

● Production Locations around the world.

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**Worldwide Associated  
Companies**

- |                 |                  |
|-----------------|------------------|
| -Argentina      | -Malaysia        |
| -Austria        | -Mexico          |
| -Belgium        | -Philippines     |
| -Brazil         | -Poland          |
| -Bulgaria       | -Portugal        |
| -China          | -Romania         |
| -Czech Republic | -Russia          |
| -Denmark        | -Slovakia        |
| -Egypt          | -Slovenia        |
| -Estland        | -Spain           |
| -Finland        | -South Africa    |
| -France         | -Sweden          |
| -Great Britain  | -Switzerland     |
| -Hongkong       | -Taiwan          |
| -Hungary        | -Thailand        |
| -India          | -The Netherlands |
| -Indonesia      | -Turkey          |
| -Iran           | -Ukraine         |
| -Italy          | -USA             |
| -Japan          | -Venezuela       |
| -Korea          |                  |



*Metal Cutting*



# Solutions for Metal Processing

## An Introduction .....

Welcome to Hardcastle Petrofer Private Ltd. (**HARDCASTLE PETROFER**), a Joint Venture in India between the Jatiyas of **HARDCASTLE** group and the world renowned Petrofer Germany.

## About Partners .....

**HARDCASTLE** has made pioneering efforts during its long market presence in the Indian Metal Processing Oils and Chemicals Industry.

**HARDCASTLE** was the first to introduce advanced technology products such as Polymer Quenchants and Fire Resistant Hydraulic Fluids to the Indian Industry by indigenously manufacturing and supporting the performance through unmatched service back-up.

**HARDCASTLE** is an approved supplier to an entire spectrum of leading industrial organizations in the Private and Public sectors in India.

On the other hand, from its origin in Central Europe, **PETROFER** has developed a worldwide network of associates and distributors to ensure that the needs of its international customers are met completely. **PETROFER's** commitment to quality assurance and the environment is reflected in its accreditation to the DIN EN ISO 9001, QS 9000, VDA 6.1 and DIN EN ISO 14001 standards.

The excellence of **PETROFER's** product range is the result of the Company's philosophy of continuous improvement and the dedication of its personnel at its development centre in Hildesheim, Germany.

## About us .....

Thus, **HARDCASTLE PETROFER** is an unparalleled combine of an Indian Company AND a German Company both having served their respective industries for over half a century. They have come together to complement each other's expertise and serve the Indian industry with their combined strength. **THE OBJECTIVE: TO EXCEED THE HIGHLY SPECIALISED EXPECTATIONS OF VARIED CUSTOMER NEEDS.**

The products of **HARDCASTLE PETROFER** play a vital role in a wide variety of industrial applications such as Heat Treatment, Metal Working, Cleaning, Wire Drawing, Corrosion Prevention, Fluid Power, Steel Rolling, Off-Shore Drilling, Mining, etc. In addition, highly specialised products are developed for a wide range of customised applications. The company has accreditation to ISO 9001-2008 and ISO 14001-2004 standards.

**HARDCASTLE PETROFER's** Indian manufacturing facility is located at Sarigam (near Vapi), Gujarat. You can always depend on **HARDCASTLE PETROFER's** team of qualified and experienced chemists and engineers, who will work with you to find the optimum solution to your needs.

## Cutting Coolant Product Range

### 1. INTRODUCTION

### 2. WATER DILUTABLE PRODUCTS:

- 2.1 Semi-Synthetic and Bio Stable Cutting Coolants
- 2.2 Semi-Synthetic Cutting Coolants with Aerospace Approvals
- 2.3 Water Soluble Cutting Coolants
- 2.4 Synthetic Cutting and Grinding Coolants

### 3. NEAT OILS:

- 3.1 Cutting Oils for Grinding
- 3.2 Cutting Oils for Deep Hole Drilling
- 3.3 Cutting Oils for Broaching
- 3.4 Cutting Oils for Honing
- 3.5 Cutting Oils for Minimum Quantity Lubrication
- 3.6 Cutting Oils for Hobbing
- 3.7 Cutting Oils for Lapping
- 3.8 Neat Oil for General Application



## 1. "High Performance And Environmentally Acceptable Metal Cutting Fluids "

The most important requirements to be met by coolants in metal cutting are reduction of tool wear, a high-quality surface finish and economy of use. To keep the cost as low as possible, it must be determined whether neat cutting oil or a water-dilutable cutting fluid should be used. Selection of the most suitable coolant depends upon the cutting process to be used and by the material of the work piece.

Neat cutting oils are especially suitable for complicated machining operations such as broaching, deep-boring, gear tooth cutting, honing. Water-dilutable products are preferred for operations where good rinsing and cooling properties are required along with excellent cutting performance.

**HARDCASTLE PETROFER** products provide the latest state of the art in coolant technology.

**HARDCASTLE PETROFER** coolants contain high performance additives, which are physiologically and hygienically harmless, selected emulsifiers and excellent corrosion inhibitors all of which provide efficiency and fully meet today's environmental standards.

**HARDCASTLE PETROFER** coolants reduce the temperature at the cutting edge by elimination of friction and deformation, thus improving performance and extending the life of expensive tools.

**HARDCASTLE PETROFER** water-dilutable coolants do not decompose. Selected ingredients allow control of the micro flora with constant pH-stability, thus assuring stable, long-lasting corrosion protection for machines and work pieces.

All **HARDCASTLE PETROFER** coolants are toxicologically and physiologically harmless and designed in full accordance with the highest standards of Health & Safety requirements to be met by cutting fluids. The ingredients are user friendly, some of which are also used in the cosmetic industry.

**HARDCASTLE PETROFER** coolants may be treated by all conventional disposal procedures. Some coolants are mineral-oil-free and do not emulsify tramp oils. Oil films may be skimmed from the surface of the coolant tanks and disposed off with waste oils. The disposal of cutting fluids has to be in accordance with local legal requirements. Recommendations of disposal procedures for our products, are available on request.

This brochure offers an overview of **HARDCASTLE PETROFER's** standard range of products. We will be pleased to provide additional information on our specialty products, which can be designed to meet our customer's individual requirements. For more detailed information on individual products listed in this catalogue, please ask for product data sheets as well as accompanying Material Safety Data Sheets.



## 2. WATER DILUTABLE PRODUCTS

### 2.1 Semi-Synthetic and Bio Stable Cutting Coolants

**Product description:**

HICUT series bio-stable, semi-synthetic coolants are specially designed to provide long sump life. These products have excellent lubricating properties and are environment friendly.

Product	Appearance (Diluted)	pH (5%)	Conc. (%)	Applications	Properties/ Features
HICUT BIO 150	Translucent Fluid	9.8	3 to 6	Suitable for majority of machining operations. Especially ideal for bearing industry and grinding/machining of all ferrous and most non-ferrous metals	Bio-stable semi-synthetic coolant
HICUT 6250	Whitish emulsion	9.70	5 to 7	Suitable for rough and fine machining of steel and cast iron material	Boron free bio-stable coolant
HICUT 6710	Whitish emulsion	9.90	5 to 7	Suitable for rough and fine machining of steel and cast iron material	High performance ester based boron free bio-stable coolant
HICUT 8100	Whitish emulsion	9.50	5 to 7	Suitable for rough and fine machining of aluminum, steel and cast iron material	Bio-stable coolant especially recommended for aluminum machining
HICUT 8020	Clear to slightly hazy	10.3	5 to 10	Suitable for rough and fine grinding operation mainly for the bearing industry	High performance new technology, boron & formaldehyde free semi-synthetic coolant
HICUT FTM	Off-white opaque	9.50	5 upto 15	Suitable for general and arduous machining operations of aluminium, steel and cast iron.	Mineral oil, chlorine and boron free product for a safer working environment

### 2.2 Semi Synthetic Cutting Coolants with Aerospace Approvals

**Product description:**

EMULCUT series new generation environment friendly semi-synthetic coolants specially designed to meet stringent machining requirements of industry. The products do not contain any secondary amines, nitrite, and conform to TRGS 611 regulations.

Product	Appearance (Diluted)	pH (5%)	Conc. (%)	Applications	Properties/ Features
EMULCUT 116	Slight Hazy	9.9	5 - 10 8 - 15 4 - 6	Drilling, turning, milling Reaming, sawing Grinding	Boron and formaldehyde free, high performance coolant for the machining of steel, cast iron, aluminum alloys, and difficult alloys. High multipurpose coolant, recommended for water of medium hardness.
EMULCUT 116 W	Slight Hazy	9.9	5 - 10 8 - 15 4 - 6	Drilling, turning, milling Reaming, sawing Grinding	Boron and formaldehyde free, high performance coolant for the machining of steel, cast iron, aluminum alloys, and difficult alloys. High multipurpose coolant, recommended for soft water.
EMULCUT 160	Slight Hazy	9.4	6 - 8 8 - 14 8 - 12 8 - 16 10 - 20	Turning, drilling, milling Deep drilling Thread forming Reaming Forming operations	Boron and formaldehyde free high performance coolant, recommended for water of medium hardness. Suited for the toughest machining operations on steel, cast iron, aluminium and titanium.



### 2.3 Water Soluble Cutting Coolants

**Product description:**

**HICUT Series** water soluble cutting coolant are fortified with various additives such as coupling agents, stabilizing agents and rust preventives. The products can be used for all types of general machining of ferrous and non-ferrous metals where there is a need for a high degree of oiliness for excellent residual lubrication.

Product	Appearance (Diluted)	pH (5%)	Conc. (%)	Applications	Properties/Features
<b>HICUT 160</b>	Milky white emulsion	9.30	5 to 10	Suitable for machining aluminum and its alloys	EP soluble oil, recommended for water of medium hardness
<b>HICUT 590</b>	Translucent emulsion	9.30	5 to 7	Suitable for use in various general purpose machining operations	Versatile soluble cutting oil offers good rust protection and recommended to use with medium hard water
<b>HICUT 940 HW</b>	Milky white emulsion	9.5	3 to 6	Suitable for general machining application	Soluble cutting oil recommended for use with medium hard water

### 2.4 Synthetic Cutting and Grinding Coolants

**Product description:**

**HIGRIND** series are synthetic oil free, water-soluble grinding concentrate. It contains additives with excellent wetting capability, ensuring a high grinding performance.

Product	Appearance (Diluted)	pH (5%)	Conc. (%)	Applications & Properties	Properties/Features
<b>HIGRIND CF</b>	Clear	10.8	2 to 10	Suitable for grinding bearing steel, cast iron, stainless steel and other high alloy steel	Water soluble grinding fluid
<b>HIGRIND SYN-ST</b>	Clear Solution	9.30	3 to 5	Suitable for steel roller and ball grinding operations	Synthetic water-soluble grinding concentrate, free from diethanolamine
<b>HIGRIND A 1000</b>	Clear Solution	9.5	3 to 5	Latest technology water soluble, synthetic grinding coolant, specially developed for carbide grinding.	Contains no mineral oil and free of boron, nitrites and formaldehyde. Prevents cobalt leaching.
<b>HIGRIND CRP</b>	Clear Solution	9.5	3 to 5	Recommended for all grinding applications and especially for Creep Feed Grinding on steel cast iron, coloured and nonferrous metals.	Oil-free Water soluble grinding fluid
<b>HIGRIND 1020 BF</b>	Clear Solution	9.4	4	Primarily developed for light to medium machining operations on steel and cast iron. Mainly recommended for grinding in the bearing industry.	Free of boric acid, and formaldehyde



### 3. NEAT OILS

#### 3.1 Cutting Oils for Grinding

**Product description:**

**HICUT N** series mineral oil based grinding oils have been specially developed for hard metal operations. These products are manufactured using selected base oils which are nearly free of aromatic hydrocarbons with a combination of EP and polar additives. This ensures excellent surface finish, enhanced tool life and optimum rinsing and cooling properties.

Product	Appearance	K. Viscosity (40°C, cSt)	Flash Point (°C)	Applications & Properties
<b>HICUT N-DCBN</b>	Clear Fluid	5.5	124	<i>Suitable for all kinds of grinding operations. Due to its low viscosity and well selected additives it provides excellent filtration, anti-mist properties and low drag-out. Contains selected inhibitors to avoid cobalt leaching.</i>
<b>HICUT N-CBN</b>	Clear Fluid	10.5	160	<i>Multi-functional neat cutting oil suitable for grinding, super finishing and rough machining of aluminium, magnesium, coloured metals, cast iron and steel.</i>  <i>Formulated using hydrocracked base oil having high viscosity index, high flashpoint and a low evaporation loss.</i>
<b>HICUT N VG 15 TG</b>	Clear Fluid	15	180	<i>Multi-functional neat cutting oil suitable for grinding, super finishing and rough machining of aluminium, magnesium, coloured metals, cast iron and steel.</i>



### 3.2 Cutting Oils for Deep Hole Drilling

**Product description:**

HICUT N series products are chlorine-free high performance deep hole boring and multi-purpose cutting oils suitable for machining of all kinds of steel.

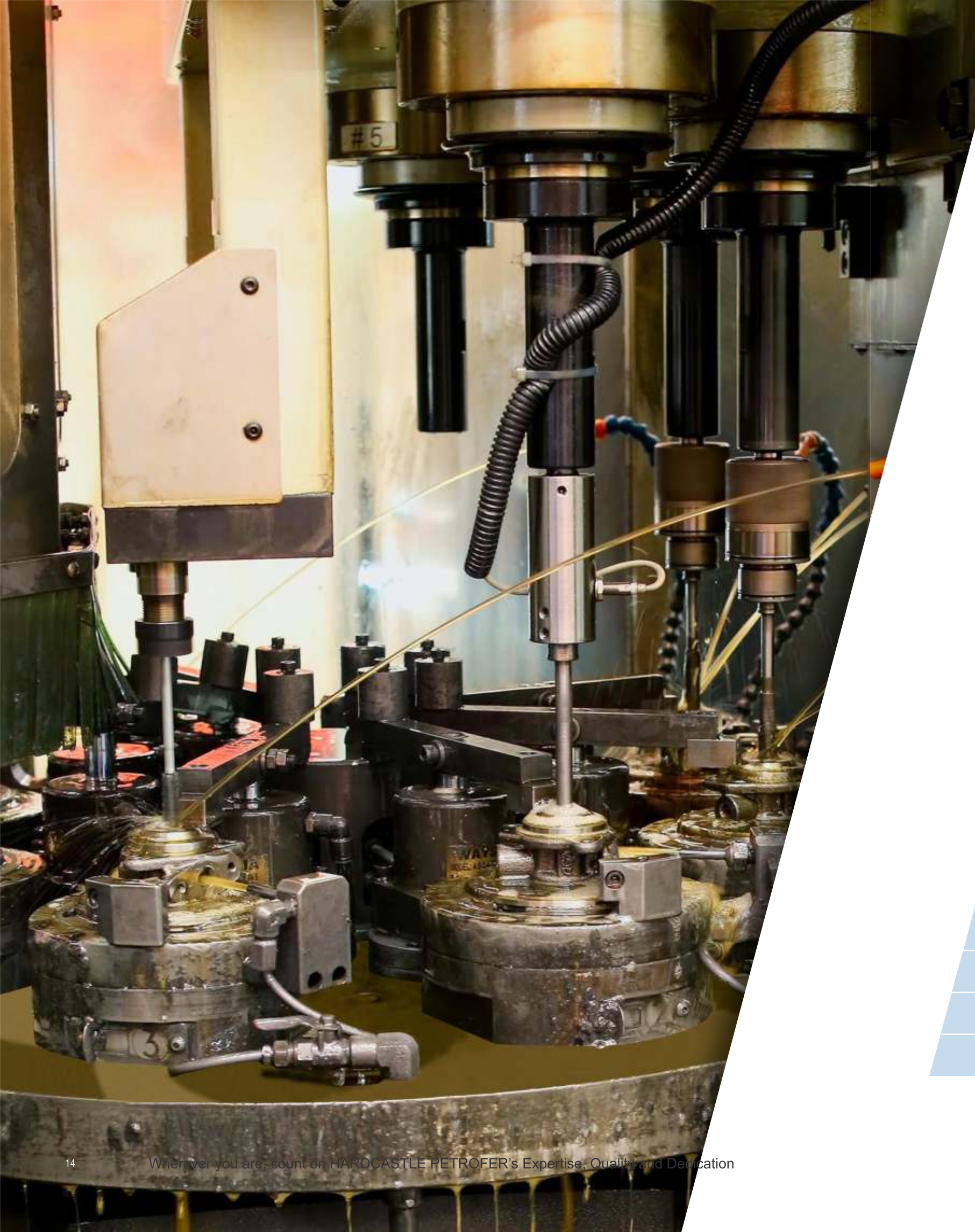
Product	Appearance	K. Viscosity (40°C, cSt)	Flash Point (°C)	Copper Corrosion
HICUT N 107	Clear fluid	11	160	4a
HICUT N-DH	Clear fluid	17	156	4a
HICUT N 107 YM (Yellow Metal)	Clear fluid	11	160	1a

### 3.3 Cutting Oils for Broaching

**Product description:**

HICUT BR Series are broaching oils are especially developed for heavy duty machining operations on all kinds of steels. Due to its low viscosity offers very good heat transfer as well as chip flow.

Product	Appearance	K. Viscosity (40°C, cSt)	Flash Point (°C)	Copper Corrosion
HICUT BR 01	Yellowish Fluid	22	170	1a
HICUT BR 02	Yellowish Fluid	29	180	1a
HICUT BR 03	Brown clear fluid	24	180	1b
HICUT BR 04	Brown clear fluid	24	190	4c
HICUT N-SBR	Brown clear fluid	25	170	4c



### 3.4 Cutting Oils for Honing

**Product description:**

**HICUT HONE** series cutting oils are recommended for honing and grinding operations for cast iron and hard steel. In case of soft steel it may be diluted with upto 30% kerosene. These products are designed to provide excellent heat removal, fast stock removal, long stone life and superior finish.

Product	Appearance	K. Viscosity (40°C, cSt)	Flash Point (°C)	Copper Corrosion
<b>HICUT HONE</b>	Light yellow	4	110	1a
<b>HICUT HONE CSF</b>	Water - White	5	120	1a
<b>SUPER FIN 150 T</b>	Yellowish	5	130	4c

### 3.5 Cutting Oils for Minimum Quantity Lubrication

**Product description:**

**HICUT M** series has specially been developed for Minimum Quantity Lubrication containing synthetic esters providing an excellent lubricity and a high amount of chlorine-free EP additives.

Suitable for use as multi-purpose metalworking fluids for various metalworking operations e.g. drilling, boring, milling, sawing on coloured metals, as well as on steel, aluminium, magnesium and titanium. It can be applied in all usual dosage systems such as airless systems, low and high pressure spray systems.

Product	Appearance	K. Viscosity (40°C, cSt)	Flash Point (°C)
<b>HICUT M 20</b>	Yellowish	8	180
<b>HICUT M 30</b>	Yellowish	14	210
<b>HICUT M 44</b>	Yellowish	20	240
<b>HICUT M 70</b>	Yellowish	32	180
<b>HICUT M 82</b>	Yellowish	35	300
<b>HICUT M 86</b>	Water -White	36.2	164
<b>HICUT M 130</b>	Yellowish	54	220





### 3.6 Cutting Oils for Hobbing

**Product description:**

**HICUT N** Series hobbing oils are designed for rigorous hobbing, shaping and shaving of gears. The products are formulated with low volatility base oils, natural fatty esters and EP-Additives.

Product	Appearance	K. Viscosity (40°C, cSt)	Flash Point (°C)	Applications	Properties
<b>HICUT N VG 32 EPS</b>	Clear Yellow Liquid	30	180	Suitable for gear hobbing, shaving and cutting	High performance chlorine containing neat cutting oil
<b>HICUT N-GG</b>	Brown oil	25	180	Suitable for boring, milling, hobbing, shaving grinding and cutting	High performance chlorine free neat cutting oil
<b>HICUT N 155</b>	Yellow Liquid	16	188	Suitable for gear hobbing, shaving and cutting	Chlorine free neat cutting oil
<b>HICUT FM</b>	Yellow Liquid	32	220	Suitable for gear cutting	Chlorine containing neat cutting oil
<b>HICUT N VG 22 M SP</b>	Yellow Liquid	22	200	Suitable for gear cutting and hobbing	Chlorine free neat cutting oil

### 3.7 Cutting Oils for Lapping

**Product description:**

**HIGRIND** series lapping oils are a blend of high quality, low viscosity oils specially recommended for grinding and polishing operations. **HIGRIND** series lapping oils are specially developed for lapping operations of hypoid gears on both Gleason-Klingelnberg and Oerlikon machines.

Product	Appearance	Colour	Specific Gravity	Properties
<b>HIGRIND LAP 1</b>	Thixotropic	Grey-green	0.925	Lapping fluid without lapping grit
<b>HIGRIND LAP 2</b>	Pasty compound Thixotropic	Grey	1.2	Mixture of lapping fluid and silicon carbide grits in the ratio of 80:20 having grit size of 280. It keeps its emulsifying properties in cold, as well as in hot water
<b>HIGRIND LAP 4</b>	Pasty compound Thixotropic	Grey	1.2	Mixture of lapping fluid and silicon carbide grits in the ratio of 60:40 having grit size of 280. It keeps its emulsifying properties in cold, as well as in hot water
<b>HIGRIND LAP 22 M</b>	Pasty compound Thixotropic	Grey	1.2	Mixture of lapping fluid and silicon carbide grits in the ratio of 80:20 having grit size of 220. It keeps its emulsifying properties in cold, as well as in hot water



### 3.8 Neat Oil for General Application

**Product description:**

MEGACUT VG series non-water miscible metal working fluids are specially developed for cold forming applications such as heading, nut forgings etc. They are also recommended for gear cutting and hobbing procedures. The products contain selected EP additives to increase the load-carrying capacity resulting in enhanced tool life.

<b>Product</b>	<b>Appearance</b>	<b>K. Viscosity (40°C, cSt)</b>	<b>Flash Point (°C)</b>
MEGACUT VG 15	Yellow Liquid	13	160
MEGACUT VG 22	Yellow Liquid	20	170
MEGACUT VG 32	Yellow Liquid	30	180
MEGACUT VG 40	Yellow to brown liquid	40	200
MEGACUT VG 46	Yellow to brown liquid	46	200
MEGACUT VG 68	Yellow to brown liquid	68	200
MEGACUT VG 15 S	Yellow liquid	13	160
MEGACUT VG 22 S	Yellow liquid	20	170
MEGACUT VG 32 S	Yellow liquid	30	180
MEGACUT VG 46 S	Yellow to brown liquid	46	200
MEGACUT VG 68 S	Yellow to brown liquid	68	200

## OUR SPECIALTIES INCLUDE



### HEAT TREATING QUENCHANTS

- HIQUENCH Series of Cold Quenching Oils
- HIQUENCH MT Series of Hot Quenching Oils
- HIQUENCH P Series of Polymer Quenchants



### INDUSTRIAL LUBRICANTS

- HILUBRIC AW, HLP, HLP-HN Series of Hydraulic Oils
- HILUBRIC WL Series of Slide Way Oils
- HILUBRIC N Series of Spindle Oils
- HILUBRIC GR Series of Gear Oils
- HILUBRIC GR SYN HC Series of Synthetic Gear Oils
- HILUBRIC TT 1 Series of Heat Transfer Oils
- HILUBRIC SYN TT Series of Synthetic Heat Transfer Fluids

### HEAT TREATING SALTS BATHS, PROTECTIVE AGENTS

- HICARB Series of Carburising Chemicals
- HISALT Series of Heat Treatment Salts



### FIRE RESISTANT HYDRAULIC FLUIDS

- HISAFE Series of HFA Type Fluids
- HISAFE Series HFB Type Fluids
- HISAFE Series HFC Type Fluids
- HISAFE Series HFDU Type Fluids
- HISAFE Series HFDR Type Fluids



### CLEANERS

- HICLEAN L Series of Liquid Cleaners



### DIECASTING & FORGING LUBRICANTS

- HILUBRIC L Series of Die Release Agents
- HILUBRIC PL Series of Plunger Lubricants
- HILUBRIC PP Series of Solid Plunger Lubricants
- HILUBRIC FW Series Water Extendable Hot Forging Lubricants
- HILUBRIC OG Series of Oil Based Hot Forging Lubricants



### METAL FORMING, DRAWING

- HIDRAW Series for Deep Drawing & Wire Drawing
- HIDRAW Series for Metal Forming

### ROLLING

- HIROLL Series of Rolling Oils, Pickling Oils
- HIRUSTAVERT Series of Rust Preventive Oils



### RUST PREVENTIVES

- HIRUSTAVERT O Series of Oil Based Rust Preventives
- HIRUSTAVERT S Series of Solvent Based Rust Preventives
- HIRUSTAVERT DW Series of De-watering Fluids
- HIRUSTAVERT WD Series of Water-Extendable Rust Preventives

## MANUFACTURING & MARKETING LOCATIONS



## INTERNATIONALLY ACCLAIMED PETROFER BRAND PRODUCTS ARE NOW AVAILABLE IN INDIA!!!

### HEAT TREATING QUENCHANTS

Accelerated high performance quenching oils ISOMAX  
Accelerated quenching oils with high evaporation stability ISORAPID;  
FASTQUENCH; SYNTERM  
Hot quenching oils MARQUENCH  
Quenching oils for vacuum furnaces VACUQUENCH  
Normal speed quenching oils ISODUR  
Tempering oils and synthetic tempering fluids ISOTEMP; SYNTERM  
Water-washable quenching oils E-OILS  
Polymer Quenchants AQUATENSID; AQUACOOL; FERQUENCH  
Quenching emulsion AQUANOL; BLACKYNOL WL  
Water additive salts for accelerated quenching AQUARAPID

### HEAT TREATING SALT BATH AGENTS

Hardening and high-speed steel bath HS; NEUTROSAL; SINOXAL  
Carburizing and nitriding salt baths CARBOGEN; CARBORAPID; CARBOMAX;  
CARBOTECT; NITROGEN  
Hot Quenching salt baths AS; GS  
Blackening and black-finishing baths SFS; BLACKENING BATH  
Special salt baths REINIGUNGSSALZ RS; HEAT TRANSFER SALTS  
Carburization protection and anti-nitriding pastes SURFATECT

### DIECASTING AND FORGING

Forging lubricants DIE FORGENT  
Diecasting release agents and piston lubricants DIE-LUBRIC; PISTON-  
LUBRICANT; PISTON-POWDER  
Special products for the diecasting industry TRANSTHERM; TEMPLUBRIC

### FIRE-RESISTANT HYDRAULIC FLUID

ULTRA-SAFE 620; ULTRA-SAFE 1120;  
HYDRO-COOL; EVOLUBRIC HE

### METAL CUTTING WATER-MISCIBLE PRODUCTS

High mineral-oil based coolants EMULCUT  
Semi-synthetic coolant ISOPAL  
Mineral-oil-free coolants ISOCOOL  
Mineral-oil-free grinding fluids ISOGRIND; ISOGRIND G  
(Glass Grinding and Polishing)

### METAL CUTTING NEAT OILS

General-purpose cutting oils, including biodegradable types ISOCUT VG;  
ISOCUT E  
High performance cutting oils ISOCUT; ISOCUT R;  
Honing and lapping oils SUPERFIN; ISOLAP  
High-performance cutting concentrates PINGINOL

### METAL FORMING, DRAWING, ROLLING

Drawing oils, pastes and emulsions DRAWLUB; ISOLUBE

### INDUSTRIAL LUBRICANTS

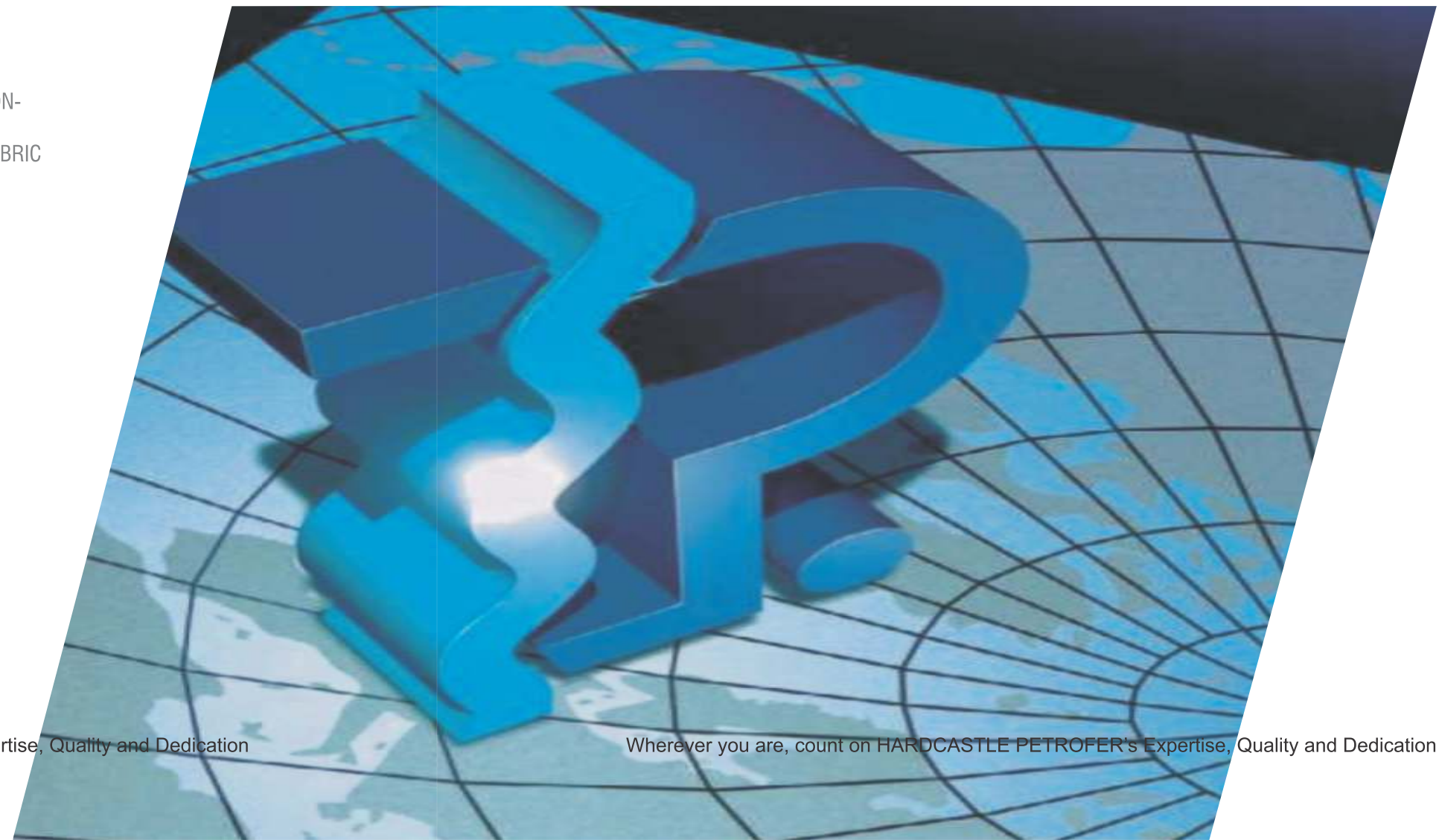
Hydraulic Oils H, HL HLP, HLP-D ISOLUBRIC VG  
Biodegradable hydraulic fluids TRIBOLUBRIC; SYNTOLUBRIC; ENVOLUBRIC  
Gear Oils GEARLUBRIC; MOLYGEAR  
Adhesion oils and slide-way lubricant WAYLUBRIC  
Spindle oils SPEEDLUBRIC  
Special grease GREASE; HAFTOL

### RUST PREVENTIVES

Corrosion protection oils ISOTECT  
Water-miscible rust preventives ISOTECT E; AQUAPLUS  
Dewatering fluids DEWATER  
Specialized products BLACKYNOL

### CLEANING AND MAINTENANCE

Industrial cleaners water-miscible FEROCLEAN S, A and N  
Industrial cleaners solvent-based FEROCLEAN L  
Maintenance of water-miscible coolants FEROSEPT; CLEANSEPT;  
CONTRAFUM; SABOCLED



# NOTES

## **HARDCASTLE PETROFER PRIVATE LIMITED**

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#### **North**

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Fax : + 91 33-2230 9782  
e-mail : subhojit.ghoshal@hawcoindia.com

#### **South**

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e-mail : bnbalsundar@hawcoindia.com

#### **West**

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e-mail : tushar.randive@hawcoindia.com

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N - Road, Bistupur  
Jamshedpur - 831 001  
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e-mail : subhojit.ghoshal@hawcoindia.com

#### **Bengaluru**

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15<sup>th</sup> 'C' Cross, Mahalakshmpura,  
HBCS, W.C. Road, Bengaluru - 560 086  
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