



# UNITED CHEMICALS

Manufacturers & Deals in: C.P.W & H.C.L Auth. Dealer of: Aditya Birla Group

☎ 27383849 | +91 9873597319 ✉ unichem\_123@yahoo.com, unichem\_123@rediffmail.com

🌐 www.unitedchemical.in 📍 Office: 98/11, Onkar Nagar (B), Tri Nagar, Delhi-110035

## DATA SHEET

## HCOFA POWDER

HCOFA Powder (Hydrogenated Castor Oil Fatty Acid) is a wax like odorless, tasteless compound.

### SPECIFICATIONS

Parameter	Values	GLC Composition	Values
Appearance	Creamish flakes or powder	Palmitic Acid	2% max
Melting Point	74-77°C	Stearic Acid + Oleic Acid	13% max
Acid Value	175 mgKOH/g min	Linoleic Acid	0.2% max
Iodine Value	5 gI <sub>2</sub> /100g max	12-Hydroxystearic Acid	84% min
Hydroxyl Value	150 mgKOH/g min	12-Ketostearic Acid	3% max
Saponification Value	175-190 mgKOH/g	Highers & Unknowns	3% max
Colour		Other Properties	
Molten	6 G max	Specific Gravity @25°C	1.021
Molten	2.5 ASTM max	Melt Viscosity @90°C	25 centipoise
Molten	12Y, 2R max (Lovibond, 1"cell)	Penetration Hardness (100g/25°C/5 sec 0.1mm)	8
Particle Size	99% passing through 16mesh (1000microns)	Soluble	Soluble in Ethanol

We can meet Buyer Specifications on request

### APPLICATIONS

#### LUBRICATION

HCOFA can be used where HCO is used with better results. It can be used in glycerine free multipurpose lithium, barium & calcium premium greases e.g. plug valve greases, aircraft & motor car engines etc., providing excellent resistance to water, oils, solvents, crude petroleum etc., wide temperature range stability, high drop point.

#### COSMETICS

HCOFA may be used for gelling liquid petroleum to produce brillianthness, or it may be incorporated into cold creams & vanishing creams to give a jelly-like feeling & a facility for easy liquefying on the skin.

#### PAINTS

HCOFA is reacted with acrylic esters to produce hard, durable thermosetting polymers used in the high quality automotive, industrial appliance and metal decorative finishes.

#### RUBBERS & PVC

HCOFA functions as an activator and lubricant for natural/ synthetic rubbers & PVC.

**OTHERS** HCOFA is also useful in Polishes, Inks & Hot Melt Adhesives and as a saturated hydroxylated substitute for stearic acid.

### PACKING

25 kg paper/PE/PP/50 kg jute bag, PE/HDPE/ PP 400 kg -1000 kg FIBC.

Ref. No. UC/2019-10-16

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## DATA SHEET

## JAGROWAX--140

JAGROWAX--140 is a synthetic high melting wax. It is non--corrosive and safe to handle. It possesses various desirable properties making it very useful in number of industries.

### SPECIFICATIONS

Parameter	Values	GLC Composition	Values
Appearance	Cream colored flakes or powder	Specific Gravity @ 25oC	0.99
Melting Point	138 – 145oC	Melt Viscosity @ 175oC	8 centipoise
Iodine Value	4.0 (max) by Wijs method	Penetration Hardness (100g/25°C/5sec/0.1mm)	1
Acid Value	5 mg KOH / gm (max)		

### SOLUBILITY & COMPATIBILITY

AGROWAX--140 is slightly soluble in most non-polar and aromatic solvents at elevated temperatures. It is moderately soluble in polar solvents at elevated temperatures, but it is almost insoluble in most of the solvents in cold conditions. It is insoluble in water or steam and shows good resistance. Concentrated solution of JAGROWAX--140 at elevated temperature gels on cooling. It is compatible with most other waxes and plasticizers, viz. Hydrogenated Castor Oil, Carnauba wax, Paraffin wax, Candelilla wax, Rosin, Tricresyl Phosphate, DOP etc. .It is compatible with polymeric materials like Polystyrene, Polyethylene, PVC, Polypropylene, Polyvinyl acetate, Cellulose acetate, Nylon, ABS etc.

### CHARACTERISTICS

JAGROWAX--140 has excellent resistance to water, salt sprays, mild acids and alkalis. It functions as a lubricant, plasticizer, antistat and pigment dispersant in Resins and Plastics. It also acts as a hardener and moisture proofer in paints, lacquers, bitumens and asphalts. In number of formulations, it also acts as a slip and antiblocking agent. It has got temperature stability up to 240 deg. C. Repeated heating in air or maintaining at high temperature for a long time will cause off coloring.

### APPLICATIONS

RESINS AND PLASTICS Incorporation of about 0.25% to 1% of JAGROWAX--140 provides internal lubrication to plastics and therefore acts as an excellent aid in plastic processing. It can be added before plastic processing i.e. extruding, molding or casting. Moreover its high temperature stability and effect on surface characteristics allows it to be effective mould release agent, too. It imparts antistatic properties to plastic articles. Moulded articles of resins or plastics incorporating JAGROWAX--140 ensure better surface finish and clean mould release. It also functions as a dispersant allowing faster blending and uniformity in color. It can be incorporated in base resin or plastic by mixing and milling it with the vehicle or plasticizer or by dispersing it in a solution.



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## DATA SHEET

## JAGROWAX-140

### FOUNDRY RESINS

About 0.5% to 2% addition of JAGROWAX--140 to an uncured resin, prior to mixing with sand, acts as an excellent lubricant to give easy mould release, increases the strength of moulds, imparts moisture resistance property to core resulting in improved dimensional accuracy and better surface finish to the castings.

### PRINTING INKS

About 0.5% to 2.5% inclusion of JAGROWAX--140 improves the function of ink by reducing its spread on paper without having its viscosity reduced. It also acts as dyestuff solubilizer giving more intense color or reduction in quantity of dyestuff to be used. It also imparts sharp boundaries of printing and adds to scratch resistance of the ink. Part of ink solvent can be used for dissolving it and warm paste can then be thoroughly mixed to obtain homogeneous smooth dispersion.

### WIRE DRAWING

JAGROWAX--140 is an excellent lubricant for drawing of stainless steel, alloy steel, low carbon steel, tinned and galvanized wires. It can also be used as effectively for pipe drawing or section drawing. For most effective results it is to be premixed homogeneously with other wire drawing lubricants.

### TEXTILE AUXILIARIES

Suitable proportion of JAGROWAX--140 blended evenly in textile coating/ processing chemicals imparts desirable properties. Its surface modifying property eases textile processing and handling and leaves it waterproof.

### RUBBER

0.5% to 2% of JAGROWAX--140 in rubbers such as ABS, Hycar, Butyl, Neoprene, GRS, etc. acts as efficient lubricant, process aid, detackifier, mould release and antiblock agent.

### CARDBOARDS AND WAX PAPERS

Surface coatings incorporating JAGROWAX--140 protect the paper and impart moisture-proofness. Its high temperature stability and inertness to most chemicals make it very useful for this application. It also acts as slip and antiblock agent for wax--coated paper.

### BITUMENS AND ASPHALTS

Incorporation of JAGROWAX--140 improves spreadability and surface adhesion of the asphalt. It also raises its softening point making it more durable.

### WAXES

JAGROWAX--140 is compatible with most other waxes and may be blended with them for raising the melting point of the mix, improving chemical properties of the mix or diminishing surface tack. The proportion to be added can be determined by properties desired and intended end-use.

### CRUDE OIL ADDITIVE

JAGROWAX--140 can be incorporated in crude oil additives as a viscosity regulator. It helps in smoother flow of crude through pipelines reducing requirement of pumping energy.

### PACKING

JAGROWAX--140 is supplied in 25 kg paper/jute bag or 50 kg jute bag or 25 kg PE / HDPE / PP bags or 400 kg --1000 kg FIBC.

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## JAGROWAX--85

JAGROWAX--85 is a wax--like compound. It is a medium hard product that is practically odorless and tasteless. It is supplied in the form of flakes. The colour of JAGROWAX--85 is cream to white. When melted it is clear, transparent to straw coloured.

### SPECIFICATIONS

Appearance	White to Creamish flakes
Melting Point	85 - 90 °C
Penetration Hardness (100g/25°C/5sec)(0.1mm)	2
Melt Viscosity at 95°C	24 centiPoise
Compatibility	Compatible with beeswax, shellac wax, carnauba, candelilla, sugarcane. Moderately with crystalline & microcrystalline paraffins & with ceresin. Compatible with natural & synthetic rubbers like ABS, Hypalon, polybutadiene, polyisobutylene, polysulfide, silicon rubbers, etc.
Miscibility	Miscible with rosin, chlorinated aromatics, shellac, ethyl cellulose, CAB, polybutyl & polyisobutyl methacrylates, polyethylene and polyamides. It is moderately miscible with EVA copolymers, rosin esters, ester gums, cumarone--indene resins and alkyds
Heat--Resistance	Jagrowax--85 has excellent stability at temperatures upto 150oC for period upto 24hours. For period more than 24hrs or at temperatures greater than 150oC, the deterioration is accelerated. This high temperature stability in conjunction with a sharp melting point makes Jagrowax-85 of value for hot-melt applications.

### APPLICATIONS

Pharmaceuticals  
Cosmetics e.g. lipsticks, deo sticks, antiperspirant sticks.  
Lubrication  
Inks, adhesives & coatings  
Plastics  
Candles  
Soaps  
Wax polishes  
Tabletting  
Pencils and crayons  
Investment casting

### PACKING

JAGROWAX-85 is supplied in 25 kg bag

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PERFORMANCE OF Jagrowax-85 IN HIGHLY FILLED THIOTIN STABILIZED		
PVC PIPE FORMULATION		
	COMMERCIAL	JAGROWAX-85 MODIFIED
FORMULATION	TIN SYSTEM	TIN SYSTEM
PVC (I.V.=0.92)		
PVC (I.V.=0.92)	100	100
BUTYL THIOTIN	0.75	0.75
CALCIUM CARBONATE-UNCOATED	25	25
TITANIUM DIOXIDE	1	1
CALCIUM STEARATE	1	-
165 PARAFFIN WAX	1	-
Jagrowax-85	-	1.5
PARTIALLY OXIDIZED PE	-	1
PHYSICAL PROPERTIES		
TENSILE IMPACT -		
STRENGTH, FT.LB/SQ.IN	190	210
DUCTILITY ELONGATION,MSECS	1.6	1.8
GARDENER IMPACT STRENGTH, (50 MIL SHEET)IN.LB	65	75
HEAT DISTORTION		
TEMPERATURE (264 PSI),C	71	77
CONCLUSIONS:		
Jagrowax-85 IMPROVES:		
HEAT DISTORTION TEMPERATURE		
IMPACT STRENGTH		



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## FORMULATIONS FOR USE OF Jagrowax-85 IN PIPES & PROFILES(BRABENDER DATA)

FORMULATION	PIPE & PROFILE COMPOUNDS		SIDING COMPOUNDS		
	COMMERCIAL BASED		JAGROWAX-85 BASED		
	SINGLE SCREW	MULTI-SCREW	OR MULTI-SCREW	COMMERCIAL BASED SIDING	JAGROWAX-85 BASED SYSTEM
PVC(I.V.=0.92)	100.00	100.00	100.00	100.00	100.00
TIN STABILIZER	0.50	0.50	0.50	1.50	1.50
CALCIUM CARBONATE	2.50	2.50	2.50	-	-
TITANIUM DIOXIDE	1.00	1.00	1.00	12.00	12.00
IMPACT MODIFIER	-	-	-	5.00	5.00
ACRYLIC PROCESS AID	1.00	-	-	2.00	-
165 PARAFFIN WAX	0.70	1.00	-	0.70	-
CALCIUM STEARATE	0.70	0.70	-	0.70	-
PARTIALLY OXIDIZED PE	0.15	0.15	0.35	0.15	0.35
Jagrowax-85	-	-	0.50	-	1.25
PROCESSING CHARACTERISTICS					
FUSION TIME,MINS	3.40	5.70	3.20	2.50	2.00
TORQUE AT FUSION,M-GMS	2500.00	2150.00	2125.00	2750.00	2550.00
TORQUE AT EQUIL.,M-GM	1550.00	1600.00	1450.00	1600.00	1400.00
HEAT STABILITY,MINS	5.10	5.80	6.80	8.50	9.00
PHYSICAL PROPERTIES					
TENSILE STRENGTH,PSI		7500.00	8000.00	7400.00	7800.00
ULTIMATE ELONGATION,%		20.00	30.00	35.00	40.00
GARDENER IMPACT					
- STRENGTH.IN.LB/MIL		1.90	2.20	2.20	2.80
TENSILE IMPACT					
-STRENGTH, FT.LB/SQ.IN		209.00	240.00	205.00	255.00

### CONCLUSIONS FROM ABOVE FOR JAGROWAX-85 BASED LUBRICANT SYSTEMS:

- JAGROWAX-85 IMPROVES PHYSICAL PROPERTIES
- JAGROWAX-85 IMPROVES FUSION
- JAGROWAX-85 REDUCES FUSION TIME
- JAGROWAX-85 DECREASES POWER CONSUMPTION
- JAGROWAX-85 REDUCES INVENTORY OF LUBRICANTS
- JAGROWAX-85 PROVIDES EXTENDED HEAT STABILITY



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## JAGROWAX - 130

Jagrowax-130 is a bis-amide wax based on the reaction of fatty acid with Ethylene diamine.

### SPECIFICATIONS

Appearance	Creamish Waxy Solid Flakes or Powder (Coarse or micronized - 99% finer than 100 microns)
Acid Value	10 max
Amine Value	10 max
Melting Point	120 - 140 °C

### APPLICATIONS

Jagrowax-130 can be used in offset, flexographic and gravure inks based on polyamide resins. It helps to improve the adhesion of the ink on plastic substrates and improves the slip property of the ink. It also improves the compatibility of paraffin wax with polyamide resin.

Jagrowax-130 also gives good lubricity and rust-preventing property in lubrication formulations e.g. wire-drawing lubes, metal-processing lubes, etc.

Jagrowax-130 is hydrophobic and it can be used to improve the water-repellency or waterresistance e.g. lubes, cements, paints, inks, etc.

Jagrowax-130 can substitute for Ethylene bis-stearamide (EBS) in applications e.g. processing lubricant for plastics like ABS, PP, PE.

### PACKING

25 kg bags for flakes and coarse powder. 20kg bags for micronized powder.