Mode of Action Labelling:

CLI – RRAC Guide for Rodenticides

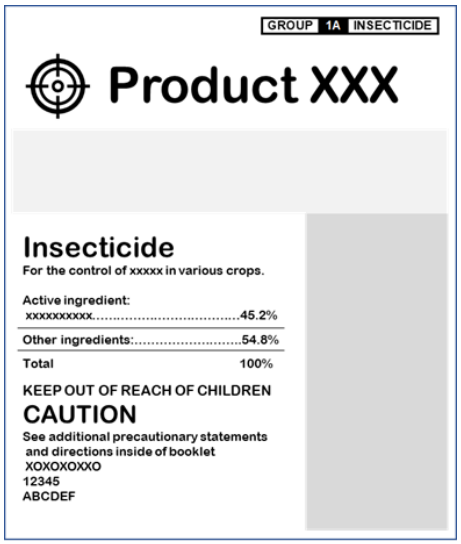
CropLife International Standard Recommendation

MoA Labelling Guidance

The MoA labelling provides a clear and simple method to inform pesticide retailers and users of the type of pesticide and its mode of action group. The MoA groups can be used to identify products with the same mode of action; these should not be used repetitively. It is recommended that pesticides be used as part of an integrated pest management strategy in order to maximize pest control and sustainably manage pesticide effectiveness.

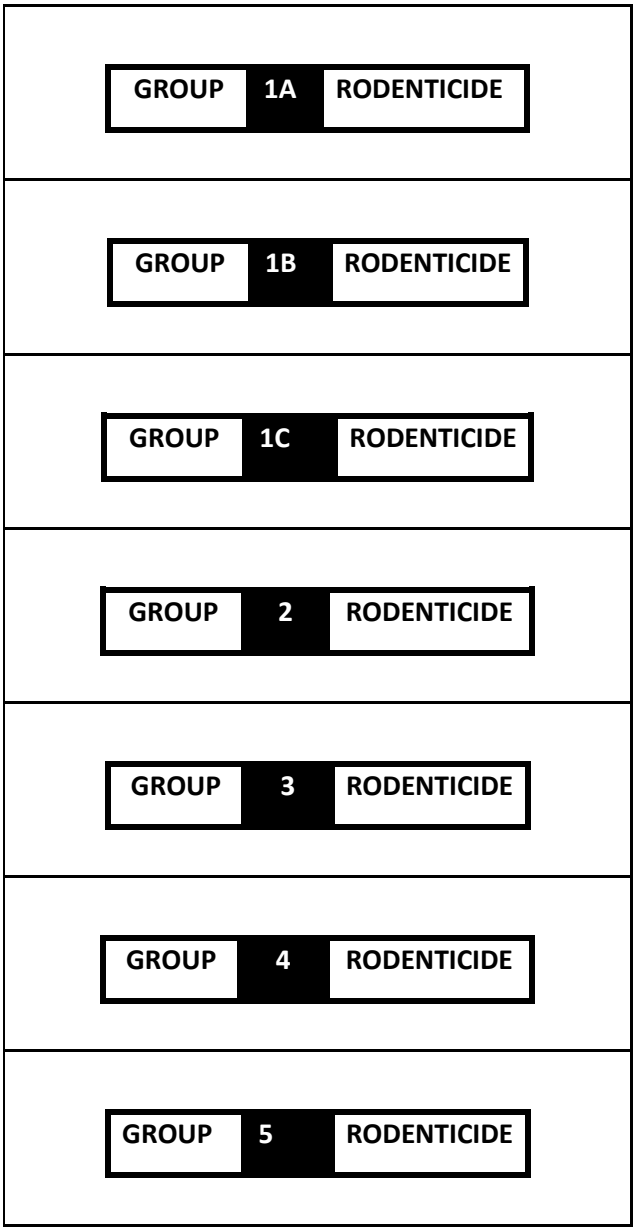
Labelling Specifics

It is recommended that the MoA icon be displayed in a prominent position on the label. A position at the top right of the front panel of the label is strongly recommended (see diagram). A clearly defined font should be used, e.g. Arial or Calibri for users of Latin script. A black and white colour scheme is recommended.



The icon uses the word GROUP in capital letters in black font on a white background; the mode of action letter or numeral should be in white font on a black background; the word HERBICIDE (or FUNGICIDE or INSECTICIDE or NEMATICIDE) in capital letters in black font on a white background. Both lines, and the whole indicator, are contained within black rectangles. See examples below.

CropLife International RRAC: Rodenticide MoA Labels by groups:



<u>Table 1:</u> RRAC Mode of Action (MoA) of Rodenticides: RRAC grouping of active compounds, and recommendations for MoA labels and uses accordingly.

Group			Sub-Group	Compounds	Characteristic: Base of label instructions
1	Anticoagulants	**A**	FGAR	Chlorophacinone, Diphacinone, Warfarin, Coumatetralyl	Not to be used against anticoagulant-resistant strains of rats and mice. Due to lower tendency to accumulate in rodents and non-targets compared to SGARs, recommended for control of rodents where there is no resistance suspected.
1		**B**	SGAR	Bromadiolone, Difenacoum	Recommended to control anticoagulant-susceptible rodents, and certain resistant strains with low resistance levels.
1		**C**	SGAR	Brodifacoum, Difethialone, Flocoumafen	Most potent anticoagulants, recommended for resistance management: Control of all anticoagulant-susceptible and -resistant strains, and for rotation of MoA within IPM.
2	Calciferols			Ergocalciferol, Cholecalciferol	Recommended against all strains of rodents.
3	Narcotics			Alphachloralose	Recommended for control of all strains of house mice.
4	Gases/Fumigants			Carbon dioxide, Aluminium phosphide, Carbide, Hydrogen cyanide	Specific applications by trained professionals only. Effective against all rodents.
5	Acute Toxins			Zinc phosphide, Bromethalin, 1080 (sodium fluoroacetate)	Effective against all rodents. Quick acting, very hazardous compounds.

Table 2: RRAC recommendations for use of rodenticide groups in resistance management, and restrictions of use.

Note: The product recommendations are based on general instructions and restrictions stated on the actual product label. All products must be used according to their label in the respective country.

Group	RRAC: global recommendation
1 A	For use against all strains of rats and mice, when there is no proof of, or suspected anticoagulant-resistance.
1 B	For use against all strains of rats and mice, when there is no proof or suspected anticoagulant-resistance.
1 C	For use against strains of rats and mice, when there is proof or suspected anticoagulant-resistance. Recommended for MoA-rotation within IPM programs.
2	Recommended against all strains of rats and mice. Recommended for MoA-rotation within IPM programs.
3	Recommended for control of all strains of the house mouse.
4	Effective against all rodents. Specific applications by trained professionals only.
5	For all strains of rodents. Can be used in MoA-rotation within IPM programs, considering acute and high toxicity of these products.