

Metallurgical Processing Compounds

Manufacturing unit of

Water based Anti Carburizing / Anti Nitriding / Anti Decarburizing Paste

The product is developed by the team of Technicians having more than 30 years of experience in the field of Metallurgy and Heat-Treatment in Automotive, Heavy and Light Engineering Industries.

1. This compound is developed for **Selective Case Hardening** process in Low Carbon Alloys steel specifically being used in **Transmission Gears, Crown Wheels & Pinions, Hyd Bushes & Spools, Shafts and other similar components** where selective locations (like Threaded portion, fine suppline blind hole location and some of the area where machining is required after Carburizing operation).
 - This compound can apply in all Heat-Treatment processing Furnaces like Muffle Hardening (Anti decarburizing), Gas Carburizing, and Fluidized Bed Furnace etc except **Salt Bath** Carburizing and Hardening furnace.
 - This can be applicable Case Carburizing Depth up to 2.40 mm.
 - This compound can easily remove by **Sand blasting cleaning method only** after Case Carburizing Hardening operation..
2. It is very easy to apply on selective area simply by Dipping / by Brushing but prior to paste the part should **properly clean and there should not any oil / dust contents** and the same should be washed either with CTC or the oil contents should burned by heating upto 400 Degree centigrade.
 - Ensure for the thickness of the layer on the **surface** should be properly covered by the compound, pasted on the job. Prior to load in to the Furnace the parts should be properly dry at 300–350 Degree centigrade.
3. Selective Case Hardening is one of the very useful processes in heat-treatment Industries to get the quality (as designed by the Metallurgical parameters); it reduces **process time** and increase the **productivity**. Earlier different processes like **Copper Plating** or **Keeping extra material** on the same location & then the same has to be remove by turning after carburizing & annealing operation.
 - **Metallurgical Processing Compound (Paste)** has eliminated all above methods and tried to save the Quality and processing cost of the part.

Non Warranty:

Detail of the information given in the literature is reliable but condition and method of use may affect the results it is essential to conduct the trial on any rejected sample.



This compound is also apply at the **GRROVE / UNDERCUT** of Parts especially CAP of Ball Joint or any such similar Parts during **Carburizing Hardening Tempering** Process as the wall thickness of the particular portion is very low and it is possible to get

Crack or Broken parts, as the maximum area get CARBURIZE and HT (as this location become GLASS ZONE) due to Carbon Potential at the zone become about 1.00%.



Pasted on Threading

Figure Showing Sample Pasted with Anti-Carburizing Compound

Gas Carburizing Process is a surface chemistry process, which improves the case depth hardness of a component by diffusing carbon into the surface layer to improve wear and fatigue resistance. The work pieces are pre-heated and then held for a period of time at an elevated temperature in the austenitic region of the specific alloy, typically between 820 and 940°C. During the thermal cycle the components are subject to an enriched carbon atmosphere such that nascent species of carbon can diffuse into the surface layers of the component.

The rate of diffusion is dependent on the alloy and carbon potential of the atmosphere. Care must be taken to ensure that only sufficient carbon is available in the atmosphere at any one time to satisfy the take up rate of the alloy to accept the carbon atoms. In practice, this is defined in a carbon potential set point profile which runs concurrently with the temperature cycle. The set point may give a boost phase where the carbon potential would be typically set above 1.0% carbon but, as the cycle progresses and the effective case depth increases, the carbon set point will be reduced to complete the diffusion stage. Depending on the final requirement for effective case depth, the whole cycle may take many hours.

Once the heating and carbon diffusion part of the process are complete it is necessary to rapidly quench the components to a defined alloy recipe. The recipe will specify the quench method, the quenchant temperature and time.

Hydraulic Power Lift (FARMTRAC)

Like Plunger, Spools, Bushings or many other parts of Hydraulic Power Lift Assembly being used Low Carbon / Alloys Steel Grade of material, the same compound is being used to avoid Carbon Penetration at Threading in Plunger, or any selective location of the parts.

Anti De-Carburizing compound is being applied in Springs in the Hyd Power Lifts to avoid to surface Oxidation during Hardening and Tempering. The Raw material grade Spring Steel, En-31, 50CrV4, and many similar R/M using the same Paste.



Plunger Hyd Power Lift FARMTRAC



Main Spring of the Hyd Power Lift FARMTRAC

Cutting Tools, Dies, Cutting Blades Steel / Pipe Mill's Roles and all kinds of Springs

Specified Grades of Raw Materials for above tools and Dies are normally being made by High Carbon / Alloys Steels this material has the tendency to get **DE-CARBURIZE** very fast during Hardening Tempering.

This Paste / Compound is being pasted (very thin layer) also used to stop to Surface Decarburization to avoid De-Carburization.



***For further detail PI feels free to contact us at:
Supply of Material / Correspondence Address:***

Shri Girish Chandra Pandey,
II R/M 105 B, GDA MIG Flats,
Opp. Ram-Manohar Lohia Park,
Sector 2, Rajendra Nagar, Sahibabad,
Distt: Ghaziabad, Pin Code- 201005,
Uttar Pradesh, India
E-mail: met.processingcomp99@gmail.com
Tel; (+91) 9410765399, 8588089733

To,	Date:
Kind Attend;-	

SERIAL NUMBER	PRODUCT	RATES
1.	Anti-Carburizing Paste/Stop-up Paste (Water Based)	Rs 850/- Per Kg
2.	Packing Box Per Piece	6 Kg
3.	Packing Charges	5%
4.	C.S.T	13.5%

List of the Customers using Water based Anti Carburizing Paste

SI No.	Name of the Company	Manufacturing	Location
01	M/S Usha Fab Cast	Hyd Power Lift & Pumps	Faridabad
02	M/S Shiva Hardwell Industries	Heat-Treatment Job worker	Faridabad
03	M/S Universal Engineers	Heat-Treatment Job worker	Ghaziabad
04	M/S Nirupam Engineers	Heat-Treatment Job worker	Ghaziabad
05	M/S Accufab Engg Pvt Ltd	Heat-Treatment Job worker	Faridabad
06	M/S Graziano Transmissioni	Transmission Gears	Greater Noida
07	M/S Mita India Private Limited	Hyd Power Lift & Pumps	Ghaziabad
08	M/S Unispare Private Limited	Exporter of Auto Parts	Noida U.P
09	M/S Master Tools and Gauges	Tooling's and Auto Parts	Faridabad
10	M/S Kochar Agro	Parts for Maruti & N H Tractor	Faridabad
11	M/S D.B Engg (Anti Decarb)	Dies & Shearing Blades	Noida U.P
12	M/S Orval Transmission P Ltd	Steering Assly	Gurgaon
13	M/S Punjab Bevel Gears	Auto Parts	Sahibabad
14	M/S Rajshree Enterprises	Auto Parts	Faridabad
15	M/S Ingersoll Rand Wadco	Machine tools	Sahibabad
16	M/S Kafila Forge Limited	Auto Parts, Crown, UJ Cross	Sonepat
17	M/S Bharat Gears Limited	Gear Parts for OEM'S	Faridabad
19	M/S Techno Thermal Treater	Heat-Treatment Job worker	Bhiwari Raj
20	M/S Amtek Auto Comp Ltd	Connecting Rods	Sohna Gurgaon
23	M/S Unipart India Pvt Ltd	Exporter of Auto Parts	Visakhapatnam
24	M/S Gripwell Fasteners Ltd	Exporter of Auto Parts	Noida UP
25	M/S Swan Auto Component	Auto Parts	Ludhiana
26	M/S Omsons Heat-Treatment	Heat-Treatment Centre	Delhi, Bhiwari
27	M/S Jain Industrial Product	Auto Parts	Rohtak Hry
28	M/S Involute Power Corporation	Auto Parts & Tools	Faridabad
29	M/S New Allenbery Works	Gears for Tata Motors Ltd	Pant Nagar
30	M/S Varroc India Ltd	Gears for Tata Motors Ltd	Pant Nagar

31	M/S Amtek Auto Limited	Connecting Rods	Gurgaon
32	M/S Techno Thermal Treater	Heat-Treatment Source	Bhiwari
33	M/S A.K. Automat	Auto Parts	Rohtak
34	M/S Emson Tools Limited	Railway Parts as Hangers	Ludhiana
35	M/S Chopra Gears	Gears Parts	Delhi, Bhiwari
36	P.P Rolling Mill Faridabad	Rolls for Rolling Mill	Faridabad
37	M/S Preet Machine Ltd	Rolls for Rolling Mill	Tronica City Gzb
38	M/S Unipart's India Ltd Noida	Export Auto Parts	Sec-81 Noida
39	M/S LML Scooter Limited	Scooter Manufacturer	Kanpur
40	M/S Amtek Auto Comp Ltd	Connecting Rods	Rohtak Hry

Sample Approved with the Red marked Parties

Terms and Conditions:

- ❖ Material will be delivered directly from our works after getting Purchase Order and Payment.

Please feel free to revert for any further enquiry related to Anti Carburizing Paste or any Heat-Treatment of Steel.

Thanking you with best regard :-

Girish Pandey

SPECTROMETER TEST REPORT

Issued To: ARIIG INDIA LTD G.T. ROAD, NOHAN NAGAR GHAZIABAD-201007 (U.P.) INDIA	Report No: 06/08/2718/7366	Date: 08/06/2001
Kind Attn: 91-732616/733879: FAX: 91-11-91-734309 MR GIRISH PANDEY (DEPU. NGR)	Sample Description: CUT PIECE OF BUSH (CARBURIZED ZONE)	DOR: 08/06/2001
	Your Ref. No.: 72	<i>SAE-8LY0</i>

17:03:58, Jun 08 01, STEEL*98*, B5 ID-7366, Average 1

Element	C	Si	Mn	S	P	Ni	Cr	Mo	Al	Cu	Ti	Nb
Fe	96.55	.895	.274	.854	.025	.530	.567	.232	.034	.000	.002	.006
Co	.000	.0000	.001	.001	.007							

Surfact analysis
Shk.

DIRECT SPECTRO PRINTOUT

REMARKS Sample Conforms tow.r. to above analysis
does not Conform



[Signature]
Authorised Signatory

Note: RB F- (APPROVED BY VARIOUS GOVT. & OTHER INSPECTION AGENCIES)

- Total liability of our laboratory is limited to the invoiced amount. No liability will be accepted after the sample is taken back.
- The result listed refer only to the tested samples and applicable Parameters. Endorsement of product is neither inferred nor implied.
- Sample not drawn by us. Analysis conducted on "As received basis", unless specified otherwise.
- Sample will be destroyed after 15 days unless instructed otherwise.
- Any complaints about this report should be communicated in writing within 7 days of issue of this report.
- This report is not to be reproduced wholly or in parts and cannot be used as an evidence in a court of Law and shall not be used in advertising media without our permission in writing.

SPECTROMETER TEST REPORT

Issued To: HARTIG INDIA LTD G.T. ROAD, MOHAN NAGAR GHAZIABAD-201007 (U.P) INDIA	Report No: 08/08/2718/7365	Date: 08/06/2001
Kind Attn: 91-732616/733879; FAX: 91-11-91-734309 MR GIRISH PANDEY (DEPU. MGR)	Sample Description: CUT PIECE OF BUSH (ANTI CARB ZONE)	DOR: 08/06/2001
	Your Ref. No.: 72	SAL-8630

06:32, Jun 08 01, STEEL*98*, BS ID-7365, Average 1

Fe.	C	Si	Mn.	S	P	Ni.	Cr	Mo.	Al	Cu	Ti	Nb
77.35	.269	.296	.777	.042	.0148	.437	.515	.224	.032	.030	.002	.001
Co	B	Pb	V	Zr								
.000	.0000	.001	.001	.006								

Surface Analysis

DIRECT SPECTRO PRINTOUT

REMARKS Sample Conforms to w.r. to above analysis
does not Conform



Authorised Signatory

- RB F (APPROVED BY VARIOUS GOVT. & OTHER INSPECTION AGENCIES)
- Note:
- Total liability of our laboratory is limited to the invoiced amount. No liability will be accepted after the sample is taken back.
 - The result listed refer only to the tested samples and applicable Parameters. Endorsement of product is neither intended nor implied.
 - Sample not drawn by us. Analysis conducted on "As received basis", unless specified otherwise.
 - Sample will be destroyed after 15 days unless instructed otherwise.
 - Any complaints about this report should be communicated in writing within 7 days of issue of this report.
 - This report is not to be reproduced wholly or in parts and cannot be used as an evidence in a court of Law and shall not be used in advertising media without our permission in writing.

SPECTROMETER TEST REPORT

Test Certificate S- No. 005513	
Issued To : HARIG INDIA LTD G.T. ROAD, MOHAN NAGAR GHAZIABAD-201007 (U.P) INDIA 91-732616/733879: FAX: 91-11-91-734309 Kind Attn.: MR GIRISH PANDEY (DEPU. MGR)	Report No. : 01/25/12625/33940 Date : 04/02/2002 DOR : 25/01/2002 Sample Description : BUSH L CUT PIECE CHECKED AT ANTI CARB PASTED ZONE Your Ref. No. : 96

38:33, Feb 04 02, STEEL*98*, 81 ID-33940, Average 1 2

Fe.	C	Si	Mn.	S	P	Ni.	Cr	Mo.	Al	Cu	Ti	Nb
97.58	.192	.228	.760	.011	.0147	.444	.471	.203	.013	.069	.002	.005
Co	B	Pb	V	Zr								
.001	.0000	.001	.001	.005								

DIRECT SPECTRO PRINTOUT

REMARKS Sample Conforms tow.r. to above analysis
does not Conform



NABL ACCREDITED LAB
RB F-

Protocol : ASTM E - 1507 / 1621

Authorised Signatory
DIRECTOR
SPECTRO ANALYTICAL LABS (P) LTD.

(APPROVED BY VARIOUS GOVT. & OTHER INSPECTION AGENCIES)

Note :

- Total liability of our laboratory is limited to the invoiced amount. No liability will be accepted after the sample is taken back.
- The result listed refer only to the tested samples and applicable Parameters. Endorsement of product is neither inferred nor implied.
- The sample description is not verified in all cases and is given as described by customers. Sample not drawn by us and Analysis conducted on 'As received basis', unless specified otherwise.
- Sample will be destroyed after 15 days unless instructed otherwise.
- Any complaints about this report should be communicated in writing within 7 days of issue of this report.
- This report is not to be reproduced wholly or in parts and cannot be used as an evidence in a court of Law and shall not be used in advertising media without our permission in writing.

PAGER NOS FOR SAMPLE COLLECTION - 9632171-242(NOIDA), 243(FBD.), 244(South Cent. Delhi)
9632-162-316(Gurgaon)

DP-1



Metallurgical Processing Compounds

Manufacturer of Water Based Anti carbunzing / Carbonitriding
Anti Decarburizing Paste & Anti corrosion compounds

Address : Heera Nagar, Ist Pulia, Khariya Factory Chowk
Chhoti Mukhani Haldwani, Nainital (Uttarakhand)

Phone : +91-9410765399, +91-8958223597

cerlikon
graziano

To

M/S CHEMTREAT ENTERPRISE

Dear Sir,

The Paste grade 415 is absolute ok. Hardness is observed 32~36 HRC.
Now we decided that to use this paste as a regular basic.

With Regards
Biswanath
(HT LAB)

A handwritten signature in blue ink, appearing to read 'Biswanath', with a long horizontal flourish extending to the right.



HIGHTEMP FURNACES LIMITED

Village Bhondsi
Gurgaon-Sohna Road,
Opp. Gitanand Ashram,
Gurgaon - 120 102
Ph.: 95-0124-2265269
Ph.: 95-0124-2265217
Fax: 95-0124-2265216
E-mail-hightemp@ndf.vsnl.net.in

Water based anticarb paste
Supplier name :-CHEMTREAT ENT
Paste code:-414/415

Date:04.02.12

	SPLINE- HARDNESS			TRIPOD GI-3-15			SPLINE HARDNESS	
	0.1			12F2.02.05.4479			-0.4	
TOP	0.1	352	340	345	0.4	340	335	333
MIDDLE	0.1	340	345	337	0.4	354	351	359
BOTTOM	0.1	365	503	493	0.4	375	432	405


Remarks:-Result found satisfactory as per requierment.

Approved By :Shailender Singh, QA



HEAT TREATMENT FURNACES AND ALLIED HEATING EQUIPMENT JOINT VENTURE WITH DOWA MINING CO. LTD. JAPAN (THT DIVN)

Regd. Office : 27-29, Supariwala Building, 1st Floor, E.M. Merchant Road, Khadak Mumbai - 400 009
Head Office : 1-C, 2nd Phase, Peenya Industrial Area, Bangalore - 560 058, Phone : 28394076, 28395917
Telex : 0845 Heat in Fax : Fax : 91-080-28392661, 28397798, E-mail : hightemp@vsnl.com

 Varroc Engineering Pvt. Ltd. PANT NAGAR PLANT		METALLURGICAL INSPECTION REPORT	
Charge No./Dt.	HT/82F1/870	Furnance/Process	SO2F1/CHT
Date	10-9-08	Material	82Cr-45Mn
Part Name/Number	Quantity	Part Name / Number	Quantity
1st DRIVEN (TREAT FOR ANTICARB PASTE)	02		
Parameters	Specifications	Traverse	<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">AREA WITH HV1 Readings WITH ANTICARB</div> <div style="text-align: center;">AREA WITH HV1 Readings WITH ANTICARB</div> </div>
Hardness Traverse at HV1		0.1 mm	757 439
		0.2 mm	713 401
		0.3 mm	648 398
		0.4 mm	591 398
		0.5 mm	551 -
		0.6 mm	490 -
		0.7 mm	-
		0.8 mm	
		0.9 mm	
		1.0 mm	
		1.1 mm	
Surface Hardness	58 - 64 HRC		59HRC 39HRC
Core Hardness	26 - 43 HRC		38HRC 37HRC
Case depth	0.5 - 0.8 mm at 550 HV1		0.50 NIL
Microsturcture	Case - Fine Tempered Martensite		
	Core - Low Carbon Martensite		
Remarks: WE HAVE TAKEN THE TRIAL OF ANTICARB CARB PASTE FROM CHEM TREATMENT PLANT APPLIED ON SURFACE OF 1st DRIVEN IN SO2F1. METALLURGICAL RESULTS ARE FOUND SATISFACTORY & FULL EFFECTIVE OF ANTICARB PASTE.			
Checked by			Approved by



HARIG INDIA LIMITED
MOHAN NAGAR G.T. ROAD, GHAZIABAD.

Metallurgical Test Report

No 001311

QUALITY CONTROL
METALLURGICAL LABORATORY

HIL-QAD-01B

SAMPLE ANALYSIS REPORT Date: 22/09/2008

Material Specification: <u>Anti Carb. Steel</u> <u>EN 8020</u>	Supplier's Name: <u>M/S. Ghanshyam Treatment Engrs.</u>	Qty. Checked: <u>01 No. 100 mm dia x 100 mm</u> <u>in 2 samples (2 nos)</u>
Part No:	Part Name:	M.R.R. No:
Material Condition: <u>Annealed, Iso-thermal Annealed, Normalised, Hardened Tempered, Case Hardened Tempered.</u>		Batch No:

TEST				RESULTS										
% OF	Specified	Actual in Sample			Type of Tests	Specified	Actual in Sample					STRUCTURAL		
		1	2	3			1	2	3	4	5	MACRO OBSERVATION	Others	
C	0.17-0.23	0.195	0.20		Tensile Strength kgf/MM ²									Satisfactory
Mn					% Elongation									
Ni					Yield Strength									
Cr					Surface Hardness	55-60 Rc	60	55						At Hank Annealed
Mo					Core Hardness	36-42 Rc	37	40	38					At Hardened Area
Si					Case Depth, (Total)	90								
S					Effective case depth	NIL								* Tempered Martensite
P														(No Carbonizing at the Hardened Area)

Remarks :	* No Carbon observed at Hardened zone by spax test	Accepted <input checked="" type="checkbox"/>	Rejected <input type="checkbox"/>	Approved by <u>[Signature]</u> on dt. <u>23/9/2008</u>
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Manager Engr