ULTRA-FLOW™

These internal lubricants lower the polymer-polymer and polymer-filler interactions, thus greatly lowering rubber compound viscosities for increased mixing and extrusion efficiency. ULTRA-FLOW™ products help in stabilising compound viscosity upon storage and give rise to quicker compound relaxation behind the extrusion die. They significantly improve the down line processes by providing better control over the dimensional stability of the semi-finished or finished articles.

Product	Appearance / Form	Chemical Composition	Dropping Point (°C)	Applications
ULTRA-FLOW™ 440	Beige pastilles	Blend of metal soaps of fatty acids.	95	A unique processing additive for natural and synthetic rubber. It provides excellent improvement of processability especially for silica-filled compounds.
ULTRA-FLOW™ 500	Beige pastilles	Zinc soaps of unsaturated fatty acids.	103	An effective physical peptiser for natural rubber. It improves reversion resistance and tear properties.
ULTRA-FLOW™ 600	Beige to brown pastilles	Zinc soaps of unsaturated fatty acids on an inert carrier.	90	It improves mixing and processing as well as the incorporation of compounding ingredients. It also acts as a physical peptiser for both natural and synthetic rubbers.
ULTRA-FLOW™ 600T	Beige to brown pastilles	Zinc soaps of unsaturated fatty acids.	85	It is a more effective version of ULTRA-FLOW™ 600.
ULTRA-FLOW™ 700S	Beige to brown pastilles	Blend of zinc soaps of unsaturated fatty acids and esters.	103	An extremely effective dispersing aid for white fillers. It is particularly effective in highly loaded silica compounds.
ULTRA-FLOW™ 730	Beige pastilles	Blend of metal salts of aromatic and aliphatic carboxylic acids.	113	It is a strong anti-reversion additive for natural rubber.

Product	Appearance/ Form	Chemical Composition	Dropping Point (°C)	Applications
ULTRA-FLOW™ 800	Beige pastilles	Blend of calcium soaps of unsaturated fatty acids and esters.	88	A zinc-free processing additive. It is applied where zinc soaps are restricted.
ULTRA-FLOW™ 840	Beige pastilles	Blend of metal salts of aromatic and aliphatic carboxylic acids.	100	It improves the following static and dynamic properties: reversion resistance, compression set and heat build-up of natural rubber compounds.
ULTRA-FLOW™ ZEH / ZEH DL	Yellow liquid / Yellow powder	Zinc 2-ethylhexanoate / ZEH on a silica carrier.	N/A	It is an effective activator for sulphur curing systems of natural rubber. It can partially or completely replace stearic acid and works to reduce stress relaxation and creep of natural rubber parts. ULTRA-FLOW™ ZEH DL is designed for easy handling.

ULTRA-FLOW™ √ = As Used √√ = Best Suited	ULTRA-FLOW™ 440	ULTRA-FLOW™ 500	ULTRA-FLOW™ 600	ULTRA-FLOW™ 600T	ULTRA-FLOW™ 700S
Chemical Composition	**Blend of metal soaps of fatty acids**	**Zinc soaps of unsaturated fatty acids**	**Zinc soaps of unsaturated fatty acids on an inert carrier**	**Zinc soaps of unsaturated fatty acids**	**Blend of zinc soaps of unsaturated fatty acids and esters**
Functions					
Homogenising	–	–	–	–	–
Tackifying	–	–	–	–	–
Dispersing and viscosity reduction	√	√	√	√	√√
Compound flow	√√	√√	√√	√√	√√
Prevent sticking to mill rolls and/or rotors	–	–	–	–	–
Reversion resistance	–	–	–	–	–
Process enhancement					
Mixing (faster incorporation)	√	√	√	√	√
Extrusion	√√	√√	√√	√√	√√
Calendering	√	√	√	√	√
Moulding (release)	–	–	–	–	–
Appearance	Beige pastilles	Beige pastilles	Beige to brown pastilles	Beige to brown pastilles	Beige to brown pastilles
Dropping point, (°C)	95	103	90	85	103
Dosage (phr)	1 ~ 3	2 ~ 5	2 ~ 5	1 ~ 3	1 ~ 5
Sequence of addition					
At beginning of mix cycle with polymer(s)	–	–	–	–	–
With filler(s) and/or small ingredients	√	√	√	√	√
At last mixing stage	–	–	–	–	–
** After silica / coupling agent silanisation	–	–	–	–	√
As used for:					
NR	√	√	√	√	√√
SBR	√	√	√	√	√√
BR	√	√	√	√	√
NBR	√	√	√	√	√
EPDM	√	√	√	√	√
IIR	–	–	–	–	–
ACM	√	√	√	√	√
EVA	√√	–	√	–	–

ULTRA-FLOW™ √ = As Used √√ = Best Suited	ULTRA-FLOW™ 730	ULTRA-FLOW™ 800	ULTRA-FLOW™ 840	ULTRA-FLOW™ ZEH / ZEH DL
Chemical Composition	**Blend of metal salts of aromatic and aliphatic carboxylic acids**	**Blend of calcium soaps of unsaturated fatty acids and esters**	**Blend of metal salts of aromatic and aliphatic carboxylic acids**	**Zinc 2-ethylhexanoate / ZEH on a silica carrier**
Functions				
Homogenising	–	–	–	–
Tackifying	–	–	–	–
Dispersing and viscosity reduction	√√	√√	√√	√√
Compound flow	√√	√√	√√	√
Prevent sticking to mill rolls and/or rotors	–	–	–	–
Reversion resistance	√	–	√	√
Process enhancement				
Mixing (faster incorporation)	√	√	√	√
Extrusion	√√	√√	√√	√
Calendering	√	√	√	√
Moulding (release)	–	–	–	–
Appearance	Beige pastilles	Beige pastilles	Beige pastilles	Yellow liquid / Yellow powder
Dropping point, (°C)	113	88	100	N/A
Dosage (phr)	2 ~ 4	2 ~ 5	2.5 ~ 5	2 ~ 3
Sequence of addition				
At beginning of mix cycle with polymer(s)	–	–	–	–
With filler(s) and/or small ingredients	√	√	√	√
At last mixing stage	–	–	–	–
** After silica / coupling agent silanisation	–	–	–	–
As used for:				
NR	√√	√√	√√	√√
SBR	√√	√√	√√	–
BR	√	√	√	–
NBR	√√	√	√	–
EPDM	√	√	√	–
IIR	–	–	–	–
ACM	√	√	√	–
EVA	–	–	–	–