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**RUBBER CHEMICALS
 -ACCELERATORS-
 DITHIOCARBAMATES**

ACCELERATOR ZDBCX

PRODUCT DESCRIPTION:

ZDBCX, zinc N, N-di-n-butyl dithiocarbamate:di-n-butylamine complex is an ultra-accelerator which is active at room temperature. It can be further activated by Z.I.X., and may also be used as a booster for thiazoles. It may be used in natural rubber and SBR for dry mixes, cements, and latex. It is of particular value for the preparation of transparent and translucent articles from both latex and dry rubber.

TYPICAL PROPERTIES:

Formula	((n-C4H9)2NCSS)2Zn/(n-C4H9)2NH
Appearance	light brown, slightly turbid liquid
Odor	smells faintly of dibutylamine
Storage stability.	good, if kept cool & dry in closed containers
Staining properties.	non-discoloring and non-staining
Purity	97% minimum
Solubility	soluble in aliphatic & aromatic hydrocarbons hydrocarbons, can be emulsified in water

ZDBCX IN CEMENTS:

ZDBCX is a liquid miscible in all proportions with rubber solvents. When used in cements it does not need to be incorporated on the mixing mill, but can be added at the solution stage. The finished cement has a very short pot-life and the accelerator should be added only to as much of the cement as will be needed for each day's work. If Z.I.X. is used to activate ZDBCX it should be added similarly as a slurry in toluene.

For cements 1.5 phr of sulfur is recommended, with from 1 to 3 phr of ZDBCX. Such cements will gel in 3 to 5 days at 20°C according to the proportion of accelerator present. Using 0.75 ZDBCX and 0.75 Z.I.X. the curing time is reduced to 1 day at 20°C.

ZDBCX IN DRY NATURAL RUBBER:

ZDBCX is a very good low temperature accelerator for milled Natural Rubber. Its principal advantages are:

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ZDBCX IN DRY NATURAL RUBBER (cont):

- it can be milled in without decomposition
- the mix can be extruded without scorch provided precautions are taken
- the mix can be cured in hot air at relatively low temperature

Typical use level is 1.25 phr ZDBCX with 2.25 phr sulfur. The latter are added on the warm-up mill immediately before processing, as otherwise the mix will set-up if stored for any length of time after those ingredients have been added. A "tight" cure may be obtained in an oven at 70°C for 90 minutes.

ZDBCX IN TRANSLUCENT SBR COMPOUNDS:

Satisfactory accelerator systems for curing translucent SBR compounds for e.g. footwear soles, consist of ZDBCX with a sulphenamide or a thiazole. Typical levels are 1.0 phr ZDBCX with 0.75 phr CBTS; or the CBTS may be replaced by the same amount of a 1:1 mixture of MBT and MBTS, with only slight deterioration in properties.