

9 CONSUMER SECTOR

9.1 Introduction

Consumers are exposed to a wide variety of chemicals in their daily lives. Labels on consumer products play a major role in communicating potential hazards to the consumer. It is necessary to provide sufficient information to consumers in the simplest and easily understandable terms. The consumer often cannot make an informed purchasing decision, as they may not fully appreciate the hazard involved in using products because of inadequate labelling. The issue of comprehensibility is therefore of particular importance since consumers rely almost solely on labels for information about products.

This Situation Analysis addresses the consumer in both the formal and informal sectors. Organisations that work toward the protection of the consumer and environment from the chemical hazards (see **Annexure 6**) are also included.

9.2 Regulatory Framework

Existing legislation that specifically protects consumers from hazardous chemicals or that regulates chemicals intended for consumer use is limited.

The Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act (No. 36 of 1947) covers labelling of pesticides for use by consumers. However, the scope of the Act is limited. The Act focuses on the farmer and not the consumer. Labelling of chlorine for use as an algicide is covered by the Act. However, spa bath chemicals are not included as they are classified as disinfectants, even though they perform the same function. The Act ensures that inserts are included in the packaging used for pesticides and herbicides that are used by the consumer. This Act is regulated and enforced.

The Foodstuffs, Cosmetics and Disinfectants Act 54 of 1972 has not been included as it deals mainly with food and pesticide residues and cosmetics. These are not included in the scope of the GHS project.

The SABS 0265 is a voluntary requirement for classification and labelling of dangerous goods and has existed since 1999. The Department of Trade and Industry (**the dti**) requested this standard to ensure that South African companies exporting chemicals would meet the EU packaging and labelling requirements, as well as to increase the safety of the consumer. Approximately 3,500 chemicals are classified on the basis of their toxicological, physicochemical and eco-toxicological properties that may be a risk during sale, handling and use of the chemical. The data sheets are comprehensible and easy to use.²⁴⁵

The SABS Code 0232 for transporters also contains clauses for the protection of the consumer. Enforcement is improving; this is a relatively recent law that has become mandatory. Unfortunately, the section of the law that concerns the consumer is not properly enforced.

The Fire Brigade Services Act (No. 99 of 1987) makes provision for the control of the amount of hazardous chemicals being stored by retailers. The practical reality however is that it is not being enforced and there are no national standards. The fire brigade services are no longer involved in preventing accidents, but have rather become reactive to accidents.

Table 9.1 lists hazardous chemical products which consumers are regularly exposed to in their daily lives. Household chemicals do not have to be registered with any regulatory body and no common standard for labelling is required, except for pesticides and insecticides.

Certain of the household products listed in Table 9.1 are hazardous to the environment. The greatest concern is toxins that may bio-accumulate in the environment, i.e. POPs. Due to their chemical composition, they are not readily biodegradable, their concentration increases exponentially the higher one moves up in the food chain. Consumers at the top the chain are at highest risk by the accumulated pollutant. One persistent organic pollutant pesticide that remains available for use in South Africa is DDT. In 1996 South Africa stopped using DDT. However the *Anopheles* mosquito

²⁴⁵ www.ecochem.co.za

(which carries malaria), built up resistance to the other pesticides being used, e.g. the Pyrethroids and Carbomates. The WHO recommended that DDT was an adequate pesticide, which can be used in the control of Anopheles because of the large number of people dying from malaria in South Africa. As a result, South Africa is using DDT again, but under strict regulations. The regulations are as follows: only the DOH may spray DDT for malaria vector control. DDT may only be sprayed indoors on rough surface walls as in mud walls and unpainted surfaces.²⁴⁶ It is assumed that the agricultural market does not use DDT. PCBs are present in transformer oils, but are being phased out. Dieldrin has been banned in South Africa since 1981.

Safe disposal of toxic household chemicals is an issue of major concern. There is no prescribed manner in which to dispose of hazardous household chemicals, and there are no dedicated landfill sites for the disposal of hazardous household waste. The 'Recovery of Oil Saves the Environment' (ROSE) is an organisation involved in the recycling of motor oil. Hazardous household chemicals cannot be poured into septic tanks, as they interfere with the biological processes that breakdown and stabilize the organic matter. Generally hazardous household chemicals are disposed of to landfill sites where the risk of leaching into groundwater and the surrounding environment may be high.

Table 9.1: Hazardous Household Products and General-Purpose Chemicals Used by Consumers

Kitchen	General household	Garage	Garden
All purpose cleaners	Air fresheners	Rodenticide	Pesticides
Bleach	Carpet cleaner	Thinners	Pool Acid
Paraffin	Disinfectant	Ethanol	Pool chlorine
Oven cleaner	Turpentine	Paint	Herbicides
Ammonia based cleaners	Insecticides	Paint removers	Fertilisers
Brass or metal polishes	Toilet cleaners	Petroleum distillates	Fungicides
Disinfectants	Laundry softener	Cleaning solvents	Insecticides
Drain cleaners	Laundry detergent	Lubricating/motor oils	
Floor polish	Mothballs	Putty	
Glass cleaner	Stain remover		
Dishwashing detergents	Dry cleaning solvents		
Scouring powder			
Insecticides			
Petroleum hydrocarbons			

²⁴⁶ Personal communication – Dr Gerhard Verdoorn from Endangered Wildlife Trust, Poison Working Group

Some of the active ingredients that are found in household products and general purpose chemicals with their known side effects are listed below.

Table 9.2: Active Ingredients in Commonly Used Household Products

Household Product	Active Ingredient	Side Effect
Disinfectants	Hypochlorite	Chemical acne
Preservative in many products, air fresheners	Formaldehyde or methylene oxide or formalin, methanal or methyl aldehyde or oxymethylene	Suspected cancer-causing ingredient. Central nervous system depressant
The strong odour in air fresheners	Paradichlorobenzene	Liver and nerve damage
Moth balls and air fresheners	Naphthalene	Central nervous system depressant
Dishwashing liquid	Naphtha or petroleum distillates	Central nervous system depressant
	Diethanolamine	Possible liver poison
	Chlorophenylphenol	Toxic metabolic stimulant
Window cleaner	Butyl cellosolve	Neurotoxic
Chlorine bleach, disinfectants	Sodium hypochlorite	Respiratory problems
All-purpose cleaners, glass-cleaners	Ammonia	Eye irritant, lung irritation and skin burns
Disinfectants	Phenol and cresol	Corrosive
Wood putty	Toluene	Highly toxic. Central nervous system damage. Reproductive system damage.
Motor oils	Petroleum hydrocarbons	Skin and lung cancer
Cleaning solvents	Benzene	Skin and lung cancer
Many detergents	Phosphates	Creates imbalances in natural ecosystems
Lead pencils, ink, old paint	Lead	Damages kidneys and reproductive system. The central nervous system is very sensitive to it
Paraffin	Hydrocarbons	Poisoning; carcinogenic from fume inhalation
Controlling ants, termites, bees, cockroaches, flies, rats, worms	Organophosphates	CNS depressant
	Naphthalene	Suspected human carcinogen
	Lindane	Acute symptoms of apprehension, irritability, dizziness and disturbed equilibrium
Flea powder	Carbamate	Very toxic, interferes with human nervous system
	Dichlorophene	Skin irritation, may damage liver, kidney, spleen and nervous system

Household Product	Active Ingredient	Side Effect
Lawn and garden maintenance	Benomyl	Can affect the brain and nerve development in children. Can block or mimic natural hormones and can harm household pets.
	Captan	
	Dicofol	
	Methoxychlor	
Insecticide sprays	Propoxur	Depressed cholinesterase levels, headaches, vomiting and nausea
	Cyfluthrin	Causes lack of coordination, deep lung allergy, convulsions, pneumonia, asthma
	Petroleum distillates	Temporary eye clouding, damage to nervous system. Poisonous.
	Imiprothrin	Negative results in carcinogenicity and mutagenicity, but is still toxic
	Cypermethrin	Interferes with receptors in nervous system. Abnormal facial sensations, dizziness, headaches, nausea.

The consumer is exposed to hazardous chemicals at the point of purchase, during transportation, and in the home. Exposure routes to hazardous chemicals for the consumer are similar for all of these situations. The accidental exposure routes include the following:

- *inhalation* of gaseous active ingredients;
- *skin contact* with products containing the active ingredients;
- *ingestion* through accidental drinking or eating of a product; and
- *fire* as a result of a hazardous chemical.

9.3 Hazard Communication Tools

In general, the tool used for communicating the risk associated with hazardous household chemicals to the consumer is generally written information supplied on the labels or package inserts with the product. Some organisations make use of posters and pamphlets to communicate the hazards of their particular chemical. Special safety lids are also distributed for some of the decanted hazardous chemicals; however the vast quantities being decanted make effective distribution of these lids very difficult. Drama is being used as an effective mechanism to communicate the hazards associated with decanted chemicals.

9.3.1 Comprehensibility

The consumer market is diverse and large. Hazardous chemicals are used by a wide variety of consumers. The comprehensibility of the label differs depending on which market is being targeted. One concern is that the print size of the information is often very small and does not attract the attention of the consumer. Understanding the label means that the consumer knows almost instantly what the label is telling him/her. In general, the information supplied on product labels is considered sufficient for a literate consumer to recognise the danger associated with the chemical. However, the actual ingredients and their side effects are not included on most labels. The illiterate consumer is considered to be greatest at risk, as they in general do not understand the danger icons or the written information.

Sometimes the label on a hazardous chemical may look similar to another hazardous chemical label. This can lead to complications and further hazards if the label is read in haste. There is a concern about the small-scale farmer that may possibly be illiterate and the side effects this could have of his/her farm and associated effects.

Some imported hazardous chemicals have labels and inserts printed in the language and script from the country of origin, and hence may be incomprehensible. There is no means for the consumer to ascertain what the active ingredients are or what the side effects could be. Examples include the “cockroach chalk” purchased at informal retailers and drums of hazardous waste left lying in open land where the public can be exposed. The Department of Agriculture is aware of the “cockroach chalk” situation and confiscate any illegal pesticide sold at informal retailers.

The labelling used on vehicles that transport hazardous chemicals is not clearly understood by the general consumer. If a road accident involving a hazardous chemical spill occurs in a community, the average consumer does not know what to do. This is due to a lack of communication between the local authorities and the community. Hazardous chemicals can remain on the side of the road after an accident for days without any labelling or information for the general public that could come into contact with it.²⁴⁷ The drivers of vehicles transporting hazardous chemical may not understand or be aware of the hazards of the chemicals being transported. The problem may also be due to sub-contractors transporting the substances and who are not aware of the risks associated with the transportation of these products.

9.3.2 Formal and Informal Retail Sector

The formal sector includes retailers and consumers at shopping centres and controlled shopping environments. In general this sector is literate and is therefore able to understand the information if the time is taken to read it, once they have located the necessary text on the label. The standard icons used to represent certain side effects are also generally understood. Familiarity with these icons is due to previous exposure to and education about the icons. The informal sector includes the consumer who buys products from the small corner shop (“spazas”) and roadside hawkers where the shopping environment is mostly uncontrolled. In general this sector is illiterate and often does not understand the language that most labels are printed in, mostly English. Any information they may possess about the hazard of chemical substances is often passed on by word of mouth and through experience. Health clinics play an important role in disseminating information particularly during an exposure incident.

9.3.3 Access to Information

The amount of information supplied regarding the active ingredient is not always sufficient – either the product’s ingredients change from time to time or the manufacturer wishes to keep the active ingredient confidential. The medical profession needs to have sufficient information on the label that can inform them of the class of active ingredient, in order for them to react effectively in an exposure or poisoning situation. The Poison Information Centre is willing to help organisations know what to put on their labels to ensure that the correct and appropriate information is used.

Manufacturers are not legally required to register household products with a regulatory body, along with all the active ingredients and necessary warning information. It is, however, a legal requirement for the agricultural and industrial chemicals to be registered. The medical fraternity have found that active ingredients that should be listed on the labels are sometimes omitted, as product formulation changes and trade secrets do not want to be given to competing organisations. GHS does protect the confidential business information along with the consumer and environment.

A problem with package inserts exists that they may be misplaced after the product is opened. When the product needs to be used at a later stage the information is lost. Sometimes when the chemical is used subsequently a different person may be using it. No information is then available for this person to be adequately informed.

Often the side effects are not printed on the labels. The consumer therefore remains ignorant of what the hazardous household chemical could actually be doing to them and their family.

The medical profession felt that the labels were sufficient for literate persons. For the medical profession the labels are suitably understood, however the problem lies with the quality of the information. More information is required on the active ingredients and its side effects.

²⁴⁷ Personal Communication – Linda Ambler from GroundWork

In the informal sector it should be noted that there are imported products that have labels but they are printed in a foreign language and script. An example would be the “cockroach chalk”. Legislation is in place to control the import of hazardous chemicals (Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act No. 36 of 1947). However, there is an importer of this chalk that does not comply with this regulation. These products are cheap and seem to be easily available to consumers that have the correct password to enable them to buy the product. Consumers use them because they are effective and cheap but they could be lethal to users and their environment, as the labelling is not understood. There is a registered form of the chalk that is sold by formal retailers with the correct labelling. The chalk contains a very small amount of Deltamethrin that will not poison a consumer²⁴⁸. The reason behind the illegal importation of the chalk is unknown.

Whilst conducting the interviews in Diepsloot, the retailers were asked whether they stock rodenticide and a chalk used against insects. The common answer was that they were out of stock. Apparently a password is required to be able to buy these goods over the counter, the retailers are aware of the dangers of stocking them as their stock may have been confiscated by the NDA previously. Persons wishing to commit suicide are known to use the rodenticide. This pesticide is a black sugar-like substance that is sold in small, decanted quantities with no label. It is lethal and is applied by consumers for purposes other than what it is intended for; it is legally used for the control of nematodes on corn. The illegal market sells it as a rodenticide but also as a means of poisoning other people and for committing suicide. The NDA is currently attempting to control the use of this substance.²⁴⁹

When a supplier delivers chemicals like paraffin to the informal sector, there is no communication or information on the barrels or drums warning of the associated hazard. Mention was made of verbal communication of the hazards of the chemical the first time the chemical was delivered. A further problem exists when these chemicals are decanted into beverage containers and no information is supplied on the hazards associated with the product. Furthermore, no verbal communication is made to convey the hazard associated with the product to the consumer when purchasing the chemical.

Pamphlets and posters on the hazards associated with common household chemicals are placed on the walls of some clinics and made available for the patients to read whilst they wait for treatment. Other clinics contacted, commented that they did display these posters in the past but are not displaying posters and pamphlets since stocks have run out. The use of safety lids is promoted, but again stocks have run out and have not been replaced. Volunteer health workers at some of the clinics promote and at times present information to the patients, which includes the safe use of hazardous chemicals.

Drums used for containing and storage of hazardous chemicals are sold to rural communities as containers for storing water, without being adequately cleaned. These malpractices should be contained by law enforcement, but often law enforcement is inadequate. The problem could be due to out-sourcing of the disposal of the drums. However, the contractor should have the same standards as the organisation that it is working for and must also abide to the relevant laws. The manufacturer has a duty to ensure that drums that contained hazardous chemicals should be removed from the system and not sold to rural communities.

9.4 Training and Awareness

9.4.1 Consumer Groups

South Africa has between 50 and 60 Consumer Forums; eight of these were contacted in the Gauteng region. They are all involved in awareness campaigns of some form or other; however, there are serious financial and human resource constraints that limit effective training and awareness raising. Consequently, the number and variety of awareness campaigns on hazardous household chemicals for consumers is limited. There are concerns about the target audiences, particularly whether rural communities are being reached by the limited awareness raising campaigns.

Stakeholders expressed a range of opinions about who should finance consumer awareness programmes. Most felt that the chemical manufacturer and retailer should be responsible for funding

²⁴⁸ Personal Communication – Marelise Crause from Department of Agriculture

²⁴⁹ Personal communication – Marelise Crause from department of Agriculture

awareness campaigns. Others, suggested that the problem is too large for any one stakeholder group and that cooperation between all parties in the life cycle of a product should be responsible i.e. government, manufacturers, retailers and consumers. The product is often produced based on consumer demands.

Work is currently being undertaken by a number of consumer protection groups to ensure a safe shopping environment. The retailer should primarily be responsible for this task. The Gauteng Consumer Affairs Office and CAUSE are in the process of constituting a committee to encourage appropriate labelling of hazardous chemicals in stores; to ensure that hazardous chemicals are stored in safe places; and to inform the consumer of the risks associated with hazardous chemicals.

Currently under the OHS Act a percentage of employees have to be trained in first aid. If there is an accident or emergency in a store, the consumer often does not know what the appropriate response should be. This legislation needs to be enforced and the consumer needs to be made aware.

With regards to communication of hazard risk to consumers, the dti is currently mainly reactive instead of proactive to consumer issues.

9.4.2 Industry Associations

The industry associations are generally better resourced than the consumer organisations since they are funded by the industries they represent. For example, all organisations that distribute paraffin pay a percentage of sales to PSASA. This association is well known for its work in awareness campaigns throughout South Africa.

The awareness training is in the form of community-based education and training programmes that are carried out at schools, clinics, churches and religious institutions and development structures. Workshops at these places expose the people to the dangers of paraffin and how to prevent accidents. The principle focus of awareness includes ingestion, fire and inhalation of fumes.

An intervention method includes the introduction of child resistant containers. By the end of 2002 PSASA had conducted 280 workshops and 2,000 people attended the education workshops throughout South Africa. To prevent the accidental ingestion of paraffin by children a designated bottle with warning labels, a different shape and a child resistant cap is used. PSASA arranges safe sites where paraffin is delivered in bulk and is decanted into 5 litre containers and is subsequently sold with labels and instructions on how to remove the 'child-resistant' top. Currently there are two functional sites and three more are being developed. Intervention involves education, child-resistant containers and public awareness. However, the child resistant containers are not effective in isolation of the education.

Public awareness raising mechanisms used include: billboards, taxi-based adverts, community-based theatre, radio, newspaper, magazines and a promotional vehicle.

9.4.3 Organised Labour Groups

The Domestic Workers Union does not have ready access to information to inform their members of the hazardous household chemicals.

It is assumed that domestic workers understand labels on chemical containers. However, some workers ignore the labels and do not follow the safe-use instructions. Awareness campaigns are considered necessary to convey the meanings of the information and instructions on the labels to domestic workers. The DOL has undertaken to arrange workshops for the Union in 2003 to inform the domestic workers about hazardous household chemicals. For these workshops to be effective it will be essential that the employers of the domestic workers also attend. An area of concern is the lack of co-operation between the Domestic Workers Union and the Domestic Employers Union. Co-operation between these entities would promote effective information sharing.

9.4.4 Poison Information Centres

There are at least five different poison information centres in South Africa that can be contacted in the event of exposure to and poisoning by hazardous household chemicals (Table 9.3). Their services are primarily utilised by medical personnel as the public generally works through the health services sector. On average about 20% of the calls requesting information or reporting exposure incidents are directly from the public. These centres are generally poorly financed hence they are understaffed and

cannot get involved in public awareness programmes. The Tygerberg Hospital Poison Information Centre deals with approximately 5,000 cases annually.

The Red Cross Children's Hospital is compiling a database of hazardous household chemicals and their relevant active ingredient(s). Currently, no database covering all household chemicals exists since this is not a legal requirement. Nonetheless, health service providers are developing and updating databases as a service to the medical profession and the public. The compilation and updating of a database is a costly task, since all suppliers of household chemicals have to be contacted and new products are developed on an on-going basis.

The Tygerberg Hospital Poison Information Centre utilises a programme developed in America that provides information on relevant responses to domestic hazardous chemical emergencies. Although the trade names of the chemical products in America often differ from those in South Africa, active ingredients are often the same. Poisoning symptoms and treatment are categorised according to the active ingredient. The programme is updated (in America) every three months, at an annual cost of R80 000.

The Poison Information Centres also assist consumer organisations in the development of resources for public awareness and training.

About 80% of the poisoning cases are deliberate poisonings by adults attempting suicide. Accidental poisoning is only 15% of the total number of poisoning by both adults and children. Accidental poisoning of children is mostly for children under the age of 5. Work in this area not related to child poisoning is poorly funded. Data held by the poison centre does not include consumers that have other medical problems, such as cancer or neurological disorders, as a result of ingesting small quantities of poison over a prolonged period of time.

The health clinics in the townships are generally not aware of the Poison Information Centres and the service that they offer. Emergency response teams are usually called in when new cases of poisoning occur that the local clinics have not encountered previously. Local clinics are equipped to handle paraffin poisonings. Rodenticide poisonings are less frequent.

Government has attempted to address the problem of poisoning through its Interdepartmental Advisory Committee for the Protection of Man against Poisons (INDAC). This committee advises the Registrar (Act 36 of 1947) on the advisability or not of registration of any new pesticide and also makes recommendations on the future use or de-registration of pesticides.

Table 9.3 South Africa Poison Centres

Poison Information Centre	Province
Tygerberg Poison Information Centre	Western Cape
Red Cross Children's Hospital	Western Cape
Durban Poison Information Centre	KwaZulu-Natal
Garden City Poison Information Centre	Gauteng
Bloemfontein Poison Information Centre	Free State

9.5 Issues to be Addressed in Gap Analysis

Table 9.4: Consumer Issues to be Addressed in the Gap Analysis

Issue	Description
HAZARD CLASSIFICATION	
Classification of chemicals	Hazard classification is important for the consumer. However, the consumer is generally unaware of the different hazard classes for chemicals. The process of classification of chemicals takes place at the beginning of the life cycle of the product and is therefore regarded by manufacturers and the GHS as not directly relevant to consumers.
HAZARD COMMUNICATION	
Inadequate label information	Information about the active and toxic ingredients is not sufficiently detailed for effective use by health services which treat cases of contamination or overdose, or for consumers who need to make informed decisions about the use of the product.
Lack of labelling of decanted chemicals	Paraffin, for example, is decanted and sold to consumers in beverage containers.
Lack of accessible information on hazardous household chemicals	There is no accessible central repository of information on hazardous household chemicals
Lack of guidance on proper storage in retail stores and in the home	Hazardous chemicals are stored separately and in places dispersed through out the store and warnings to consumers are not adequate.
Lack of communication to public situated on or near transport routes	The National Road Traffic Act states that local authorities are to be informed of hazardous chemicals being transported through their area of responsibility. However the no procedure is stipulated for informing the general public.
Imported hazardous chemicals	The labelling can be in a foreign language not understood by South Africans.
Label comprehensibility	Labels are not appropriate for all levels of literacy and the language used is sometimes a barrier to comprehension.
Format of label	Print is considered too small and does not draw sufficient attention to the hazard.
No special provisions for illiterate or educationally disadvantaged consumers	Neither pictograms nor hazard statements are sufficiently understood by such consumers.

Issue	Description
Nature of information provided to consumers	Information provided to consumers by suppliers of hazardous chemical is at times misleading, possibly for commercial reasons.
TRAINING AND AWARENESS	
Capacity building and awareness	Capacity building and training for health workers and consumers is inadequate.
Lack of consumer awareness	Consumers are generally not informed of the dangers of most hazardous chemicals and are not aware of the legislation that protects them.
Responsibility for training	The manufacturers, government, unions, retailers and the consumers are all responsible for training and awareness raising.
IMPLEMENTATION ISSUES	
Multiplicity of reporting bodies	Consumers do not have a single reporting body to which they can report hazardous chemical exposures.
Support for poison centres	South Africa has only a limited number of poison centres, most of which are not adequately funded.
Awareness raising and organisations for disposal of household chemical waste	Few organisations or sites exist where hazardous household chemicals can be disposed of. In general, such household hazardous waste is disposed to general landfill sites where it contaminates the landfill and potentially the groundwater.
Improved legislation to protect the consumer	Currently the only legislation that protects the consumer are the Acts that regulate the use of agricultural toxins (Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act No. 36 of 1947) and disinfectants (Food Stuffs, Cosmetics and Disinfectants Act, Act 54 of 1972).
Consumer participation in commenting on new legislation	Consumer organisation involvement in the drafting of new legislation is limited.
Regulatory institution	Currently there is no regulatory institution with a consumer focus (e.g. like the Environmental Protection Agency (EPA)) to enforce all regulations protecting the environment and the consumer.
Registration body	There is no single organisation for the registration of household chemicals.