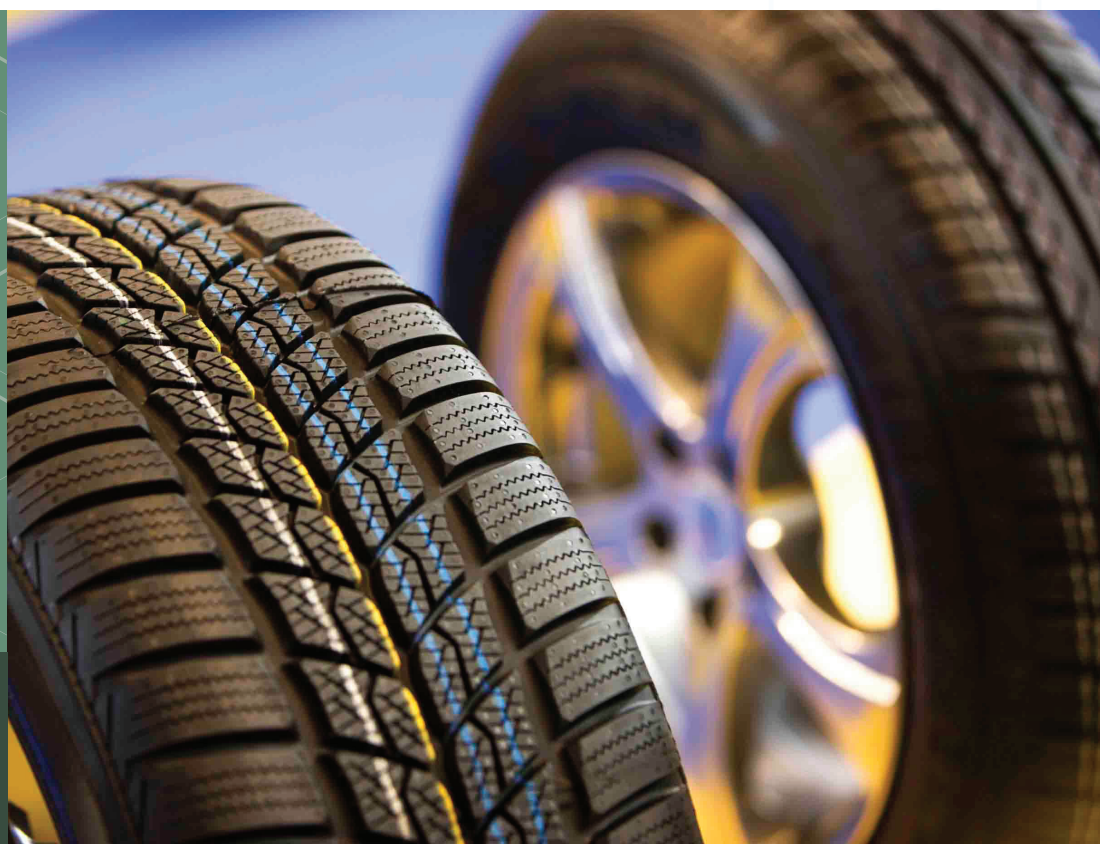




CHEM-UNIO
RUBBER CHEMICALS - CHOTÍN

**RUBBER
CHEMICALS**



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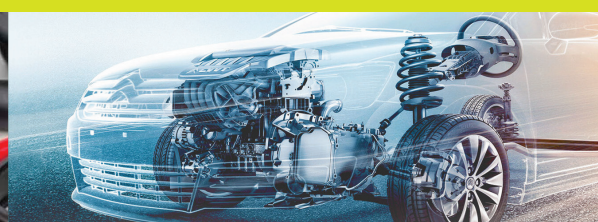
www.chemunio.sk

CHEM-UNIO spol. s r.o. is a Slovak manufacturing company that was established in 1991 and is active on domestic and international market. The company's offices, manufacturing, testing and dispatch operations are located in southern Slovakia in Chotín, just 8 km from Komárno.

Our company engages in unique activity in Slovakia. The main production is focused on preparation of low-dust vulcanizing agents and rubber additives.

The company's commitment is to provide excellent quality for our customers in respect of the used raw materials, manufacturing operations, laboratory tests and of course the end-products offered by us.

In addition to the quality of our products also the flexibility, competitive prices, short delivery time and introduction of new formulations in accordance with the requests of our customers are essential part of our business policy.



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ACCELERATORS

Abbreviation	Chemical composition	Product	%	Compatible Polymers	N-Nitroso Amine Free	N-Nitroso Amine Friendly	CAS	ORIGIN	TIRE	Conveyor belts	Seals	Cables	Pro-files	Belts	Air springs	Hoses	Applications	Availability
CBS	N-Cyclohexylbenzothiazole-2-Sulfenamide	Granchem CBS-80	80	EPDM,NR,SBR, BR,NBR,CR	●		95-33-0	CN	●	●	●	●	●	●	●	●	Basic rapid accelerator for all diene rubbers, especially for application in tire vulcanisation systems and anti-vibration elements.	●
CLD	Caprolactam Disulfide	Granchem CLD-80	80	NR,EPDM, SBR,NBR,IIR	●		23847-08-7	CN	●	●	●	●	●	●	●	●	Non-staining sulfur donor for the vulcanisation of heat resistant, N-nitrosoamine free articles. The best replacement for DTDM	●
DCBS	N,N-Dicyclohexylbenzothiazole-2-Sulfenamide	Granchem DCBS-80	80	EPDM , TPU	NO		4979-33-2	CN			●	●	●			●	Basic rapid accelerator for all diene rubbers, especially for application in tire vulcanisation systems and anti-vibration elements.	●
DPG	Diphenyl Guanidine	Granchem DPG-70	70	All synthetic and natural rubbers	●		102- 0607	EU	●	●	●	●	●	●	●	●	Accelerator for the vulcanisation of NR and SR, particularly used as a co-accelerator in combination with sulfenamides for tire tread and silica compounds	●
DPTT	Dipentamethylene Thiuram Tetrasulphide	Granchem DPTT-75	75	EPDM,IIR	NO		971-15-3	CN			●	●				●	Ultra accelerator for the vulcanisation of NR and SR, sulfur donor in sulfur free or low sulfur vulcanisation, most rapid cure among thiurams	●
DTDM	Dithiodimorpholine	Granchem DTDM-80	80	EPDM,NBR, SBR,NR	NO		103-34-4	CN	●	●	●	●	●	●	●	●	Non-staining sulfur donor for the vulcanisation of heat resistant NR and SR articles	●
HMT	Hexamethylene-tetramine	Granchem HMT-80	80	SBR,NR,BR,IIR	●		100-97-0	EU	●	●	●	●	●	●	●	●	Co-accelerator and methylene donor for resorcinol-based compounds for hardening or steel cord adhesion	●
MBT	2-Mercaptobenzo-thiazole	Granchem MBT-75	75	CR , SBR, NR,	●		149-30-4	EU	●	●				●		●	Rapid accelerator for the curing of NR and SR compounds for technical rubber goods, extruded profiles	●
MBT	2-Mercaptobenzo-thiazole	Granchem MBT-80	80	CR, SBR, NR	●		149-30-4	EU	●	●				●		●	Rapid accelerator for the curing of NR and SR compounds for technical rubber goods, extruded profiles	●
MBTS	Mercaptobenzo-thiazole Disulphide	Granchem MBTS-75	75	NBR,SBR, NR,CR,IIR	●		120-78-5	CN	●	●	●	●	●	●	●	●	Semi-ultra accelerator for the vulcanisation of NR and SR, moderate curing speed	●
MBTS	Mercaptobenzo-thiazole Disulphide	Granchem MBTS-80	80	NBR,SBR, NR,CR,IIR	●		120-78-5	CN	●	●	●	●	●	●	●	●	Semi-ultra accelerator for the vulcanisation of NR and SR, moderate curing speed	●
OTBG	Orthotolyl Biguanide	Granchem OTBG-50	50	All rubbers / low efficiency in EPDM , IIR	●		93-69-6	EU		●	●	●	●	●	●	●	Fast curing secondary accelerator without sulfur donor function, typically used in combinations with sulfenamides or mercaptobenzo-thiazoles	●
TBBS	N-tert.Butyl-2-Benzothiazyl Sulfenamide	Granchem TBBS-80	80	NR, SBR, NBR,	●		95-31-8	EU	●	●						●	Basic rapid accelerator for all diene rubbers, especially for application in tire vulcanisation systems and anti-vibration elements.	●
TBzTD	Tetrabenzyl Thiuram Disulphide	Granchem TBzTD -70	70	All synthetic and natural rubbers		●	10591-85-2	CN	●	●	●	●	●	●	●	●	Ultra accelerator for the vulcanisation of NR and SR, N-nitrosoamine free sulfur donor in sulfur free or low sulfur vulcanisation	●
TBzTD	Tetrabenzyl Thiuram Disulphide	Granchem TBzTD-70/ NBR	70	All synthetic and natural rubbers		●	10591-85-2	CN	●	●	●	●	●	●	●	●	Ultra accelerator for the vulcanisation of NR and SR, N-nitrosoamine free sulfur donor in sulfur free or low sulfur vulcanisation	●

ACCELERATORS

Abbre- viation	Chemical composition	Product	%	Compatible Polymers	N-Nitroso Amine Free	N-Nitroso Amine Friendly	CAS	ORIGIN	TIRE	Conveyor belts	Seals	Cables	Pro- files	Belts	Air springs	Hoses	Applications	Availability
TETD	Tetraethyl Thiuram Disulphide	Granchem TETD-80	80	All synthetic and natural rubbers	NO		97-77-8	CN									Scorch safe ultra-accelerator for the vulcanisation of NR and SR, and curing agent for sulfur-less or low sulfur vulcanisation	
TETD	Tetraethyl Thiuram Disulphide	Granchem TETD-70/ NBR	70	All synthetic and natural rubbers	NO		97-77-8	CN									Scorch safe ultra-accelerator for the vulcanisation of NR and SR, and curing agent for sulfur-less or low sulfur vulcanisation, especially designed for vulcanisation of NBR	
TiBTD	Tetra-Iso-Butyl Thiuram Disulphide	Granchem TiBTD-80	80	All syntetic and natural rubbers		●	3064-73-1	CN		●	●	●	●	●		●	Fast curing primary or secondary accelerator for the vulcani- sation of NR and SR, N-nitrosoamine free sulfur donor in sulfur free or low sulfur vulcanisation, replacement of TMTD or TETD if N-nitrosoamine free vulcanisation is needed	
TiBTD	Tetra-Iso-Butyl Thiuram Disulphide	Granchem TiBTD-70/ NBR	70	All syntetic and natural rubbers		●	3064-73-1	CN		●	●	●	●	●		●	Fast curing primary or secondary accelerator for the vulcani- sation of NR and SR, N-nitrosoamine free sulfur donor in sulfur free or low sulfur vulcanisation, replacement of TMTD or TETD if N-nitrosoamine free vulcanisation is needed	
TMTD	Tetramethyl Thiuram Disulphide	Granchem TMTD-80	80	All syntetic and natural rubbers	NO		137-26-8	EU	●	●	●	●	●	●	●	●	Ultra-accelerator for the vulcanisation of NR and SR compounds and curing agent for sulfur-less or low sulfur vulcanisation	
TMTM	Tetramethyl Thiuram Monosulphide	Granchem TMTM-80	80	SBR,CR, NR, IIR, NBR	NO		97-74-5	CN									Ultra-accelerator for the vulcanisation of NR and SR com- pounds and curing agent for low sulfur vulcanisation	
ZBEC	Zink Dibenzyl Dithiocarbamate	Granchem ZBEC-70	70	NR, SBR, NBR, EPDM, IR, IIR		●	14726-36-4	CN	●	●	●	●	●	●	●	●	Ultra-accelerator for NR and SR, N-nitrosoamine free, recom- mended especially for continuous vulcanisation of EPDM	
ZBEC	Zink Dibenzyl Dithiocarbamate	Granchem ZBEC-70/ NBR	70	NR, SBR, NBR, EPDM,IR,IIR		●	14726-36-4	CN	●	●	●	●	●	●	●	●	Ultra-accelerator for NR and SR, N-nitrosoamine free, espe- cially designed for vulcanisation of NBR	
ZBOP	Zink Dialkyl Dithiophosphate	Granchem ZBOP-50	50	NR, SBR, NBR, EPDM, IR, IIR	●		68442-22-8	USA					●			●	Non-staining and non-discolouring specialty accelerator for rapid vulcanisation of EPDM and NR compounds not creating N-nitrosoamines	
ZBPD	Zink Dialkyl Dithiophosphate	Granchem ZBPD-50	50	NR, SBR, NBR, EPDM, IR, IIR	●		6990-43-8	USA					●			●	Non-staining and non-discolouring specialty accelerator for rapid vulcanisation of EPDM and NR compounds not creating N-nitrosoamines	
ZDBC	Zink Dibuthyl Dithiocarbamate	Granchem ZDBC-75	75	BR, EPDM, NR, SBR, NBR, IR	NO		136-23-3	CN	●	●	●	●	●	●	●	●	Ultra-accelerator for NR and SR, dosage kept under 1 phr because of blooming. Combination with other carbamates recomended	
ZDEC	Zink Diethyl Dithiocarbamate	Granchem ZDEC-75	75	BR, EPDM, NR, SBR, NBR, IR	NO		14324-55-1	CN	●	●	●	●	●	●	●	●	Ultra-accelerator for NR and SR, dosage kept under 1 phr because of blooming. Combination with other carbamates recomended	
ZDMC	Zink Dimethyl Dithiocarbamate	Granchem ZDMC-70	70	SBR, NR, EPDM, NBR	NO		137-30-4	EU	●	●	●	●	●	●	●	●	Ultra-accelerator for NR and SR, dosage kept under 1 phr because of blooming. Combination with other carbamates recomended	
ZDMC	Zink Dimethyl Dithiocarbamate	Granchem ZDMC-80	80	SBR, NR, EPDM, NBR	NO		137-30-4	EU	●	●	●	●	●	●	●	●	Ultra-accelerator for NR and SR, dosage kept under 1 phr because of blooming. Combination with other carbamates recomended	

GRANCHEM - Predispersed chemical substances bound to EPDM, SBR, or NBR binder system or custom-made



CURING AGENTS

Abbre- viation	Chemical composition	Product	%	Compatible Polymers	N-Nitroso Amine Free	N-Nitroso Amine Friendly	CAS	ORIGIN	TIRE	Conveyor belts	Seals	Cables	Pro- files	Belts	Air springs	Hoses	Applications	Availability
S	Sulfur	Granchem S-80	80	All syntetic and natural rubber	●		7704-34-9	EU	●	●	●	●	●	●	●	●	Curing agent for all natural and synthetic rubbers	●
S	Sulfur	Granchem S-80 /SBR	80	All syntetic and natural rubber	●		7704-34-9	EU	●	●	●	●	●	●	●	●	Curing agent for all natural and synthetic rubbers, recomended especially for tires applications	●
IS	Insoluble Sulfur	Granchem IS90-65	65	All syntetic and natural rubber	●		9035-99-8	EU	●	●						●	Vulcanising agent for natural rubber and synthetic rubber compounds	●

CURING ACTIVATORS

Abbre- viation	Chemical composition	Product	%	Compatible Polymers	N-Nitroso Amine Free	N-Nitroso Amine Friendly	CAS	ORIGIN	TIRE	Conveyor belts	Seals	Cables	Pro- files	Belts	Air springs	Hoses	Applications	Availability
MgO	Magnesium Oxide	Granchem MgO-40/ BIIR	40	CR, CM,FPM, CIIR	●		1309-48-4	EU			●		●		●	●	Curing activator and acid acceptor for chloroprene rubber and halo-butyl rubbers based on high active silica	●
MgO	Magnesium Oxide	Granchem MgO-50	50	CR, CM,FPM, CIIR	●		1309-48-4	EU			●		●		●	●	Curing activator and acid acceptor for chloroprene rubber and halo-butyl rubbers based on high active silica	●
MgO	Magnesium Oxide	Granchem MgO-60	60	CR, CM,FPM, CIIR	●		1309-48-4	EU			●		●		●	●	Curing activator and acid acceptor for chloroprene rubber and halo-butyl rubbers based on high active silica	●
ZnO	Zinc Oxide	Granchem ZnO-80	80	All syntetic and natural rubbers	●		1314-13-4	EU	●	●	●	●	●	●	●	●	Curing activator for using in natural rubber and synthetic rubber compounds	●
ZnO	Zinc Oxide	Granchem ZnO-80/ SBR	80	All syntetic and natural rubbers	●		1314-13-4	EU	●	●	●	●	●	●	●	●	Curing activator for using in natural rubber and synthetic rub- ber compounds, recomended especially for tire applications	●

* High active MgO is used

FLAME RETARDANTS

Abbre- viation	Chemical composition	Product	%	Compatible Polymers	N-Nitroso Amine Free	N-Nitroso Amine Friendly	CAS	ORIGIN	TIRE	Conveyor belts	Seals	Cables	Pro- files	Belts	Air springs	Hoses	Applications	Availability
Sb2O3	Antimony Trioxide	Granchem Sb2O3-85	85	All syntetic and natural rubbers	●		1309-64-4	CN		●			●			●	Flame retardant for flame resistance articles	●

GRANCHEM - Predispersed chemical substances bound to **EPDM, SBR,** or **NBR** binder system or custom-made



ADHESION PROMOTERS

Abbreviation	Chemical composition	Product	%	Compatible Polymers	N-Nitroso Amine Free	N-Nitroso Amine Friendly	CAS	ORIGIN	TIRE	Conveyor belts	Seals	Cables	Pro-files	Belts	Air springs	Hoses	Applications	Availability
HMT	Hexamethylene Tetramine	Granchem HMT-80	80	SBR,NR,BR,IIR,IR	●		100-97-0	EU	●	●						●	Co-accelerator and methylene donor for resorcinol-based compounds for hardening or steel cord adhesion	●

RETARDERS

Abbreviation	Chemical composition	Product	%	Compatible Polymers	N-Nitroso Amine Free	N-Nitroso Amine Friendly	CAS	ORIGIN	TIRE	Conveyor belts	Seals	Cables	Pro-files	Belts	Air springs	Hoses	Applications	Availability
CTP	N-(Cyclohexyltio) Phthalimide	Granchem CTP-50	50	All synthetic and natural rubbers	●		17796-82-6	CN	●	●	●	●	●	●	●	●	Pre-vulcanisation inhibitor for natural and synthetic rubber compounds based on sulfenamides and thiazols vulcanisation systems	●
CTP	N-(Cyclohexyltio) Phthalimide	Granchem CTP-80	80	All synthetic and natural rubbers	●		17796-82-6	CN	●	●	●	●	●	●	●	●	Pre-vulcanisation inhibitor for natural and synthetic rubber compounds based on sulfenamides and thiazols vulcanisation systems	●
BSA	N-Phenyl-N (Trichloromethylsulfonyl) Benzensulfonamide	Granchem BSA-80	80	All synthetic and natural rubbers	●		2280-49-1	EU	●	●	●	●	●	●	●	●	Retader for natural and synthetic rubber compounds based mostly on non sulfenamides and thiazols vulcanisations systems - i.e. thiurams and dithiocarbamates, offering improved physical properties	●
BSA	N-Phenyl-N (Trichloromethylsulfonyl) Benzensulfonamide	Granchem BSA-80 / SBR	80	All synthetic and natural rubbers	●		2280-49-1	EU	●	●	●	●	●	●	●	●	Retader for natural and synthetic rubber compounds based mostly on non sulfenamides and thiazols vulcanisations systems - i.e. thiurams and dithiocarbamates, offering improved physical properties	●

ANTIDEGRADANTS

Abbreviation	Chemical composition	Product	%	Compatible Polymers	N-Nitroso Amine Free	N-Nitroso Amine Friendly	CAS	ORIGIN	TIRE	Conveyor belts	Seals	Cables	Pro-files	Belts	Air springs	Hoses	Applications	Availability
MBI	2-Mercaptobenz-imidazole	Granchem MBI-80	80	All synthetic and natural rubbers	●		583-39-1	India			●					●	Non-staining antioxidant for vulcanisates based on NR and SR. Superior thermal resistance. Synergistic effect with phenolic or amine antioxidants	●
MMBI	4/5-Methyl-2-Mercaptobenz-imidazole	Granchem MMBI-70	70	All synthetic and natural rubbers	●		53988-10-6	India			●		●		●		Non-staining antioxidant for vulcanisates based on NR and SR. Good against thermal degradation. Synergistic effect with phenolic or amine antioxidants	●

DRY LIQUIDS

SPECIAL CHEMICALS - Chemuniol / Antonox / Aktipol - Chemical substance bound to silica or to mineral oil



ACCELERATORS

Abbre- viation	Chemical composition	Product	%	Compatible Polymers	N-Nitroso Amine Free	N-Nitroso Amine Friendly	CAS	ORIGIN	TIRE	Conveyor belts	Seals	Cables	Pro- files	Belts	Air springs	Hoses	Applications	Availability
ZBPD	67% Zink Dialkyl Dithiophosphate, 33% Silica	Chemuniol ZBPD-67	67	NR, SBR, NBR, EPDM,IR,IIR	●		6990-43-3	USA	●			●				●	Non-staining and non-discolouring specialty accelerator for rapid vulcanisation of EPDM and NR compounds not creating N-nitrosoamines	●
ZBPD	70% Zink Dialkyl Dithiophosphate, 30% Silica	Chemuniol ZBPD-70	70	NR, SBR, NBR, EPDM,IR,IIR	●		6990-43-8	USA	●			●				●	Non-staining and non-discolouring specialty accelerator for rapid vulcanisation of EPDM and NR compounds not creating N-nitrosoamines	●
ZBPD	75% Zink Dialkyl Dithiophosphate, 25% Silica	Chemuniol ZBPD-75	75	NR, SBR, NBR, EPDM,IR,IIR	●		6990-43-8	USA	●			●				●	Non-staining and non-discolouring specialty accelerator for rapid vulcanisation of EPDM and NR compounds not creating N-nitrosoamines	●
ZBOP	75% Zink Dialkyl Dithiophosphate, 25% Silica	Chemuniol ZBOP-75	75	NR, SBR, NBR, EPDM,IR,IIR	●		68442-22-8	USA	●				●			●	Non-staining and non-discolouring specialty accelerator for rapid vulcanisation of EPDM and NR compounds not creating N-nitrosoamines	●

CURING AGENTS

Abbre- viation	Chemical composition	Product	%	Compatible Polymers	N-Nitroso Amine Free	N-Nitroso Amine Friendly	CAS	ORIGIN	TIRE	Conveyor belts	Seals	Cables	Pro- files	Belts	Air springs	Hoses	Applications	Availability
IS	80% Insoluble Sulphur, 20% Oil	Chemuniol IS90-20	80	All syntetic and natural rubbers	●		9035-99-8	EU	●	●						●	Vulcanising agent for natural rubber and synthetic rubber compounds in powder form	●
IS	67% Insoluble Sulphur, 8% Silica, 25% Oil	Chemuniol IS90-25	67	All syntetic and natural rubbers	●		9035-99-8	EU	●	●						●	Vulcanising agent for natural rubber and synthetic rubber compounds in powder form	●
IS	67% Insoluble Sulphur, 33% Oil	Chemuniol IS90-67	67	All syntetic and natural rubbers	●		9035-99-8	EU	●	●						●	Vulcanising agent for natural rubber and synthetic rubber compounds in powder form	●

ANTIOXIDANTS

Abbre- viation	Chemical composition	Product	%	Compatible Polymers	N-Nitroso Amine Free	N-Nitroso Amine Friendly	CAS	ORIGIN	TIRE	Conveyor belts	Seals	Cables	Pro- files	Belts	Air springs	Hoses	Applications	Availability
SP	60% Styrenated Phenole, 40% Silica	Antonox SNF-60	60	All syntetic and natural rubbers	●		61788-44-1	EU				●				●	Non staining and nondiscolouring antioxidant for NR and SR. Good protection against crazing effect. Recomendated especially for shoe applications, coloured bicycle tires, coloured hoses	●
SP+MBI	65% Synergistic mixture of styrenated Phenole 2- Mercaptobenz- imidazole, 35% Silica	Antonox FI-65	65	All syntetic and natural rubbers	●		61788-44-1/ 583-39-1	EU/ India		●	●	●		●		●	Non staining and nondiscolouring antioxidant for NR and SR. Good protection against crazing effect. For all kind of TRG, where staining and discolouring effect problematic is	●

CURING ACTIVATORS

Abbre- viation	Chemical composition	Product	%	Compatible Polymers	N-Nitroso Amine Free	N-Nitroso Amine Friendly	CAS	ORIGIN	TIRE	Conveyor belts	Seals	Cables	Pro- files	Belts	Air springs	Hoses	Applications	Availability
TEA	60% Triethanol- amine, 40% Silica	Aktipol TEA/S	60	All syntetic and natural rubbers	●		102-71-6	EU			●	●				●	Curing activator and promotor for all kind of non carbon black reinforcing fillers.	●

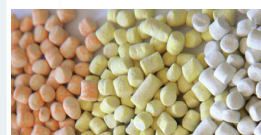
ADVANTAGES OF POLYMER BOUND CHEMICALS

- Better handling and safety for the long-lasting storage and transport stability.
- No dusting- protection of working environment (no protective clothing, necessary clean mixing area and machines)
- Free-flowing granules mean easy handling and allow more precise weighing and dosing, especially in an automated continuous process.
- Top dispersibility provides improved quality (elastomer binders are fully compatible with elastomers).
- Reduced incorporation time reduces the energy cost.
- The consistent quality of ready mixed batches bring trouble-free processes and an overall improved quality (no agglomerates).
- Due to shorter mixing time the scorch risk is reduced.
- Rejection rates are minimized and costly high reworking processes can be avoided.

PACKAGING

GRANULATED

25 kg. net paper bags with PE, 600 kg. net EURO pallets (120x80), or
 25 kg. cardboard box, 600 kg. net EURO pallets (120x80)



PULVER

25 kg. net paper bags with PE, 500 kg. net EURO pallets (120x80)



AVAILABILITY



Regular production (RP)

- till 4 weeks



Make to order (MTO)

- till 4 weeks if EU raw material
- 3 months if is ASIA raw material for the first order
- after that 4 weeks if regulary order

