CONSUMER SURVEY ON THE LABELLING AND PACKAGING OF HAZARDOUS CHEMICAL PRODUCTS

- EXECUTIVE SUMMARY -

Gallup Canada, Inc.

MARKETING AND OPINION RESEARCH

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June 1989

Submitted to:

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(This document is also available in French)

(The interpretative discussion in this report represents the views of Gallup Canada, Inc. and not necessarily those of Consumer and Corporate Affairs Canada)

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I. EXECUTIVE SUMMARY

A. BACKGROUND AND OBJECTIVES OF THE STUDY

In Canada, the Hazardous Substances Regulations, now known as the Consumer Chemicals and Containers Regulations, were issued under the Hazardous Products Act in 1970. These regulations identified a number of hazardous substances and prescribed precautionary labelling for products containing these substances. Since that time, more substances have been added and child-resistant packaging has been mandated for some of the regulated products.

More recently, a review of regulations governing hazardous consumer chemical products was initiated. This included a review of the current system of symbols and precautionary information, as well as the requirements for child-resistant packaging. A number of specific concerns have been raised in the context of this review.

In view of these concerns, the current study was undertaken to assist in the overall assessment and improvement of precautionary labelling and packaging for hazardous consumer chemical products. As a preliminary step, a set of alternative symbols and labels were developed for the study. Then, building on previous studies of the awareness and identification of hazard symbols (Canadian Inter-Mark Limited, 1972; Contemporary Research Centre, 1977) and public opinion research into child-resistant closures (Applied Consumer and Clinical Evaluations, Inc., 1986), a national consumer survey was conducted, addressing each of the following areas:

- awareness and identification of hazard and degree of hazard symbols;
- the salience of hazard symbols in purchasing hazardous products;
- the impact of hazard symbols, degree of hazard frames, and warning words on product use;

- the effectiveness of current versus alternative label designs;
- the use and effectiveness of written precautionary information; and
- awareness, difficulties using and perceived effectiveness of child-resistant packaging.

B. OVERVIEW OF METHODOLOGY

An overview of the survey methodology is provided below. More detailed technical information is provided in a companion report, along with detailed statistical tables of survey results (see Volume II: Detailed Statistical Tables).

The development of alternative symbols and labels was carried out by McKim Advertising and was based on a review of existing label designs as well as international symbols. The complete set of alternatives developed is displayed in Appendix I of Volume I: Detailed Findings.

Development of the questionnaire was enhanced by an internal review of past studies conducted on similar topics, direction from the client team at the Product Safety Branch of Consumer and Corporate Affairs Canada, and a thorough review from Statistics Canada officials and the Office of the Coordinator for Public Opinion Research. The instrument was also pretested under field conditions before final revisions were made. The final instrument, in both English and French, along with the special visual exhibits developed for use with respondents are presented in Appendix I of Volume I.

The fieldwork was conducted via Gallup's national Omnibus which involved door-to-door personal interviews. This format allowed for the presentation of visual aids to respondents, depicting current and alternative labelling designs. The interviews were

carried out across Canada between April 5 to 8, 1989 yielding a total of 1,050 completed interviews.

All questionnaire data were edited, coded, verified, data entered and cleaned, providing a quality controlled database of results. Aggregate survey results are accurate to within plus or minus 3 percentage points, 19 times out of 20. Disaggregated results are somewhat less accurate than this.

It should be borne in mind that the survey findings represent information of a subjective nature. Awareness levels, evaluations of label designs and behaviour related to the handling of hazardous consumer products are all based on self-reports, as gathered by the survey. To some extent, therefore, factors of memory and the social desirability of responses will influence the accuracy of results, as is the case for all survey-based studies.

C. SUMMARY AND CONCLUSIONS

1. Awareness of Hazard Symbols

Awareness of the hazard symbols for poison and flammable products is quite high at 90% and 86% respectively, and seems to have reached a saturation point across the Canadian population in general. Awareness of the explosive and corrosive symbols has improved considerably over the last decade but remains at a relatively low level (60%).

The flammable symbol is the most universally understood symbol (91% identification), followed by poison (77%). Again, explosive and corrosive symbols are the least understood (67% and 51%, respectively), although significantly more

Canadians correctly identify the meaning of these symbols today than was the case in 1977.

The lowest levels of awareness and understanding of the current hazard symbols were generally found among elderly Canadians, those with less formal education and those whose first language is neither French nor English.

2. Awareness of Degree of Hazard Frames

Compared to the hazard symbols, the degree of hazard symbols or frames are much less understood by the Canadian public. Almost half (45%) of respondents said that they did not know why the current frames were used. Only 39% realized that they were meant to indicate the degree of hazard involved. Similarly, only 25% - 35% of Canadians had accurate perceptions of the degree of hazard represented by each individual frame. Many respondents associated the frames with traffic signals, specifically their implied "stop" and "yield" message.

3. Salience of Hazard Symbols in Purchasing Hazardous Products

When purchasing hazardous chemical products, a majority (74%) of Canadians notice the warning labels. The hazard symbol itself was the most likely component of warning labels to attract the attention of consumers. Overall, 80% of respondents recalled having purchased a product with the poison symbol on it. Fewer (66%) recalled purchasing a product labelled as flammable. Substantially fewer consumers reported having purchased a corrosive labelled product (42%) or an explosive labelled product (39%).

4. Impact of Labelling on Use of Hazardous Products

The general lack of understanding reported above regarding degree of hazard symbols was reflected in the finding that most respondents (68%) would handle products with different degree of hazard symbols in the same way. Only 22% said that they would handle these products differently. Among the latter, only 30% said that they would handle products with the danger symbol with the most care.

Similarly, most consumers (60%) also reported that the use of different warning words (DANGER, WARNING, CAUTION) would not affect their handling of products. Only 36% stated that they would handle products with different warning words differently. The majority of these (64%) specified that those labelled "DANGER" would generate their most careful behaviour.

Hazard symbols appear to have more impact on how consumers store hazardous products than on their general handling or disposal of such products. Approximately 75% - 85% of respondents tended to take special care in the storage of labelled hazardous products, compared to 60% - 65% who took special measures in their handling or disposal. A variety of special measures were identified by respondents for the storage and handling of hazardous products. The most typical response for poisonous products was to store them away from the reach of children. For flammable and explosive products, almost half of the respondents recognized that they should keep them away from heat. Only 14% of respondents specifically mentioned that they would wear gloves as protection from corrosive products.

5. Comparison of Current and Alternative Label Designs

In assessing current and alternative labelling designs, a number of important findings emerged. With respect to hazard symbols, the clearest results emerged for explosive symbols. A strong majority (77%) thought that the alternative symbol was the most effective. Given the relatively low degree of awareness and understanding of the current explosive symbol, this finding suggests a need to improve upon the current design.

A majority of respondents (66%) also selected the poison symbol alternative as the most effective, again indicating a potential to improve the current symbol. Both symbols involved a skull and crossbone design, however, which appears to generate high recognition levels and a relatively high degree of understanding.

Respondents were fairly evenly divided over the most effective flammable symbol. Given that 91% of Canadians can correctly identify the current symbol, there may be little need to improve this symbol.

With respect to the corrosive symbol, a small majority (59%) favoured the current symbol over the alternative. Given the relatively low recognition and understanding of this symbol, however, it may be important to assess other alternatives.

Despite a general lack of understanding with regard to degree of hazard frames, the current frames were largely seen as more effective than the alternative frame or no frame at all (i.e., by 67% of respondents). Based on these findings, it may be concluded that more commonly used symbols like the stop sign are perhaps the most effective, although there may not be a need to vary these frames by degree of hazard. This interpretation is supported by the finding that most respondents

(57%) advocated the use of one common warning word, regardless of the degree of hazard involved.

The preferred overall label design involved a vertical layout of warning components with a warning word on top, a prominent framed symbol in the middle and the written message at the bottom.

6. Use of Precautionary and First Aid Information

A majority of consumers tend to read the written precautionary information on product labels and the first aid information provided (77% and 78% respectively). However, only approximately 50% overall indicated that they read these messages often. Consumers are more likely to read the manufacturer's instructions (85%), with 64% reading these instructions often.

Both the precautionary and the first aid information are widely viewed as useful (94% - 95%). A smaller majority of respondents (75% - 76%) felt that this information was easy to understand and that the print was easy to read (70% - 72%).

A majority of respondents (68%) also felt that it was important to include both information on first aid treatment or antidotes and an emergency telephone number for a poison control centre. 19% felt that treatment information was sufficient and 10% felt that a telephone number was sufficient.

7. Awareness and Perceived Effectiveness of Child-Resistant Packaging

Canadians overall showed high awareness levels (94%) for child resistant packaging and showed high consensus (86%) with regard to its effectiveness. Over

half (55%), however, found it difficult to open and close the containers themselves. This was especially a problem for senior citizens and housewives. However, only 8% actually left the tops off hazardous products or emptied their contents into a non-child-resistant container to overcome these difficulties. Incidence of these activities was higher among seniors, however (23%). Overall, 97% of Canadians support mandatory child-resistant packaging for hazardous household chemical products.

D. RECOMMENDATIONS

- Efforts to improve the understanding of hazard symbols should focus on the explosive and corrosive symbols, which are the least recognized and understood.

- Awareness-building should be targetted particularly toward senior citizens, the less educated and those whose first language is neither English nor French.

- The use of degree of hazard distinctions via hazard frames and warning words should be reconsidered. Overall, the concept of degree of hazard is not well understood and distinctive symbols do not have an effective impact on the use of hazardous products. While frames and warning words appear to be important components of warning labels, findings suggest that the use of one common frame or word, regardless of degree of hazard, may be a more effective approach. The common frame or word could be selected from among those currently in use.

- Hazard symbols should continue to have prominence on warning labels as they seem to play an important role in attracting consumer attention. A vertical label layout is recommended with a warning word on top, followed by a framed symbol beneath it, and a warning message below.

- Continued investigation into symbol alternatives is recommended, especially with respect to explosive and corrosive symbols.

- It may be important to draw clearer links between each type of hazard and corresponding precautions for storage and handling. More prominence, clarity and simplification of written precautionary messages may be required in this regard. Although current information is almost universally seen as useful, there is clearly room for improvement with respect to encouraging users to read the information more often and for making messages easier to read and easier to understand. Most consumers also advocate the inclusion of an emergency telephone number, as well as antidotes for first aid treatment.

- A large proportion of adults experience difficulties with child-resistant packaging. However, given the overwhelming support for this type of packaging and the relatively low incidence of transferring hazardous products to non-child-resistant containers, these difficulties are perhaps best addressed through improved designs of closures themselves.