

## VulcaPellet<sup>®</sup> SP-GR

### 预分散台翔药胶<sup>®</sup> SP-GR

#### PRE-DISPERSED POLYMER BOUND

### COMPOSITION (成份)

VulcaPellet<sup>®</sup> SP-GR pre-dispersed liquid styrenated phenol (SP) antioxidant in elastomeric binder. The polymer bound pre-dispersed masterbatch provides good dispersion and improved handling form over the viscous liquid SP and dusty SP powder for a dustless work environment. In addition, it can be used to replace other hindered phenolic antioxidant e.g. BHT for less cost while provides comparable cured rubber stabilization.

台翔药胶<sup>®</sup> SP-GR 台翔药胶<sup>®</sup> 预分散液体苯乙烯化酚 (SP) 于橡胶弹性载体。预分散的台翔药胶<sup>®</sup> SP-GR 无 SP-P (预混苯乙烯化酚 (SP)-白炭黑粉末) 的粉尘污染；提供较黏稠液体苯乙烯化酚 (SP) 改善的操作性。使用可取代 BHT 以节省成本。使用等剂量的台翔药胶<sup>®</sup> SP-GR 可以达到相等于 BHT 的防护效果。

### ADVANTAGES (产品优势)

- Accurate weighing and better handling than viscous liquid SP
- No SP-P (SP powder) dust content/generation
- Minimized pre-matured oxidation and discoloration during storage

- Better affinity to rubber, rapid incorporation, and homogeneous dispersion
- Free flowing, non-dusting, and better handling
- Energy consumption reduced during the mixing process
- No granules caking or agglomerates during normal storage conditions
- 较黏稠液体苯乙烯化酚 (SP) 准确计量及操作
- 无 SP-P (预混苯乙烯化酚 (SP)-白炭黑粉末) 的粉尘污染
- 抑制苯乙烯化酚 (SP) 母胶粒的预早氧化及颜色变化; 长期贮存新生态的防护效果及雪白颜色
- 胶体亲和力好, 快速混炼, 及良好的分散性
- 操作时流动性好, 无尘埃污染
- 有效节省混炼能源
- 运送及储存产品不结团成块

## PROPERTIES (物性)

Appearance 外观	White granules 白色颗粒
Specific Gravity (g/cm <sup>3</sup> ) 比重	Approx. 1.25

Volatility (80°C/2hr) 挥发度	< 1.0%
Mooney Viscosity (ML 1+4 @ 50°C) 摩尼黏度	≤ 105
Storage Stability 储存期	Two year under normal storage conditions. 在良好的保存环境下可保存两年
Packing 包装	25 kg in paper bag. 25 公斤纸袋

**Note:** This product is characterized with minor change of color, depending on the ambient environment and the period of storage. This phenomenon will not affect the designated chemical performance of this product in most cases. Color change can be prevented if this product is to be used in short period after purchasing.

**注 意:**此产品放置一段时间后, 产品颜色会有所变化, 其为产品本身的特性; 在绝大部份情况, 产品品质不变。如果在购买后短时间内使用, 则可避免颜色改变。

## RECOMMENDATIONS AND APPLICATIONS(应用范围及效果)

Hindered phenolic compounds are known in the art as antioxidants for the protection of organic substrates susceptible to deterioration resulting from oxidative aging. These phenolic compounds prevent the chain reaction of oxidative degradation by donating a hydrogen atom to the peroxy radical present. The resulting antioxidant radical is well stabilized and sterically hindered and thus prevented from acting as an initiator of further degradation.

受阻酚类防老剂是热氧化老化的防护剂。分子上的活泼氢原子在防止橡胶氧化过程中转移给过氧自由基(橡胶氧化中间体)生成稳定的产物，中止氧化老化的链式反应进而达到防护效果。

Styrenated phenol (SP) belongs to a low volatility, non-staining, non-discoloring, general purpose hindered phenolic antioxidant for the stabilization of natural and synthetic rubbers. The large scale industrial and commercial uses of liquid styrenated phenol, however, pose a multitude of practical problems. Such material is difficult to handle; its physical properties lead to inaccurate measurements. Its physical form frequently results in a significant percentage of waste due to materials adhering to containers and handling equipment.

苯乙烯化酚 (SP) 是橡胶通用的受阻酚类防老剂。具有低挥发度，色牢性及光稳定性。然而黏稠液体的苯乙烯化酚 (SP) 在实际工业操作上容易黏着在器皿上造成物料的浪费损失及计量上的不准确。

Attempts have been made to address these problems by mixing liquid styrenated phenol (SP) with a high liquid absorbing particulate material to produce a flowable powder and

the powder can be easily added to the batch to disperse the liquid in the compound. However, the products that result from such attempts have significant drawbacks. Frequently, the dispersion of the liquid material is not uniform; this results in a wide variability in the concentration of the material within the product. Also, products that have mineral filler as a binder, present a dispersion problem during the products incorporation into the end formulation, such as into a rubber formulation.

预混苯乙烯化酚 (SP) 液体在白炭黑表面形成苯乙烯化酚 (SP)-白炭黑粉末可以帮助黏稠液体苯乙烯化酚 (SP) 填充于配方中。预混苯乙烯化酚 (SP)-白炭黑粉末制造上存在着粉液体浓度不均匀。使用在橡胶混炼中也不容易达到良好的分散性。

In addition, powders may present a respiratory hazard for persons handling the product. Another disadvantage inhering in the use of styrenated phenol (SP) in powder form is their tendency to discoloration while stored under warming and humidification. Colors ranging from light tan or pink to dark green have been noted and are theorized to result from the oxidation of the phenolic antioxidant. Either discoloration or pre-matured oxidation diminishes its commercial value as a non-staining antioxidant.

预混 SP-白炭黑粉末同时会造成危害呼吸健康的粉尘污染。在长途运输及仓储也会因为周遭的湿度温度产生预早氧化变色。颜色变化从淡棕色到深绿色。此种预早氧化变色影响到的防护效果且会造成浅色橡胶制品的色污染。

In order to prevent the above drawbacks, attempts were carried out in the past, at granulating these additive powders, to facilitate handling, measuring and storing, and which can be added directly to the processes which require the liquid ingredient. Unfortunately, in most cases, the granulation process also shows coloring change under a high humidity condition. It is, therefore, desirable that the color and color stability of these phenolic antioxidants granulates be improved and that their tendency to tint and/or discolor the final product be reduced.

无粉尘的预分散母粒能够解决上述黏稠 SP 液体及预混 SP-白炭黑粉末使用上的缺失。但在制造时也会因造粒机内挤压高热产生颜色变化。橡胶工业需色牢性的预分散 SP 母粒提供准确的计量及良好的操作性。

VulcaPellet® SP-GR minimizes the discoloration by inhibiting the pre-matured oxidation during masterbatch manufacturing and the storage. It maintains the preferred nascent antioxidant activities with a reduced tendency to discolor. With the trend to lighter colored rubbers VulcaPellet® SP-GR offers the most desirable granulate form for better handling and maintains the color stabilization of styrenated phenol and rubbers stabilized with.

台翔药胶® SP-GR 抑制母胶粒制程所产生的苯乙烯化酚 (SP) 预早氧化及颜色变化。台翔药胶® SP-GR 保持着苯乙烯化酚 (SP) 新生态的防护效果及雪白颜色。具有长期贮存所需的稳定色牢性。适合使用于日益普及的透明浅色橡胶制品提供良好的操作性及准确的计量。

## DOSAGE (使用剂量)

We recommend trying initially VulcaPellet® SP-GR at 1:1 by weight in substitution of liquid styrenated phenol. Adjustments can be made according to actual effect. The dosage is between 1-3 phr.

使用预分散台翔药胶® SP-GR 取代苯乙烯化酚液体时。建议先沿用粉末使用剂量。视效果再酌量增减。使用量常介于 1 ~ 3 phr。

## MANUFACTURER (生产厂商)

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## IMPORTANT NOTE (备注)

Tai Xiang has sought to correct the above information, The information and data for reference purposes only. Concrete information please keep the standard of testing the kinds.

台翔公司对上述资料已力求正确，各项资料数据仅供参考，具体以实物检测为准。