



Manufactured Articles

Deciding when a substance which is part of a manufactured item is or is not covered by the HSNO Act

Introduction

For items to come within the jurisdiction of the hazardous substances part of the HSNO Act they must be just that – hazardous substances. Firstly, the item must meet the definition of a ‘substance’, as given in section 2 of the Act, and secondly, it must be determined to have an intrinsic hazardous property (or properties) that meets or exceeds the threshold level for that property which has been established by regulations. The intrinsic “hazardous substance” properties are also defined in section 2 of the Act.

The definition of substance in the Act includes ‘any manufactured article containing, incorporating or including any hazardous substances with explosive properties’. This provision was written in to make sure that (for example) explosive substances incorporated into detonators, flares or fireworks would still be covered.

The definition of substance does not make any further reference to manufactured articles in the context of any other type of hazardous property. The implication of this is that manufactured articles containing or incorporating hazardous substances with properties other than explosiveness are not considered to be substances under the HSNO Act. In this context, the EPA has adopted, in Protocol (Interpretations and Explanations of Key Concepts), the following working definition of manufactured article:

‘something for which its intended use is primarily to do with its physical shape, rather than its chemical composition’.

The Protocol also states that ‘the Authority will take the view that manufactured products such as glues, paints, pesticides, etc or granules or liquid formulations produced as a feedstock for some further manufacturing operation are not manufactured articles for the purpose of the HSNO Act regardless of how they are packaged or presented (ie they are substances). If they exceed the hazard thresholds, they will be considered to be hazardous substances within the jurisdiction of the Act’. This is a common sense interpretation as the Act is clearly intended to cover substances like paints and granulated pesticide formulations.

However, we are conscious that the interpretations above still allow scope for ‘fuzziness’ at the boundary when deciding what is a substance and what is an article. We therefore propose to adopt a more expansive and descriptive definition of what is an article. To this end, we have adopted, in a slightly modified form, the definition of an article contained in the Australian NICNAS Handbook for Notifiers (1999). This is described in the next section. This set of definitions is consistent with the current EPA Protocol definition of a manufactured article.

However, no matter how precise the boundary definition is, there will continue to be room for interpretation. Common sense should prevail in dealing with difficult boundary cases. To assist this some examples are given at the end of this statement, and these examples will be extended as more cases are brought forward.

Description of a manufactured article

An item is an article if it satisfies each of the four following criteria:

- a. The item is deliberately formed to a specific shape or design during manufacture, and;
- b. The item has an end use function wholly or partly dependent on its shape or design, and;
[A solid substance which is manufactured or imported, formed to a particular shape and which undergoes only further limited processing into a finished article, is considered to be itself an article. 'Limited processing' covers cutting, bending, surface chemical reaction, etc, but excludes processes such as pulverising, melting, pelletising, etc, where the formed shape is completely destroyed. Other items to be regarded as articles are polymer blocks, sheets, films and filaments, unless these are classified internationally as dangerous goods.]
- c. The item undergoes no change of chemical composition during end use, except as an intrinsic part of that end use, and;
- d. The item is not a particle or a fluid.

Status of fluids and particles

In accordance with the above criteria, fluids and particles are not normally considered to be articles, regardless of shape or design. 'Fluids' refers to liquids (including suspensions and solutions) and gases. 'Particles' refers to any solid chemical substance or mixture of chemical substances that is in discrete aggregations of unspecified size, which may take the form of dust, powders, dispersions, granules, pellets, beads, lumps and flakes. Substances in a form in which the bulk properties and usefulness of the substance are dependent only in part on the particle's shape are not regarded as articles.

Fluids or particles contained within a vessel serving simply to store, transport and dispense its contents are considered to be substances. In general, all fluids and particles, such as cleaners, solvents, fuels, glues, sealants, inks, paints and other coatings, are substances if they are merely contained in some form of packaging. That is, the contents of containers, such as bottles, jars, cans, aerosol cans, drums, barrels, tanks, bags, tubes and sachets are chemical substances or mixtures of chemical substances.

In the case of items where it is intended that the fluid or particulate contents remain in their container during normal use of the item, and where they serve an intrinsic part of the end purpose of the item, the fluids and particles are considered to be an integral part of the article and are not considered to be substances for the purposes of the HSNO Act. Thus, a lubricant in a bottle, drum or aerosol can is a chemical substance (or mixture of chemical substances) and will require an approval, if it is above a HSNO threshold, but a lubricant in a sealed bearing or other piece of mechanical equipment is part of an article and is outside the scope of the HSNO Act.

'Borderline' Cases

For certain items, the end use function involves release of the fluid or particulate contents in a specific manner that is dependent on the shape or design of the item. It follows that the fluid or particulate substance, or mixture of substances, contained in such items cannot fulfil the end purpose of the item in isolation from the unit as a whole. If the normal release of the fluid or particles is in a controlled and non-dispersive manner, then these fluids and particles are considered to be an integral part of an article, and are therefore not substances for the purposes of the HSNO Act. Examples of articles meeting these criteria are ballpoint pens, inked stamp pads, typewriter ribbons and carbon paper. These may be considered to be 'borderline' cases.

In practice, it will only be for imported items containing fluids and particles that a decision needs to be made whether the fluid or particles constitute a chemical substance (or a constituent of a mixture of chemical substances) and therefore needs an approval (if above the HSNO thresholds), or whether the fluid or particle is to be considered as an integral part of an article. The constituents of items that are locally manufactured will initially be present as individual chemical entities prior to packaging or assembly and therefore must have a HSNO approval, if they are above the hazardous property thresholds.

In considering 'borderline' cases, the EPA will take into account the following factors:

- The potential for intended release of the substance during the use of the article and, if there is release, whether there is a barrier preventing exposure of the user or the environment
- Whether the article has a hazardous property that exceeds a HSNO threshold level and where the primary function of the article leads to a hazardous effect.

Dangerous Goods Listed in Transport Regulations

International guidelines for the transport of 'dangerous goods', such as the United Nations Recommendations on the Transport of Dangerous Goods Model Regulations ('Orange Book') and the International Maritime Dangerous Goods Code, list certain manufactured articles that contain hazardous substances as 'dangerous goods' for the purposes of transport. These listings will not necessarily translate to inclusion in HSNO as hazardous substances, if the criteria above do not also apply.

Manufactured articles are included in the transport recommendations when they are in conditions where they manifest a hazard for transport purposes. These listings are often subject to "special provisions" which mean they only apply when the articles are of a certain type or the quantity of substance contained is above a certain quantity or in the case of air travel only. Thus, battery powered vehicles are listed as 'dangerous goods', when transported by air. HSNO is about the generic manifestation of intrinsic hazardous properties throughout the lifecycle of substances. It is not appropriate to include manufactured articles in HSNO solely because they present hazards only in specialised situations such as air transport.

These hazards will still be controlled, in any event, during transport within New Zealand, as the local transport legislation (Land Transport Rule: Dangerous Goods, Civil Aviation Rules: Part 92 and Maritime Rules: Part 24A) refer to the listings of 'dangerous goods' in the abovementioned international documents.

Some practical examples:

Some practical examples are listed below. This list will be modified and added to as further examples are brought to our attention.

Note that in the examples below, the fact that an item has been considered to be a substance does not mean that it will come under the HSNO Act. It has to then be determined to be a hazardous substance for this to happen. That is, it has to exceed at least one of the hazardous property threshold levels.

1. A bag of polymer granules is a substance. The physical form of the material is incidental and it is the physicochemical properties of the material that are important. Moulded or extruded items, for example, an electrical switch plate, a garden chair or pipe, made from this material are manufactured articles.
2. A bag of asbestos fibres is a substance. Brake linings incorporating asbestos are manufactured articles, since the item has an end use function wholly dependent on its shape and design.
3. Printer/photocopier toner in bulk form or refill containers is a substance. Toner cartridges are manufactured articles. The particulate material in the cartridge is not considered to be a substance for the purposes of the Act, since the end-use function of the cartridge involves release of the particulate contents in a controlled and non-dispersive manner that is dependent on the shape or design of the item.
4. Crayons are considered to be substances for the purposes of the HSNO Act. Although a manufactured item, they are a borderline case where there is intended release of the substance during the use of the item and where there is little or no barrier preventing exposure to the user. If they contain toxic materials, such as heavy metals, then they will likely be hazardous substances. This position continues the status quo that applies under the Toxic Substances Regulations.
5. Matches are considered to be substances for the purposes of the HSNO Act. Although a manufactured item, they have a hazardous property that exceeds a HSNO threshold level and the primary function of the article leads to a hazardous effect.
6. Batteries are considered to be manufactured articles and are not, therefore, covered by the HSNO Act. Although they may contain hazardous substances, the item has an end use function wholly dependent on its shape and design, which does not involve the intentional release of any hazardous component. Also, the primary function of the article does not lead to any (HSNO) hazardous effect. Hazards arising during transport will still be controlled, as the local transport legislation picks up the international requirements. Disposal issues will be covered by the MfE hazardous waste programme and local authority requirements.
7. Other examples of manufactured articles are: paper, leather, laminated materials, pottery, fabrics, fibres, filaments, films, pens, pencils, typewriter ribbons, carbon paper, electronic or electrical equipment, machinery.
8. Other examples of substances (in containers) are: aerosol cans of paint, bottles of ink, cartridges of sealants, tubes of adhesives, fuel refill cartridges for lighters, fire extinguishers, rub-on dispensers of cleaning products or polishes, perfume atomisers.

Further information

EPA publishes information sheets on a range of topics to provide background information on current issue or proposals being dealt with by the EPA.

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