LOCAL COMPANY WITH GLOBAL NETWORK.

With our distribution network over the world, **TWC** aims to provide innovative solutions to all your speciality rubber chemical needs.





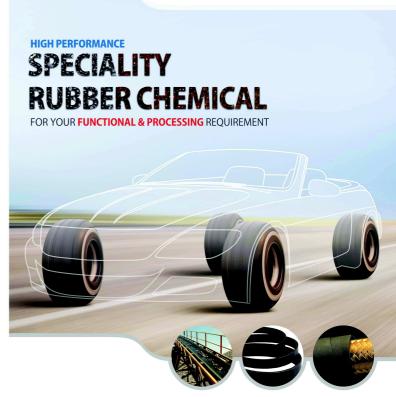
It is not the **strongest** or the **most intelligent** who will survive, but those who can best manage **change**.

Your long-term strategic partner



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INTRODUCTION

TWC GROUP, a chemical major headquartered in Kolkata, India provides solutions in areas of Rubber Processing, Rubber to Reinforcement bonding, Rubber functionalization and Ozone Resistance.

A technology leader in speciality chemicals in the Indian sub-continent, our products are used in companies across the globe. In over 35 countries around the world, companies make use of our business–to-business solutions for eco-friendly and cost $\frac{1}{2}$ efficient operation.

Our Current Plethora of offering is

- Dry Bonding System Adhesion Promoter
- Resorcinol Dispersions
- Resorcinol Resins
- Resorcinol Dipping Resins
- HMT Dispersions
- HMMM Resin & Dispersions
- Super Tackifier Resin Rubber Additives
- Tackifier Resin Ozone Resistance Waxes
- Homogenising Agents
- Reinforcing Phenolic Resins • Cut & Chipping Resistance Resin
- Activators, Zinc-based
- Dispersants for Silica, Zinc-based
- Dispersants for Silica, non Zinc-based

CERTIFICATIONS

We at TWC constantly work towards delivering performance with perfection and we are proud that our efforts are recognized:

- Accredited with ISO 9001:2015 & ISO 14001:2015 certifications
- REACH compliant products
- · Compliant with Country Inventory List of various countries



OPERATIONAL FACILITIES

TWC GROUP manages 4 state-of-the-art manufacturing facilities, namely

- Techno Waxchem Pvt Ltd, Unit 1 & Unit 2 in Kolkata, East of India
- Rajsha Chemicals Pvt Ltd, Unit 1 & Unit 2 in Vadodara, West of India Managing 32,000 TPA of production capacity.













DRY BONDING SYSTEM - ADHESION PROMOTER

| RESORCINOL | DISPERSIONS |
|------------|-------------|

| | Appearance | Composition | Specific Gravity @ 25°C | Active Content (%) | Ash Content (%) | Moisture Content (%) | | Packaging | Recommended Dosage (phr) | |
|----------------|-------------------------------|--|----------------------------|-----------------------|----------------------|-------------------------|------------|-----------|-----------------------------|--|
| TECHNIC" RSB11 | White to Red Brown Powder | Resorcinol and Precipitate Silica Blend | 1.56 | 50 ± 2 | 46 ± 2 | 3.50 max | 12 months | 15 kgs | 4 - 5 phr | Resorcinol dispersed on carriers is des |
| TECHNIC® RL | Orange to Red Brown Liquid | Resorcinol and HMMM | 1.20 | 91 ± 2 | NIL | 3 max | 6 months | 25 kgs | 3 - 4 phr | Single Component Bonding System wit Ideal for Hose Application. |
| TECHNIC* RDL | White to Brown Powder | Resorcinol, HMMM & Silica Blend | 1.50 | 66 ± 2 | 30 ± 3 | 3 max | 12 months | 25 kgs | 3 - 4 phr | Single Component Bonding System wi on Silica. |
| Product | Appearance | Composition | Specific Gravity @ 25°C | Active Content (%) | Softening Point (°C) | Moisture Content (%) | Shelf Life | Packaging | Recommended Dosage (phr) | Function & Applic |
| RUBBOND RSA | Off White Grey to Red | Resorcinol and Stearic Acid | 1.10 - 1.30 | 67 ± 2 * | 100 - 110 | 0.30 max | 12 months | 25 kgs | 4 - 5 phr | * Other variation of 75% & 80% Activ |

| 12 months | 15 kgs | 4 - 5 phr | Resorcinol dispersed on carriers is designed to give easier mixing in rubber compounds. $ \\$ |
|------------|-----------|-----------------------------|---|
| 6 months | 25 kgs | 3 - 4 phr | Single Component Bonding System with both Resorcinol & Methylene Donor present. Ideal for Hose Application. |
| 12 months | 25 kgs | 3 - 4 phr | Single Component Bonding System with both Resorcinol & Methylene Donor dispersed on Silica. |
| Shelf Life | Packaging | Recommended Dosage (phr) | Function & Application |
| 12 months | 25 kgs | 4 - 5 phr | * Other variation of 75% & 80% Active content is also available. |

RESORCINOL RESINS -

| Product | Appearance | Composition | Specific Gravity @ 25°C | Softening Point (°C) | Free Resorcinol | Moisture Content (%) |
|---------------|----------------------------------|---|----------------------------|-------------------------|-----------------|-------------------------|
| TECHNIC" B18S | Orange Red to Brown Pastilles | Resorcinol Formaldehyde Resin | 1.36 | 100 - 110 | 18 max | 1 max |
| TECHNIC* B19S | Orange Red to Brown Pastille | Resorcinol Formaldehyde Resin | 1.36 | 100 - 114 | 15 max | 1 max |
| TECHNIC* B20S | Dark Red to Brown Pastille | Modified Resorcinol Formaldehyde Resin | 1.24 | 99 - 109 | 5 max | 0.70 max |
| TECHNIC* B21S | Red to Dark Brown Pastille | Modified Resorcinol Formaldehyde Resin | 1.30 | 100 - 110 | 8 max | 0.70 max |
| TECHNIC* B22Z | Dark Red to Brown Pastille | Modified Resorcinol Formaldehyde Resin | 1.20 | 100 - 110 | 0.10 max | 0.70 max |

| Shelf Life | Packaging | Recommended Dosage (phr) | Function & Application |
|------------|-----------|-----------------------------|---|
| 2 years | 25 kgs | 3 - 4 phr | It is a reaction product of Resorcinol with Formaldehyde, reducing the free monomer |
| 2 years | 25 kgs | 3 - 4 phr | content. Good for both tyre cord and brass plated tyre cord adhesion to rubber. |
| 2 years | 25 kgs | 3 - 4 phr | Low Free Resorcinol, very low fuming. Very suitable for steel cord adhesion. |
| 2 years | 25 kgs | 3 - 4 phr | Low Free Resorcinol, very low furning. Very suitable for steel cord adhesion |
| 2 years | 25 kgs | 3 - 4 phr | Very Low Free Resorcinol, no furning at all. Very suitable for steel cord adhesion |

HMMM RESIN & DISPERSIONS -

| Product | | Composition | Specific Gravity @ 25°C | Active Matter (%) | Ash Content (%) | (%) Free Formaldehyde |
|---------------|----------------------|--|----------------------------|----------------------|-----------------|--------------------------|
| RUBBOND HM100 | Clear Viscous Liquid | Hexa Methocy Methylol Melamine (HMMM) Resin | 1.20 | 98 | NIL | 0.10 max |
| RUBBOND HM72C | Free Flowing Powder | 72% HMMM on Calcium Silicate | 1.41 | 72 ± 1 | 25 ± 4 | 0.10 max |
| RUBBOND HM72 | Free Flowing Powder | 72% HMMM on PPT Silica | 1.41 | 72 ± 1 | 26 ± 3 | 0.10 max |
| RUBBOND HM650 | Free Flowing Powder | 65% HMMM on PPT Silica & Oil | 1.41 | 65 ± 1 | 28 ± 2 | 0.10 max |
| RUBBOND HM65 | Free Flowing Powder | 65% HMMM on PPT Silica | 1.41 | 65 ± 1 | 33 ± 2 | 0.10 max |
| RUBBOND HM50 | Free Flowing Powder | 50% HMMM on PPT Silica | 1.41 | 50 ± 1 | 45 ± 2 | 0.10 max |

| _ | | | | |
|---|------------|-----------|-----------------------------|--|
| | Shelf Life | Packaging | Recommended Dosage (phr) | Function & Application |
| | 12 months | 200 kgs | 3 - 4 phr | HMMM Methylene Donor is expected to provide abour 5 - 6 formaldehyde group to |
| | 12 months | 25 kgs | 4 - 5 phr | make cross-linking reactions with Resorcinol bonding system in rubber compounds HMMM improves processability of uncured rubber compounds. It enhances the |
| | 12 months | 25 kgs | 4 - 5 phr | physical, mechanical and dynamic properties of cured rubber compounds. It helps in maintain higher levels of adhesion after heat, humidity, steam and salt water ageing o |
| | 12 months | 25 kgs | 4 - 5 phr | rubber compounds. HMMM does not produces ammonia from the curing reaction and |
| | 12 months | 25 kgs | 4 - 5 phr | therefore, it is the methylene donor of choice for polyster and brass-coated steel cords reinforced rubber compounds. HMMM is a liquid material, for ease of hnadling it is |
| | 12 months | 25 kgs | 4 - 5 phr | dispersed on Silica, for handling ease. |
| | | | | |

HMT DISPERSIONS -

| Product | Appearance | Composition | Specific Gravity @ 25°C | Active Content (%) | Ash Content (%) | Moisture Content (%) |
|--------------|------------------------------|--|----------------------------|-----------------------|-----------------|-------------------------|
| RUBBOND SCH | Free Flowing White Powder | Hexa Methylene Tetramine on Carrier | 1.27 | 97 min | 3 max | 0.50 max |
| RUBBOND OSCH | Free Flowing White Powder | Hexa Methylene Tetramine on Carrier & Oil | 1.27 | 90 min | 4 max | 0.60 max |

| | Packaging | Recommended Dosage (phr) | Function & Application |
|-----------|-----------|-----------------------------|--|
| 12 months | 25 kgs | 2 - 4 phr | It offers a balanced combination of good adhesion and excellent flex fatigue resistance in conjunction with Resorcinol donow through formation of an in-situ resin during rubber |
| 12 months | 25 kgs | 2 - 4 phr | processing. Ideally it is added in the last stage of mixing with Sulphur & Accelerators. |

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| Product | Appearance | Composition | Specific Gravity @ 25°C | Softening Point (°C) | Ash Content (%) | Moisture Content (%) |
|----------------|--------------------------|--|----------------------------|-------------------------|-----------------|-------------------------|
| TECHNIC® KR140 | Yellow to Brown Pastille | p-tert-butylphenol Acetaldehyde Resin | 1.00 - 1.06 | 135 - 150 | 1 max | 0.70 max |
| TECHNIC* TR140 | Yellow to Brown Pastille | p-tert-butylphenol Formaldehyde Resin | 1.00 - 1.06 | 135 - 145 | 1 max | 0.70 max |

| | Packaging | Recommended Dosage (phr) | Function & Application |
|---------|-----------|-----------------------------|--|
| 2 years | 25 kgs | 2 - 4 phr | Super Tackifier for initial high tack and longer term tack retention. Very suitable for SBR compounds with higher dosage of Silica |
| 2 years | 25 kgs | 2 - 4 phr | High Performance Tackifier for initial high tack and long term tack retention |

TACKIFIER RESIN -

| | 120111 | | | | | | | | | |
|----------------|--------------------------|-------------------------------------|----------------------------|-------------------------|-----------------|----------|------------|-----------|-----------------------------|--------------------|
| | Appearance | Composition | Specific Gravity @ 25°C | Softening Point (°C) | Ash Content (%) | | Shelf Life | Packaging | Recommended Dosage (phr) | |
| TECHNIC® TR100 | Yellow to Brown Pastille | p-octylphenol Formaldehyde Resin | 1.00 - 1.04 | 95 - 105 | 1 max | 0.50 max | 2 years | 25 kgs | 2 - 10 phr | Genera all type |

2 years 25 kgs 2 - 10 phr General purpose Tackifler Resin for all purpose. It gives excellent initial tack. Suitable for all type of rubbers

REINFORCING PHENOLIC RESIN -

| Product | | Composition | Specific Gravity @ 25°C | Softening Point (°C) | | |
|---------------|----------|--|----------------------------|-------------------------|----------|-------|
| RUBBOND RR90 | Pastille | CNSL Modified Phenol Formaldehyde Resin | 1.10 | 80 - 105 | 0.50 max | 2 max |
| RUBBOND RR95 | Pastille | Tall Oil Modified Phenol Formaldehyde Resin | 1.05 | 90 - 105 | 0.50 max | 2 max |
| RUBBOND RR110 | Pastille | Phenol Formaldehyde Resin | 1.10 | 90 - 120 | 0.50 max | 2 max |
| RUBBOND RR160 | Pastille | Alkyl-Phenol modified Phenol Formaldehyde | 1 | 101 - 113 | 0.10 max | 1 max |

| Shelf Life | Packaging | Recommended Dosage (phr) | Function & Application |
|------------|-----------|-----------------------------|--|
| 1 year | 25 kgs | | It improves hardness, tear resistance, abrasion resistance, tensile strength, reduce Mooney Viscosity and prolonged scorch time properties in rubber compound. CNSL, Tall |
| 1 year | 25 kgs | | Oil & Alkyl-Phenol modification of PF Resin are expected to have better compatibility with rubber compounds so that accelerated filler dispersions with improved processability of |
| 1 year | 25 kgs | - | rubbers could be achieved. To avoid pre-vulcanisation and also to achieve good scorch properties, these resins are to be added as Methylene Acceptors in the first stage with a |
| 1 year | 25 kgs | | Methylene Donors like HMMM or HMT in the final stage along with Sulphur & Accelerators. |

CUT & CHIPPING RESISTANCE -

| Product | Appearance | Composition | Specific Gravity @ 25°C | Softening Point (°C) | | lodine Value | Shelf Life | | Recommended Dosage (phr) | Function & Application |
|---------------------|------------|-------------------------------------|----------------------------|-------------------------|----------|--------------|------------|--------|-----------------------------|--|
| TECHNIC** CCR120 | Pastilles | Modified DCPD, Rosin Co- Polymer | 1.07 | 120 - 130 | 0.50 max | 115 - 135 | 2 years | 25 kgs | 2 - 4 phr | CCR resin provides high tensile, high elongation at break, good dynamic stiffness and elongation tear strength properties, resulting in improvement of cutting, chunking & chipping of tire treads |

RESORCINOL DIPPING RESIN

| NESUNGINU | L DIFFING N | -SIN | | | | | | | | |
|--------------|------------------------------|--|----------------------------|-----------------------|------------------------|-------------|------------|-----------|-----------------------------|--|
| Product | Appearance | Composition | Specific Gravity @ 25°C | Solids Content (%) | Free Resorcinol (%) | | Shelf Life | Packaging | Recommended Dosage (phr) | |
| TECHNIC® R75 | Orange Red Viscous Liquid | Resorcinol Formaldehyde Resin in Aqueous Solution | 1.20 | 75 | 14 - 16 | 0.50 - 1.50 | 6 months | 200 kgs | | RFL dips prepared from the pre-formed RF Resin solutions showed better adhesion performance in nylon, aramid & polyester tire cords, R0 & R75 can directly be added to |
| TECHNIC® R50 | Orange Red Liquid | Resorcinol Formaldehyde Resin in Aqueous Solution | 1.17 | 50 | 9 - 10 | 1.00 - 2.00 | 6 months | 200 kgs | | the latex withour ageing. Due to low viscosity of R50 resin solution, pumping is easy. The final RFL Dlps prepared using R50 & R75 have consistent quality for providing better adhesive performance in synthetic tire cords |







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| | | | |
| | | | |

| | Appearance | Composition | Specific Gravity @ 25°C | Congealing Point (°C) | N-Paraffin Content | C Max | Ash Content (%) |
|------------|------------------------------------|---|----------------------------|-----------------------|-----------------------|--------------------|-----------------|
| UBWAX 1242 | White to Light Yellow Pastilles | Blend of Paraffin Waxes and Microcrystalline Waxes | 0.92 | 70 -78 | 65 - 75 | 24 - 26 31 - 33 | 0.10 |
| WAX 1244 | White to Light Yellow Pastilles | Blend of Paraffin Waxes and Microcrystalline Waxes | 0.92 | 64 - 70 | 75 - 85 | 31 - 33 | 0.10 |
| WAX 1250 | White to Light Yellow Pastilles | Blend of Paraffin Waxes and Microcrystalline Waxes | 0.92 | 64 - 68 | 60 - 70 | 30 - 32 | 0.10 |
| BWAX 1252 | White to Light Yellow Pastilles | Blend of Paraffin Waxes and Microcrystalline Waxes | 0.91 | 60 - 69 | 60 - 85 | 30 - 32 | 0.10 |
| UBWAX 1253 | White to Light Yellow | Blend of Paraffin Waxes | 0.92 | 64 - 70 | 72 - 79 | 24 - 26 31 - 33 | 0.10 |

| Ash Content (%) | Shelf Life | Packaging | Function & Application |
|-----------------|------------|-----------|---|
| 0.10 | 2 Years | 25 kgs | Protection against Ozone attack, especially in a very low and very high temperature |
| 0.10 | 2 Years | 25 kgs | Protection against Ozone attack, especially in a temperature range of 10 - 50 ℃ |
| 0.10 | 2 Years | 25 kgs | Protection against Ozone attack, especially in a temperature range of 10 - 50 °C |
| 0.10 | 2 Years | 25 kgs | Protection against Ozone attack, especially in a temperature range of 10 - 50 °C |
| 0.10 | 2 Years | 25 kgs | Protection against Ozone attack, especially in a very low and very high temperature |

HOMOGENISING AGENT -

| Product | Appearance | Composition | Specific Gravity @ 25°C | Softening Point (°C) | Ash Content (%) | Shelf Life | Packaging | Recommended Dosage (phr) | Function & Application |
|------------|----------------|-------------------------------|----------------------------|-------------------------|-----------------|------------|-----------|-----------------------------|--|
| RUBBOND 40 | Black Pastille | Aromatic Hydrocarbon Resin | 1.04 | 96 - 106 | 2 max | 1 year | 25 kgs | 2 -5 phr | It improves mould flow and extrusion properties. Reduces nerve and shrinkages, improves homogenity of elastomers and fillers. Reduces mixing cycle time, energy consumption and viscodity. Enhances Green Tack |

PROCESS ADDITIVES - ACTIVATORS, ZINC BASED —

| | | , | | | | | | | | |
|----------------------|---|--|----------------------------|-----------------------|-----------------|------------------|------------|---------|--------------|--|
| Product | | Composition | Specific Gravity, g/cm3 | Dropping Point, °C | Ash Content (%) | Zinc Content (%) | Shelf Life | | Dosage (phr) | Function & Application |
| RUBBER AID - ZA73 | Grey White - Creamish Pastilles / Flakes | Mixture of Zn soaps of Aliphatic and Aromatic Carboxylic Acids | 1.24 ± 0.05 | 110 ± 7 | 20 ± 2 | 17 ± 1 | 2 years | 25 kgs | 2 - 5 | An effective activator for the sulfur vulcanization of diene rubbers, especially natural rubber and improves rubber compound modulus. An effective physical peptizer for the mastication of NR, also improves processability in mixing, extrusion and molding. |
| RUBBER AID - ZA74 | White – Creamish Pastilles/ Flakes | Mixture of Zn soaps of Aliphatic and Aromatic Carboxylic Acids | 1.10 ± 0.02 | 100 ± 5 | 16 ± 2 | 13 ± 1 | 2 years | 25 kgs | 2 - 4 | An effective physical peptizer for NR compounds. Can offer cure activation for increased reversion stability, processability and compound flow. |
| RUBBER AID - ZEH | Highly Viscous Yellowish Liquid | Zinc 2-Ethylhexanoate | 1.16 ± 0.05 | N.A. | 27 ± 2 | 23 ± 1 | 2 years | 200 kgs | 1 - 3 | It is a rubber soluble zinc soap and could be used as an activator for NR. It offers heat stability (reversion resistance) in NR compounds containing normal levels of sulfur, particularly with thiazole type accelerators. |

PROCESS ADDITIVES – DISPERSANTS for SILICA, ZINC BASED —

| Product | Appearance | Composition | Specific Gravity, g/cm3 | Dropping Point, °C | Ash Content (%) | Zinc Content (%) | Shelf Life | Packing | Dosage (phr) | Function & Application | |
|-----------------------|--|--|----------------------------|-----------------------|-----------------|------------------|------------|---------|--------------|--|--|
| RUBBER AID - PA44 | Beige to Creamish Pastilles/ Flakes | Mixture of Zinc and Alkali Soaps | 1.10 ± 0.05 | 100 ± 5 | 13 ± 1 | 8.50 ± 0.50 | 2 years | 25 kgs | 2 - 3 | Excellent flow promoter for rubber compounds with high level of white fillers, namely, silica, chalk, clay, et. It improves dispersion of fillers (especially minerals fillers) and has beneficial influence on batch-to-batch uniformity. Rubber Ald — PA 44 A decreases the | |
| RUBBER AID - PA44A | Beige to Creamish Pastilles/ Flakes | Blend of Fatty acid Derivatives (Mainly Zn) | 1.07 ± 0.05 | 95 ± 5 | 10 ± 1 | 8.50 ± 0.50 | 2 years | 25 kgs | 2 - 3 | tendency of re-agglomeration of silica. It is suitable for better extrusion and also, could be suitable for compression, transfer and injection molding applications. It could be useful as processing aid in the production of radial tires, rubber betts and cables. | |
| RUBBER AID - PA46F | Beige - Light Brown – Off White Pastilles | Blend of Fatty acid Derivatives | 1.03 ± 0.05 | 78 - 92 | 7.50 ± 1 | 5 ± 1 | 2 years | 25 kgs | 1 - 5 | Designed for high performance silica-loaded rubber compounds. Beneficial for use in high performance ites containing NR, BR, SSR, S-SSR rubbers. Improves processing and extrusion of silical loaded rubber compounds and stabilizes viscosities during extended storage conditions. | |
| RUBBER AID - PA49 | Beige - Light Brown – Off White Pastilles | Blend of Fatty acid Derivatives | 1.07 ± 0.05 | 112.50 ± 7.50 | 10 ± 5 | 8.50 ± 1 | 2 years | 25 kgs | 1 - 5 | Expected to reduce viscosity and improve extrusion rate in silica filled rubber compounds. Improves downstream processing while enhancing the physical propertia in silica based install and synthetic tubber compounds. Can be used with silane coupling agents and expected to exhibit synergistic effect and improves the compoun properties. Could be useful in injection and transfer modifiely, and also for continuous vulcanization due to its ability to stabilize vulcanization at high temperatures. | |
| RUBBER AID - PA50 | Beige to Brown Pastilles / Flakes | Zn Soaps of Un-Sat. Fatty Acids | 1.10 ± 0.05 | 103 ± 6 | 14.50 max | 14.50 | 2 years | 25 kgs | 3 - 5 | | |

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PROCESS ADDITIVES - DISPERSANTS for SILICA, ZINC BASED -

| Product | Appearance | Composition | Specific Gravity, g/cm3 | Dropping Point, °C | Ash Content (%) | Zinc Content (%) |
|-----------------------|--|--|----------------------------|-----------------------|-----------------|------------------|
| RUBBER AID - PA50P | Beige to Brown Pastilles / Flakes | Zinc Soaps of Mixed Fatty Acid | 1.05 ± 0.05 | 100 ± 5 | 13 ± 1 | 10.50 ± 0.50 |
| RUBBER AID - PA50T | Beige to Brown Pastilles / Flakes | Zinc Soap of Mixed Fatty Acids with Lubricants | 1.00 ± 0.05 | 97 ± 5 | 10.20 ± 1 | 8.50 ± 0.50 |
| RUBBER AID - PA60 | Beige Pastilles / Flakes | Mixture of Zinc Soaps of Higher Molecular Weight Fatty Acids | 1.15 ± 0.05 | 90 ± 6 | 20 ± 2 | 8.50 ± 0.50 |
| RUBBER AID - PA60T | Beige to Off White Pastilles / Flakes | Mixture of Zinc Soaps of High-Molecular Fatty Acids | 1.05 ± 0.05 | 75 - 95 | 12 – 14 | 10.50 ± 1.00 |
| RUBBER AID - PA70 | Beige - Light Brown Pastilles | Blend of Zinc Soaps of Unsaturated Fatty Acids and Esters | 1.10 ± 0.05 | 95 - 110 | 15.50 – 17.50 | 8.50 ± 0.50 |
| RUBBER AID - PA276 | Beige to Brown Pastilles / Flakes | Blends of FA Soaps mainly Aliphatic in Nature | 1.10 ± 0.05 | 100 ± 5 | 15 - 17 | 13 ± 1 |

| Shelf Life | Packing | Dosage (phr) | Function & Application | |
|------------|---------|--------------|--|--|
| 2 years | 25 kgs | 1 - 5 | It is rubber stable and does not bloom from the vulcanizates due to wide solubility rang Helps in the mastication, mixing and proper dispersion of fillers in NR mixed with PBR, SBR and NBR rubbers and rubber compounds. | |
| 2 years | 25 kgs | 2 - 5 | Could act as lubricant and can exhibit reducing effect on viscosity, facilitate mixing and processing of various rubbers. Saves energy by cooler mixing process and lower viscosities. | |
| 2 years | 25 kgs | 1 - 5 | The double bonds present in it could stabilize free radical formation, which in turn could improve reversion resistance and bars strength of rubber compounds. Can be used to lower power consumption during mixing cycle, dumping temp, Mooney viscosity and improve filler dispersions. | |
| 2 years | 25 kgs | 1 - 3 | Shortens the mixing time and improves the flow characteristics of the uncured compound. Improves mixing and thus enhances the incorporation of compound ingredients, and also improves flow and reduces heat build-up during extrusion process. | |
| 2 years | 25 kgs | 3 - 5 | Fast incorporation and improvs dispersion of the silica without sacrifice in wet skid resistance could be achieved. Could facilitate flow property compared with common zinc soaps as well as increased energy savings in the mixing step. | |
| 2 years | 25 kgs | 2 - 4 | Developed specifically for use in compounds containing high loadings of fillers, particularly with high surface area silicas. Reduces compound viscosity and enhances flow properly during extrusion, which could lead to improved processability. Expected to reduce the degree of filler-to-lifer re-agglomeration, known as storage hardening, in silica containing rubber compounds. | |

PROCESS ADDITIVES - DISPERSANTS for SILICA, ZINC FREE

| HUCESS F | RUCESS ADDITIVES - DISPERSANTS for SILICA, ZINC FREE | | | | | |
|----------------------------|--|--|----------------------------|-----------------------|-----------------|--|
| Product | Appearance | Composition | Specific Gravity, g/cm3 | Dropping Point, °C | Ash Content (%) | |
| RUBBER AID - ZF254/254M | Beige / Yellowish / Creamish Pastilles | Blend of Substituted Fatty Acid Amides | 1.01 ± 0.05 | 70 - 90 | < 0.01 | |
| RUBER AID - ZF212 | Lt. Tan / Off White / Pastilles | Blend of Fatty Acid Derivatives in an Inert Carrier | 1.10 ± 0.05 | 60 ± 5 | 20 ± 2 | |
| RUBBER AID - ZF16 | Beige to Brown Pastilles / Flakes | Mixture of Fatty Acid Soaps, predominantly Calcium | 1.00 ± 0.05 | 96 - 108 | 3 to 7 | |
| RUBER AID - ZF42 | Lt. Beige / Yellow / Brown / Pastilles | Blends of Fatty Acid Derivatives | 1.00 ± 0.05 | 90 ± 7 | 1 max | |
| RUBBER AID - ZF222 | Lt. Tan / Off White / Yellow / Pastilles | H.M Wt Fatty Acid Esters and Condensation Products | 1.00 ± 0.05 | 55 - 70 | 0.20 max | |
| RUBER AID - ZF80 | Beige / Yellowish / Off White / Pastilles | Blend of Fatty alcohols, Salts of Fatty Acids and Lubricants | 0.95 ± 0.05 | 105 - 115 | 2.50 - 3.50 | |

| | Packing | Dosage (phr) | Function & Application |
|---------|---------|--------------|--|
| 2 years | 25 kgs | 2 - 3 | A zinc free processing additive developed for highly filled silica compounds. Reduces the tendency of re-agglomation of filler particles, particularly silica. Maintains low viscosity during compound storage with good extrusion and does not influence on cured compound dynamic properties. |
| 2 years | 25 kgs | 2 - 5 | Could prevent sticking of rubbers and compounds to rotors and rolls and its addition can reduce the risk of scorching in highly loaded rubber compounds. Improves the flow properties of the rubber compound, which could result in tolling the molds faster and under lover pressure, particularly useful in injection and transfer molding operations, improves the dispensibility of highly active white filters and other imprecients. |
| 2 years | 25 kgs | 1 - 5 | > Improves flow properties of polymeric compounds by reducing viscosity and promoting slippage at the nobles-to-netal interest, which could lead to higher extrusion rates, improved dimensional stability and a constant level of die sevelt. > Eliminates stability to forbs in internal misers or open mills and carter roles. > An activating effect on the cross-aliking rate of sulfur cross- linked polymer / rubber compounds. > Improves EPDM flow and release characteristics in injection and extrusion processes. |
| 2 years | 25 kgs | 1 - 5 | It provide very good lubricating effects and helps to improve flow and mould release. Car be incorporated both in the internal mixer or on the mill and is recommended to add this additive with the fillers. |
| 2 years | 25 kgs | 2 - 4 | Exhibits good plasticizing properties and highly effective in polar NBR rubber compounds. Improves the flow and release properties. Prevents sticking of elastomers and rubber compounds to rotors and rolls and can reduce the risk of scorching in highly loaded compounds. |
| 2 years | 25 kgs | 1 - 5 | In comparison to other processing additives, it exhibits better compatibility with most polymers used in rubber industry and, could show excellent affinity to the commonly used fillers like silica, carbon black, chalk or calcined clay. |







