers, depending on the quality of products and order quantity. From the past experience, prices in the rare earth market are quite volatile.

CRE's margin depends heavily on future price variables of each rare earth products and their raw material costs. As rare earth products have a huge variety of industrial applications, a price surge in a particular rare earth product due to strong demand could uplift the whole division's performance, or vice versa.

If market competition re-ignites or the global economic growth slows down, rare earth prices would be adversely affected, which in turn would have a major impact on processing companies' margins.

Earnings Summary

(HK\$mn)	FY02A	FY03A	FY04F	FY05F	FY06F
Turnover	467.7	457.1	735.4	852.7	990.7
- rare earth	206.1	208.3	357.8	432.9	523.9
- refractory	261.5	248.8	377.6	419.8	466.8
Cost of sales	<u>(363.6)</u>	<u>(345.0)</u>	<u>(545.2)</u>	<u>(622.8)</u>	<u>(716.7)</u>
Gross profit	104.1	112.0	190.2	229.9	274.0
Selling and distribution expenses	(13.4)	(14.2)	(22.1)	(23.0)	(24.8)
Administrative expenses	<u>(18.1)</u>	<u>(26.0)</u>	<u>(24.9)</u>	<u>(26.6)</u>	<u>(27.8)</u>
Operating profit	72.5	71.9	143.3	180.3	221.4
Other income net	(28.1)	1.1	0.0	0.0	0.0
Net finance costs	4.4	3.3	0.2	0.4	0.6
Profit before tax	48.9	76.3	142.9	182.3	223.4
Taxation	<u>(8.6)</u>	<u>(9.2)</u>	<u>(17.1)</u>	<u>(32.8)</u>	<u>(49.1)</u>
Profit before MI	40.3	67.0	125.7	149.5	174.3
MI	<u>0.7</u>	<u>(0.5)</u>	<u>(1.8)</u>	<u>(2.5)</u>	<u>(3.3)</u>
Net profit	<u>41.0</u>	<u>66.6</u>	<u>124.0</u>	<u>146.9</u>	<u>170.9</u>
EPS (HK\$ cents)					
- Basic	5.0	8.2	12.6	14.9	17.3
DPS (HK\$ cents)	2.0	2.0	3.1	3.7	4.3
Profitability (%)					
Gross margin	22.2%	24.5%	25.9%	27.0%	27.7%
Operating margin	15.5%	15.7%	19.5%	21.1%	22.3%
Net margin	8.8%	14.6%	16.9%	17.2%	17.3%
Growth (%)					
Turnover	-24.3%	-2.3%	60.9%	16.0%	16.2%
Gross profit	-43.2%	7.7%	69.8%	20.9%	19.2%
Operating profit	-53.9%	-0.9%	99.4%	25.8%	22.8%
Net profit	-71.1%	62.3%	86.2%	18.5%	16.3%
EPS	-73.8%	64.0%	53.2%	18.5%	16.3%
Effective tax rate (%)	17.6%	12.1%	12.0%	18.0%	22.0%

Sources: Group information, FSSL

Appendix: Rare earth basics

The rare-earth elements (REE) are the 15 lanthanide elements with atomic numbers 57 through 71 in the Periodic Table: lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium. The REE are represented by the single square of lanthanum in the main part of the Periodic Table and listed in a separate sub-table below the main groupings.

Periodic Table

H																	He
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La [*]	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac [^]															

[*]	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
[^]	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lw

Source: FSSL

REE are classified into two groups: the light or cerium subgroup, comprising the first seven elements (atomic numbers 57-63) and thorium; and the heavy or yttrium subgroup, comprising the elements with atomic numbers 64-71 as well as yttrium and scandium. Despite its low atomic weight, yttrium is categorized with the heavy REE because its properties are closer to those of the heavier REE than to the lighter group.

In the northern part of China, one of largest mines is Baiyunebo in Boutou Inner Mongolia, which comprises mainly light rare earth, while the main ingredient of mines in the southern part of China is heavy rare earth.

Applications

The major applications of REE are summarized in the table below. Current uses of REE are about 95% in the mixed form, on a volume basis, and individual elements account for the remaining 5%.

In the mixed form, about 35% of REE in the world are used as catalysts, mainly in the refining of crude oil. About 30% of REE are used in the glass/ceramics industry as glass-polishing compounds, decolourising agents, UV absorbers and antibrowning agents, glass and ceramic colouring agents, additives to structural ceramics such as stabilised zirconia and silicon nitride Si₃N₄, and in optical lenses and glasses. Another 30% of REE are used in metallurgy. The individual elements account for the remaining 5% of volume but over 50% of the monetary value.

Other industrial uses include: phosphors in colour TV and fluorescent lighting, garnet bubble storage devices, oxygen sensors, microwave ferrites and garnets, fibre optics, synthetic crystals used in lasers (especially Nd), lanthanum-nickel alloy for hydrogen storage, and gallium-gadolinium-garnet (GGG) as a memory film in computers. REE are also used in the nuclear industry in control rods, as dilutants, and in shielding, detectors and counters.

Applications of rare earth elements

The Light Subgroup

Element	Symbol	Comment	Application
Lanthanum	La	Component of mischmetal.	Aluminium alloys for aeroplanes and glass decolourising, ceramic glazes, optical glass, camera lenses
Cerium	Ce	Most abundant REE. Chief component of mischmetal.	Fluorescent powders, Ni-MH batteries, petroleum cracking catalysts, alloys - with iron for sparking flints for lighters, special additives for glass for reinforcement, catalyst for petroleum cracking, electronics components for computers, ovens, and air conditioners, exhaust purifiers of cars.
Praseodymium	Pr		Yellow ceramic pigments, tiles, ceramic capacitors
Neodymium	Nd	Important in magnetic alloys.	Ceramic capacitors, glazes and coloured glass, lasers, high strength permanent magnets as neodymium-iron-boron alloy, petroleum cracking catalysts, superconductors for the electronic industry, Ni-MH batteries for portable phones, high disk drives for computers.
Promethium	Pm	Not found in nature. Radioactive; produced only in nuclear reactors.	Radioactive promethium in batteries to power watches, guided missile instruments, etc, in harsh environments.
Samarium	Sm	Important in magnetic alloys.	In highly magnetic alloys for permanent magnet as Samarium-Cobalt alloy, glass lasers, reactor control and neutron shielding.
Europium	Eu	One of rarest, and most rare reactive of rare earths. Absorbs neutrons.	Control rods in nuclear reactors, coloured lamps, cathode ray tubes, red phosphor in colour television tubes.
Thorium	Th	Resembles nickel, as soft and as plentiful as lead. Radioactive.	Gas mantles. Can be used as nuclear fuel in place of uranium.

The Heavy Subgroup

Element	Symbol	Comment	Application
Gadolinium	Gd		Solid state lasers, GGG crystals, magnetic refrigeration materials.
Terbium	Tb	Associated with gadolinium.	Cathode ray tubes, magnets, optical computer memories, future hard disk components, magnetostrictive alloys.
Dysprosium	Dy	Absorbs neutrons. Magnetic alloy.	Controls nuclear reactors, materials for metallic Halogen lamps, alloyed with neodymium for permanent magnets. Catalysts.
Holmium	Ho	Absorbs neutrons.	Controls nuclear reactors, catalysts, refractories, surgical use lasers for removal of blood clots.
Erbium	Er	Physical properties almost identical with Holmium and Dysprosium.	Illuminants, superconductors, optical fibres, infra red glass.
Thulium	Tm	Gives x-rays on irradiation in nuclear reactor.	X-ray source in portable X-ray machines, lasers, superconductors.
Ytterbium	Yb	Properties very similar to Lutetium - not well known.	Superalloys, heat insulation coatings.
Lutetium	Lu	Chemical and physical properties not well known.	Deoxidiser in stainless steel production, rechargeable batteries, medical uses, red phosphors for colour television, superconductors.
Yttrium	Y	Associated with Holmium, Erbium. Cold or hot forged	Deoxidiser in stainless steel production, rechargeable batteries, medical uses, red phosphors for colour television, superconductors.

Sources: Group information, FSSL

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