英语学习

英语翻译技巧(12)

涂学忠
(化工部北京橡胶工业研究设计院 100039)

2.5 MASTERBATCHING

It is generally accepted that[1] masterbatching improves the physical properties of those compounds where a high degree of carbon black dispersion must be achieved[2]. Where a masterbatch is used, the proportion of ingredients in the masterbatch can be varied from that used in the compound, e. g. the masterbatch recipe may (a) be the same as the compound recipe, but without curatives; (b) contain only rubber, filler, and some softeners; or (c) be richer in filler than the final compound.

Each of these types of masterbatch is capable of improving black and filler dispersion in a tyre tread or other reinforced compound, but type (c) has been found less satisfactory than the other two. The problem is the dispersion in the hard filler masterbatch of the relatively soft polymers added in the next stage[3]. If a high-speed high-Pressure internal mixer is being used for masterbatching, it is inadvisable to incorporate accelerators in the masterbatch, as the temperature of the rubber is likely to exceed that of their activation temperature.

For many years carbon black has been mixed into synthetic rubbers, such as SBR, at the latex stage, to form a black masterbatch. The masterbatches have poor black dispersion, and a milling operation is essential not only to add the remaining ingredients to obtain a compound, but to achieve adequate dispersion of the black. Since the power consumed in this operation is high, there is little economic or technical advantage to be achieved from these latex-black masterbatches; plant contamination with black dust is, however, avoided.

It has been found that an aqueous dispersion of carbon black, if mixed with droplets in water of a polymer solution under conditions of high agitation[4], can give good black dispersion (Burgess, Hirshfield, and Stokes, 1965; Scott and Eckert, 1966, 1967). The high degree of agitation is needed so that the polymer solution sweeps out the carbon black particles to form a polymer-black mixture without reagglomeration of the carbon black. This is known as HSMB (hydrosolution masterbatch). Curatives can be added to the masterbatch in the conventional manner, and the resulting compound has physical properties at least as good as, and generally technically superior to, those which can be obtained by mixing in an internal mixer[5]. Whilst the economics of the process are not yet known, the originators claim that the HSMB is a viable proposition and plant is now being laid down for commercial manufacture. There is every possiblity that this type of masterbatch can succeed where the latex black masterbatch has failed, owing to the definite technical advantage to be obtained with HSMB.

生 词

masterbatching 母炼

recipe	配方
reinforce	补强,增强
inadvisable	不妥当,不明智的
activation temperature	活化温度,起活温度
contamination	污染
aqueous dispersion	水分散体
agitation	搅拌
sweep out	扫除,带走
reagglomeration	重新聚集
hydrosolution masterbatch	水分散炭黑母炼胶
originator	发明人

译　文

2.5　母炼胶制备

普遍认为①,制备母炼胶可提高那些炭黑必须高度分散胶料的物理机械性能②。使用母炼胶时,母炼胶中的配合剂比例可以不同于混炼胶。例如,母炼胶配方可以是(a)和混炼胶配方相同,但是有硫化剂;(b)仅含有生胶、填充剂和某些软化剂;或(c)填充剂比最终混炼胶多。

这3种母炼胶中的每一种都能改善轮胎胎面胶或其它补强胶料中炭黑和填充剂的分散,但配方(c)的效果不如其它两种好。填充剂含量高的硬母炼胶,下一阶段加入比较软的生胶后,其分散存在着问题③。如果用高速高压密炼机制备母炼胶,将促进剂混入母炼胶是不可取的,因为胶料的温度可能超过了促进剂的活化温度。

多年来,一直是在胶乳阶段就将炭黑混入丁苯橡胶等合成橡胶制成炭黑母炼胶。这些母炼胶的炭黑分散差,因此混炼工序不仅对于加入其余配合剂以获得混炼胶是必不可少的,而且也是使炭黑分散所必需的。由于这种混炼方法耗用的功率很大,因此采用这种胶乳炭黑母炼胶在经济上和工艺上都不合理;但可避免炭黑粉尘污染工厂。

业已发现,如果炭黑水分散体与小滴聚合物水溶液充分搅拌④,则可使炭黑分散良好(Burgess, Hirshfiel, and Stockes, 1965; Scott and Eckert, 1966, 1967)。搅拌须充分,以便聚合物溶液带走炭黑粒子形成炭黑母炼胶,而不会使炭黑重新聚集。这种母炼胶叫作HSMB,即水分散炭黑溶液母炼胶。可用普通方法将硫化剂加入母炼胶,得出的混炼胶物理机械性能至少相当于用密炼机加工的胶料,而工艺性能一般优于后者⑤。这种方法的经济性尚不得而知,但发明人宣称,HSMB是可行的,目前正在建造大批量生产的设备。由于HSMB具有一定的工艺优点,因此在胶乳炭黑母炼胶失败的母炼胶制备中,它却极有可能获得成功。

注:①"It is generally accepted that"意为"普遍认为",类似的表达方法还有"It is said that"为"据说","It is reported that"为"据报道"等。

②"where a high degree of carbon black dispersion must be achieved"为定语从句,修饰前面的"compounds",其中"where"="in which"。

③此句中,"of the relatively soft polymers…"是"the dispersion"的定语,因其后面有过去分词短语"added in the next stage"作定语,比较长,所以放到了状语"in the hard filler masterbatch"的后面。

④"It has been found that"可按有人称译为"有人发现",也可按无人称译为"业已发现"。"if mixed with…"为插入语。

⑤此句中"as good as"和"superior to"后面跟的都是"those"。

英译汉常见错误实例

The heating of the tire cords to the temperature to which they are subjected during the vulcanizing operation tends to shrink the prestretched cords and sets up tension in the nylon fabric of a tire being vulcanized which is often sufficient to create

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The heating of the tire cords to the temperature to which they are subjected during the vulcanizing operation tends to shrink the prestretched cords and sets up tension in the nylon fabric of a tire being vulcanized which is often sufficient to create

a slight but detectable distortion of the tire tread.

误:硫化过程中,预伸长的帘线加热后即收缩,使得被硫化的轮胎其尼龙帘线处于张力状态,这种张力经常足以产生轻微但可见的胎面变形。

正:轮胎帘线加热到硫化温度,则预伸张的帘线容易收缩,而且使硫化中轮胎的尼龙帘线承受张力,并足以使胎面产生明显的轻微变形。

注:①"to which…vulcanizing operation"是"temperature"的定语。

②"tends"和"sets up"是并列谓语动词。

市场信息

1994 年轮胎市场将出现三大变化

1994 年我国轮胎供货将全部取消指令性计划分配,完全纳入市场进行调节。轮胎市场将出现以下三大变化:

(1)小厂产品和非名牌产品销售将更加困难;大厂产品和名牌产品出现了订货难和抢购的现象。因而轮胎市场出现了销售畅滞并存的格局。

(2)轮胎价格全面放开,其价格总趋势是上升,但各厂家的出厂价格差距将进一步加大,名牌产品价格上涨多,非名牌产品价格上涨少。

(3)由于轮胎产销纳入市场调节,因而轮胎市场将出现多行业、多渠道经营,打破了以往物资系统独家经营的格局。

(本刊讯)

芜湖农业轮胎持续旺销

今年第 1 季度,安徽芜湖农机市场看好,仅该地区农机公司一家即销售农业轮胎 5660 套,比去年同期增长 47.05%,是历年同期最高的,主要规格有 6.00－12、6.00－16、6.50－16、7.50－20、9.00－20 等。产品供不应求的主要原因是农用机械保有量不断增长,维修用轮胎需求量随之增长;尤其是近年来农用运输机械异军突起,社会拥有量迅速增长,为农业轮胎开辟了广阔市场。预计年内仍持续旺销。

(本刊讯)

漳州轮胎市场首季销售火爆

据福建省漳州有关部门统计,一季度共销售轮胎 6025 套,比 1993 年同期增长 116%。其中,9.00－20 14PR 以上规格轮胎销售 4160 套,占总销售量的 69%;从销售品种看,回力、双钱、红旗牌轮胎销售量占 70%以上,是市场上的主销产品;从市场价格看,以 9.00－20 14PR 为例,首季平均单价为每套 783～785 元,比 1993 年同期平均单价上涨 6%,且市场变动不大。该地区市场首季轮胎销售量倍增的直接原因,是因春季货运量多,车辆出勤率高,有的车超载且又长途运输,导致轮胎磨损快,更新快。

(本刊讯)

世界橡胶销量将走出低谷

据国际合成橡胶制造者协会 5 年预测,1994 年世界合成橡胶销量正以 4.1%的速度增长,销售量达 940 万 t,预计 1998 年将达到 1100 万 t。

由于 1992～1993 年度世界经济不景气,1993 年世界合成橡胶销量仅为 902.7 万 t,下降 6%之多。下降最多的是独联体(37%)、中欧(13%)、西欧(5.3%),销售量增长的有亚洲(6%)、北美(3.4%)、拉丁美洲(2.2%)、中东和非洲(1.8%)。

今后 5 年各种类型的合成橡胶均将有所增长。据国际合成橡胶制造者协会预测,1994～1998 年丁苯橡胶干胶、羧基丁苯胶乳、聚丁二烯等各类橡胶产量的增长率一般在 15%左右,其中氯丁橡胶将达 56%。

(本刊讯)