



HERBICIDE FORMULATIONS AND TOXICITIES

You should consider the potential health problems of a herbicide when you are choosing products. As you look through Table 1, you will see that products differ in their toxicity, and even various formulations of one active ingredient may differ in their oral or dermal toxicity or their irritability to the skin or eyes. The data correspond with the specific formulation listed under the trade name; for example, information for the two AAtrex products is given under AAtrex across from 4L and Nine-O. In a few instances, no information is available for the specific formulation. In these cases, data have been included for the active ingredient; this information has been listed across from the common name rather than the formulation.

The toxicity information given here is for acute (one-time) exposure. Acute exposure is what you would receive during one application or one day's work with a product. You should not extrapolate your risk of chronic disease (exposure over a lifetime or many years) from acute-toxicity data.

The label signal word (DANGER, Warning, or Caution) gives you a general idea of the hazard of the product. The signal word is always triggered by the category that most seriously threatens your health. For example, a chemical with a low oral and dermal toxicity, which would have "Caution" on the label, would instead have the signal word "DANGER" if it is corrosive to the eyes. In fact, several herbicides with low oral toxicity can be hazardous because of their risk to skin or eyes. The label signal word of "Warning" or "DANGER" is a clue to look closely at the precautionary statements on the label. For more information on toxicity and how toxicity tests are conducted, see Chapter 16, "Toxicity of Herbicides."

Material safety data sheets (MSDS), which are available from the product manufacturer or your pesticide dealer, contain information on other characteristics of a herbicide that might influence your handling of the product. In addition to these resources, you may contact the herbicide manufacturer if you have questions about the product.

Table 2 gives the common name of an active ingredient, with the corresponding trade names of products that contain that active ingredient. Some products contain only one active ingredient; others contain two or more.

As active ingredients go off patent, additional products containing the same active ingredients become available to the public as either private or generic brands. Private brands are manufactured by a producer of the active ingredient but distributed by another company. The quality and toxicity of a private brand should be identical to that of the original product of the same formulation. Therefore, the private brands are listed in Table 2 under the active ingredient but are not listed in Table 1. Refer to the toxicity of the original product, but be sure to look under the appropriate formulation.

Generic brands contain an active ingredient component found in a commonly known product, but the active ingredient for the formulation may be obtained from a different manufacturer. In addition, inert ingredients in the formulation (emulsifiers, for example) may be different. Generic brands are listed in Table 2 under the active ingredient, and their toxicity data may be found in Table 1.

Most products listed in these two tables are currently labeled and commonly used. New products

The information in this chapter is provided for educational purposes only. Product trade names have been used for clarity, but reference to trade names does not imply endorsement by the University of Illinois; discrimination is not intended against any product. The reader is urged to exercise caution in making purchases or evaluating product information.

Label registrations can change at any time. Thus the recommendations in this chapter may become invalid. The user must read carefully the entire, most recent label and follow all directions and restrictions. Purchase only enough pesticide for the current growing season.

that are scheduled for release in the following season are included in these lists, although they may not be available yet. Likewise, a product that has been suspended but is still available (supplies have yet to

be depleted) has been kept on these lists. If you have a question about the availability, consult the product manufacturer or the appropriate chapter in this handbook for pesticide use recommendations.

Table 1. Toxicity information and label signal words

Trade name and formulation ^a	Common name ^b and producer	Acute LD ₅₀		Irritation		Signal word(s)
		Oral ^c	Dermal ^d	Dermal ^e	Eye ^f	
AAAtrex ^{g,h} 4L Nine-O (90WDG)	atrazine <i>Novartis</i>	1,075	>5,000	Mild	Mild	Caution
		1,600	>10,000	Mild	Mild	Caution
Accent 75WDG	nicosulfuron <i>DuPont</i>	>5,000	>2,000	Mild	Moderate	Caution
Accent Gold 83.8WDG	clopyralid + flumetsulam + nicosulfuron + rimsulfuron <i>DuPont</i>	>5,000	>2,000	None	Moderate	DANGER
Access ^{g,h} 3E	triclopyr + picloram (2 + 1 lb) <i>Dow AgroSciences</i>	2,525	>2,000	Moderate	Moderate	Caution
Acme Super Brush Killer 4.5E	2,4-D + dichlorprop + dicamba (2 + 2 + 0.05 lb) <i>PBI Gordon</i>	>1,200	>2,000	Mild	Moderate	Warning
Action 5WP	fluthiacet-methyl <i>Novartis</i>	>5,000	>2,000	Mild	Mild	Caution
Aim 40DF	carfentrazone-ethyl <i>FMC Corporation</i>	>5,000	>5,000	Moderate	Mild	Caution
Alanap-L 2S	naptalam <i>Uniroyal</i>	1,770	20,000	Mild	Moderate	Warning
Ally 60DF	metsulfuron methyl <i>DuPont</i>	>5,000	>2,000	Mild	Mild	Caution

— = information not available at this time.

^aEC, emulsifiable concentrate; G, granule; L, flowable; S, water-soluble liquid; WDG, water-dispersible granule; WP or W, wettable powder; WSP, water-soluble powder; DF, dry-flowable; P, pellet; ME, microencapsulated. Liquid formulations (EC, E, L, S, WDL, F, ME) are in pounds per gallon; dry formulations (G, WDG, WP, W, WSP, DF, P) are in percentages.

^bWeed Science Society of America-approved name or experimental number.

^cOral LD₅₀ means the milligrams of chemical per kilogram of body weight that are lethal to 50 percent of a population of test animals, usually white rats, when administered in a single oral dose.

^dDermal LD₅₀ means the milligrams of chemical per kilogram of body weight that are lethal to 50 percent of a population of test animals, usually rabbits, when administered in a single dermal dose.

^eDermal irritation is determined by applying an amount of pesticide onto the skin of shaved test animals.

^fEye irritation is determined by applying an amount of pesticide into the eye of test animals.

^gRestricted-use pesticide (RUP).

^hGroundwater advisory.

ⁱThe signal word "DANGER" is used primarily for corrosives. The few cases here involving a poison are so indicated.

Table 1. Toxicity information and label signal words (cont.)

Trade name and formulation ^a	Common name ^b and producer	Acute LD ₅₀		Irritation		Signal word(s)
		Oral ^c	Dermal ^d	Dermal ^e	Eye ^f	
Aquathol K (3S)	endothall <i>Elf Atochem</i>	125	171	Severe	Severe— Corrosive Severe— Corrosive	DANGER— Poison ⁱ DANGER
7G		1,340	>10,000	Moderate		
Arsenal 2L A.C. 4S	imazapyr <i>American Cyanamid</i>	>5,000 >5,000	>2,148 >2,000	Mild Mild	Moderate None	Caution Caution
Assure II 0.88EC	quizalofop <i>DuPont/FMC Corporation</i>	4,100	>2,000	Moderate	Severe	DANGER
Authority 75DF	sulfentrazone <i>DuPont</i>	2,416	>5,000	Slight	Mild	Caution
Axiom 68DF	flufenacet + metribuzin (0.544 + 0.136 lb) <i>Bayer</i>	2,072	2,000	None	Mild	Caution
Balan 60DF	benefin <i>UAP</i>	>500	>2,000	Moderate	Moderate	Caution
Balance ^{g,h} 75WDG	isoxaflutole <i>Rhone-Poulenc</i>	>5,000	>2,000	Slight	Moderate	Caution
Banvel 4S	dicamba <i>MicroFlo</i>	2,629	>2,000	Moderate	Severe	Warning
Barricade 65WDG	prodiamine <i>Novartis</i>	>5,000	>2,000	None	Mild	Caution
Basagran ^h 4S	bentazon <i>BASF</i>	2,063	>10,000	Mild	Mild	Caution
Basis 75DF	rimsulfuron + thifensulfuron (50% + 25%) <i>DuPont</i>	>5,000	>2,000	Mild	Mild	Caution
Basis Gold 89.46WDG	rimsulfuron + nicosulfuron + atrazine <i>DuPont</i>	3,090	2,000	Mild	Mild	Caution
Beacon 75WDG	primisulfuron <i>Novartis</i>	5,050	>2,010	Slight	Mild	Caution
Betasan 4E	bensulide <i>Gowan</i>	1,115	>2,000	Mild	Severe	Caution

Table 1. Toxicity information and label signal words (cont.)

Trade name and formulation ^a	Common name ^b and producer	Acute LD ₅₀		Irritation		Signal word(s)
		Oral ^c	Dermal ^d	Dermal ^e	Eye ^f	
Bicep II Magnum ^{g,h} 5.5L	S-metolachlor + atrazine (2.4 + 3.1 lb) <i>Novartis</i>	3,271	>2,020	Slight	Mild	Caution
Bicep Lite II Magnum ^{g,h} 6L	S-metolachlor + atrazine (3.33 + 2.67 lb) <i>Novartis</i>	4,824	>2,000	Slight	Slight	Caution
Bicep Magnum TR ^{g,h} 4.59L	S-metolachlor + atrazine + flumetsulam (2.5 + 2.0 + 0.09 lb) <i>Novartis</i>	3,898	>2,020	Slight	Mild	Caution
Bladex ^{g,h} 90DF 4L	cyanazine <i>DuPont</i>	271 473	>2,000 >2,000	Slight Slight	Moderate Mild	Warning Warning
Blazer or Status ^h 2S	acifluorfen <i>BASF/American Cyanamid</i>	4,790	3,250	Moderate	Severe	DANGER
Broadstrike + Dual ^h 7.67EC	flumetsulam + metolachlor (0.2 + 7.47 lb) <i>Novartis</i>	1,338	>2,000	Moderate	Moderate	Warning
Broadstrike + Treflan ^h 3.65EC	flumetsulam + trifluralin (0.25 + 3.4 lb) <i>Dow AgroSciences</i>	3,162	>2,000	Moderate	Moderate	DANGER
Buctril 2EC	bromoxynil <i>Sedagri</i>	780	2,000	Moderate	Moderate	Warning
Buctril + atrazine ^{g,h} 3WDL	bromoxynil + atrazine (1 + 2 lb) <i>Sedagri</i>	3,600	>2,000	None	Moderate	Caution
Bullet 4MT ^{g,h} 4ME	alachlor + atrazine (2.5 + 1.5 lb) <i>Monsanto</i>	8,900	>5,000	Slight	Slight	Caution
Butoxone 200 ^h 2EC	2,4-DB <i>Cedar</i>	1,706	1,440	Moderate	Severe	DANGER
Butyrac 200 ^h 2EC	2,4-DB <i>Albaugh, Inc.</i>	1,706	1,440	Moderate	Severe	DANGER
Canopy ^h 75WDG 58.3DG	metribuzin + chlorimuron (64.3% + 10.7%) (50% + 8.3%) <i>DuPont</i>	1,500	>2,000	Slight	Mild	Caution

Table 1. Toxicity information and label signal words (cont.)

Trade name and formulation ^a	Common name ^b and producer	Acute LD ₅₀		Irritation		Signal word(s)
		Oral ^c	Dermal ^d	Dermal ^e	Eye ^f	
Canopy XL ^h 56.3DG	sulfentrazone + chlorimuron (0.469 + 0.094 lb) <i>DuPont</i>	3,297	>2,000	Slight	Mild	Caution
Casoron 50W 10G	dichlobenil <i>Uniroyal</i>	>3,200	>2,000	Mild	Mild	Caution
		>5,000	>2,000	None	Moderate	Caution
Celebrity B 70WDG	dicamba <i>BASF</i>	2,062	>2,000	None	Moderate	Warning
Celebrity G 75WDG	nicosulfuron <i>BASF</i>	>5,000	>2,000	None	Moderate	Warning
Clarity 4EC	dicamba <i>BASF</i>	3,512	>2,000	None	Moderate	Caution
Classic 25DF	chlorimuron <i>DuPont/FMC Corporation</i>	>5,000	>2,000	Mild	Mild	Caution
Cobra 2S	lactofen <i>Valent</i>	2,530	>2,000	Severe	Severe	DANGER
Command 3ME	clomazone <i>FMC</i>	>5,000	>5,000	None	None	Caution
Conclude B ^h 4S	bentazon + acifluorfen (2.67 + 1.33 lb) <i>BASF</i>	1,470	>2,000	None	Severe	DANGER
Conclude G 1.5EC	sethoxydim <i>BASF</i>	4,100	>5,000	Moderate	Moderate	Warning
Crossbow ^h 3EC	triclopyr + 2,4-D (1 + 2 lb) <i>Dow AgroSciences</i>	2,398	>2,000	Moderate	Moderate	Caution
Dacthal W75	Chlorthal-dimethyl <i>Zeneca</i>	>10,000	>10,000	None	Moderate	Caution
Devrinol 50WP 10G, 5G, 2G 2EC 50DF	napropamide <i>United Phosphorus</i>	2,710	>4,640	Mild	Mild	Caution
		>5,000	>5,000	Mild	Mild	Caution
		3,690	>5,000	Moderate	Moderate	DANGER
		>5,000	>4,640	Mild	Mild	Caution
Dimension 1EC	dithiopyr <i>Rohm & Haas</i>	>360	>5,000	Mild	Mild	Warning

Table 1. Toxicity information and label signal words (cont.)

Trade name and formulation ^a	Common name ^b and producer	Acute LD ₅₀		Irritation		Signal word(s)
		Oral ^c	Dermal ^d	Dermal ^e	Eye ^f	
Distinct ^h 70WDG	diflufenzapyr + dicamba (20% + 50%) BASF	>1,800	>5,000	Mild	Moderate	Caution
DoublePlay ^{g,h} 7E	EPTC + acetochlor (5.6 + 1.4 lb) Zeneca	1,464	>2,000	Moderate	Moderate	Warning
Dual II Magnum ^{g,h} 7.64EC	S-metolachlor Novartis	>2,675	>2,020	Slight	Mild	Caution
Epic ^{g,h} 58WDG	isoxaflutole + flufenacet (10% + 40%) Bayer	>773	>5,000	Slight	Mild	Caution
Eptam 7EC 10G	EPTC Zeneca	1,325 >5,000	2,750 >5,000	Mild None	Mild None	Caution Caution
Eradicane 6.7EC 25G	EPTC + safener Zeneca	>2,000 >5,000	>4,000 >2,000	Mild Mild	Mild Mild	Caution Caution
Escort 60DF	metsulfuron methyl DuPont	>5,000	>2,000	None	None	Caution
Evik 80WP	ametryn Novartis	1,950	>3,100	Mild	Mild	Caution
Exceed ^h 57WG	primisulfuron + prosulfuron (28.5% + 28.5%) Novartis	>4,000	>2,000	Slight	Slight	Caution
Expert 75WDG	oxasulfuron Novartis	>5,000	>2,000	Slight	Slight	Caution
Extrazine II ^{g,h} 90DF 4L	cyanazine + atrazine (67.5% + 22.5%) (3 + 1 lb) DuPont	369 369	>2,000 >2,000	Mild Slight	Mild Mild	Warning Warning
FirstRate ^h 84WDG	cloransulam Dow AgroSciences	>5,000	>2,000	Moderate	Slight	Caution
Flexstar 1.88	fomesafen Zeneca	3,883	>2,000	Moderate	Moderate	Warning

Table 1. Toxicity information and label signal words (cont.)

Trade name and formulation ^a	Common name ^b and producer	Acute LD ₅₀		Irritation		Signal word(s)
		Oral ^c	Dermal ^d	Dermal ^e	Eye ^f	
Frontier ^h 6L	dimethenamid <i>BASF</i>	849	>2,000	None	Severe	Warning
FulTime ^{g,h} 4.0CS	acetachlor + atrazine (2.4 + 1.6 lb) <i>Zeneca</i>	>5,000	>2,000	Slight	Moderate	Caution
Fusilade DX 2EC	fluazifop-p-butyl <i>Zeneca</i>	>5,000	>2,000	Moderate	Slight	Caution
Fusion 2.66EC	fluazifop + fenoxaprop- p-ethyl (2.0 + 0.56 lb) <i>Zeneca</i>	3,154	>2,000	Moderate	Moderate	Caution
Galaxy ^h 3.67S	acifluorfen + bentazon (0.67 + 3.0 lb) <i>BASF</i>	>1,210	>2,000	None	Severe	DANGER
Gallery 75DF	isoxaben <i>Dow AgroSciences</i>	>5,000	>5,000	Moderate	Moderate	Caution
Garlon ^h 3A 4EC	triclopyr <i>Dow AgroSciences</i>	1,847 1,338	>2,000 >2,000	Moderate Moderate	Severe Slight	DANGER Caution
Goal 2XL 2EC	oxyfluorfen <i>Rohm & Haas</i>	5,800	>3,000	Moderate	Moderate	Warning
Gordon's Brush Killer 4E	2,4-D + mecoprop + dicamba (2 + 1 + 1 lb) <i>PBI Gordon</i>	>1,550	>2,010	Moderate	Severe	DANGER
Gramoxone Extra ^g 2.5S	paraquat <i>Zeneca</i>	30	240	Severe	Severe	DANGER— Poison
Guardman/ LeadOff 5L	dimethenamid + atrazine (2.33 + 2.67 lb) <i>BASF/DuPont</i>	1,293	>2,000	Mild	Moderate	Caution
Harmony Extra 75DF	thifensulfuron methyl + tribenuron methyl (50% + 25%) <i>DuPont</i>	>5,000	>2,000	Mild	Moderate	Caution
Harness ^{g,h} 7EC	acetochlor <i>Monsanto</i>	2,690	>5,000	Moderate	Moderate	Warning
Harness Xtra ^{g,h} 5.6L	acetochlor + atrazine (3.1 + 2.5 lb) <i>Monsanto</i>	1,338	>5,000	Slight	Slight	Caution

Table 1. Toxicity information and label signal words (cont.)

Trade name and formulation ^a	Common name ^b and producer	Acute LD ₅₀		Irritation		Signal word(s)
		Oral ^c	Dermal ^d	Dermal ^e	Eye ^f	
Hi-Dep 4E	2,4-D <i>PBI Gordon</i>	2,621	>2,000	Moderate	Severe	DANGER
Horizon 2000 2.56EC	fluazifop + fenoxaprop- p-ethyl (2.0 + 0.56 lb) <i>AgrEvo</i>	3,154	>2,000	Moderate	Moderate	Caution
Hornet ^h 85.6SP	flumetsulam + clopyralid (23.1% + 6.25%) <i>Dow AgroSciences</i>	>5,000	>2,000	Mild	Severe	DANGER
Hydrothal 191 2S	endothall <i>Elf Atochem</i>	221	50	Severe	Severe— Corrosive	DANGER—
5G		1,540	>10,000	Moderate	Severe— Corrosive	Poison DANGER
Hyvar ^h X (80WP) XL (2WSL)	bromacil <i>DuPont</i>	>5,000 1,414	>5,000 2,000	Moderate Moderate	Slight Moderate	Caution Warning
Karmex 80DF	diuron <i>Griffin</i>	6,964	>2,000	None	Moderate	Warning
Kerb ^g 50WP	pronamide <i>Rohm & Haas</i>	5,620	3,160	Mild	Slight	Caution
Krenite S, UT 4S	fosamine <i>DuPont</i>	5,000	>5,000	Mild	Moderate	Warning
Krovar I ^h 80DF	bromacil + diuron (40% + 40%) <i>DuPont</i>	2,500	>2,000	Severe	Mild	Caution
Laddok S-12 ^{g,h} 5L	bentazon + atrazine (2.5 + 2.5 lb) <i>BASF</i>	3,840	>4,000	Moderate	Severe	DANGER— Corrosive
Lasso ^{g,h} 4EC	alachlor <i>Monsanto</i>	2,000	7,800	Moderate	Severe	DANGER
Liberty 1.67L	glufosinate <i>AgrEvo</i>	2,030	1,390	Slight	Moderate	Warning
Liberty ATZ ^{g,h} 4.3SC	glufosinate + atrazine (1.0 + 3.3 lb) <i>AgrEvo</i>	2,119	>5,319	None	Moderate	Caution

Table 1. Toxicity information and label signal words (cont.)

Trade name and formulation ^a	Common name ^b and producer	Acute LD ₅₀		Irritation		Signal word(s)
		Oral ^c	Dermal ^d	Dermal ^e	Eye ^f	
Lightning ^h 70WG	imazethapyr + imazapyr (0.084 + 0.026 lb) <i>American Cyanamid</i>	>5,000	>2,000	Slight	Moderate	Warning
Lorox 50DF	linuron <i>Griffin</i>	4,833	>2,000	None	Mild	Caution
Manifest B ^h 3.67SC	bentazon + acifluorfen (3 + 0.67 lb) <i>BASF</i>	1,210	>2,000	None	Severe	DANGER
Manifest G 1.5S	sethoxydim <i>BASF</i>	4,100	>5,000	Moderate	Moderate	Warning
Marksman ^{g,h} 3.2L	dicamba + atrazine (1.1 + 2.1 lb) <i>BASF</i>	5,900	>2,000	Mild	Mild	Caution
Micro-Tech ^{g,h} 4ME	alachlor <i>Monsanto</i>	>5,000	>5,000	Mild	Mild	Caution
NorthStar 47.4WDG	primisulfuron + dicamba (7.5% + 43.9%) <i>Novartis</i>	2,932	>2,000	Slight	Moderate	Caution
OpTill ^h 6L	dimethenamid + dicamba (5 + 1 lb) <i>BASF</i>	>915	>2,000	Moderate	Severe	DANGER— Corrosive
Option II	fenoxaprop <i>AgrEvo</i>	3,250	>2,000	Mild	Severe	DANGER
Oust 75DG	sulfometuron methyl <i>DuPont</i>	>5,000	>2,000	Mild	Mild	Caution
Pathway ^{g,h} 1.3S	picloram + 2,4-D (0.3 + 1.0 lb) <i>Dow AgroSciences</i>	>5,000	>3,980	Moderate	Moderate	Warning
Pennant ^h 5G	metolachlor <i>Novartis</i>	>5,030	>2,010	Mild	Slight	Caution
Pentagon 60DF	pendimethalin <i>American Cyanamid</i>	>5,000	>2,000	Slight	Slight	Caution
Permit 75DF	halosulfuron <i>Monsanto</i>	1,287	>5,000	Slight	Moderate	Caution

Table 1. Toxicity information and label signal words (cont.)

Trade name and formulation ^a	Common name ^b and producer	Acute LD ₅₀		Irritation		Signal word(s)
		Oral ^c	Dermal ^d	Dermal ^e	Eye ^f	
Pinnacle 25DF	thifensulfuron methyl <i>DuPont</i>	>5,000	>2,000	None	Moderate	Caution
Poast 1.5EC	sethoxydim <i>BASF</i>	4,100	>5,000	Moderate	Moderate	Warning
Poast Plus/Prestige 1EC	sethoxydim <i>BASF/American Cyanamid</i>	>2,200	>2,000	Slight	Slight	Caution
Pramitol 25E 2EC	prometon <i>Platte Chemical</i>	2,110	2,000	Severe	Severe	DANGER
Predict 80WDG	norflurazon <i>Novartis</i>	3,240	>20,000	None	None	Caution
Prefar 4EC	bensulide <i>Gowan</i>	826	>4,640	Mild	Moderate	Caution
Princep ^h 4L	simazine <i>Novartis</i>	>5,000	>2,500	Slight	Slight	Caution
90DF		>5,000	>2,000	Slight	Slight	Caution
Prowl 3.3EC	pendimethalin <i>American Cyanamid</i>	3,956	>2,200	Mild	Mild	Caution
Pursuit 2S	imazethapyr <i>American Cyanamid</i>	>5,000	>5,000	None	None	Caution
70DG		>5,000	>2,000	Slight	Moderate	Warning
Pursuit Plus 3EC	imazethapyr + pendimethalin (0.2 + 2.8 lb) <i>American Cyanamid</i>	3,506	>2,000	Moderate	Moderate	Caution
Python ^h	flumetsulam <i>Dow AgroSciences</i>	>5,000	>2,000	None	Slight	Caution
Ramrod 4F	propachlor <i>Monsanto</i>	3,269	4,194	Severe	Moderate	DANGER
20G		4,000	>20,000	Slight	Severe	DANGER
Ramrod/Atrazine ^{g,h} 4L	propachlor + atrazine (3 + 1 lb) <i>Monsanto</i>	2,374	>5,000	Slight	Moderate	DANGER
Raptor 1AS	imazamox <i>American Cyanamid</i>	>5,000	>4,000	None	None	Caution

Table 1. Toxicity information and label signal words (cont.)

Trade name and formulation ^a	Common name ^b and producer	Acute LD ₅₀		Irritation		Signal word(s)
		Oral ^c	Dermal ^d	Dermal ^e	Eye ^f	
Reflex 2LC	fomesafen <i>Zeneca</i>	>1,499	>1,000	Mild	Moderate	DANGER— Corrosive
Resource 0.86EC	flumiclorac pentyl <i>Valent</i>	3,600	>2,000	Slight	Mild	Warning
Reward 2S	diquat <i>Zeneca</i>	230	>400	Moderate	Moderate	Warning
Rezult B ^h 5S	bentazon <i>BASF</i>	2,063	>10,000	Mild	Mild	DANGER
Rezult G 1EC	sethoxydim <i>BASF</i>	>2,200	>2,000	Slight	Slight	Caution
Rodeo 5.4S (4 a.e.)	glyphosate <i>Monsanto</i>	>5,000	>5,000	Mild	None	Caution
Ronstar 2.5G 50WP	oxadiazon <i>Chipco</i>	>5,000 >5,000	>2,000 >2,000	Moderate Severe	Mild Moderate	Warning Warning
Roundup Ultra 4S (3 a.e.)	glyphosate <i>Monsanto</i>	>5,000	>5,000	Slight	Moderate	Caution
Scepter 70DG	imazaquin <i>American Cyanamid</i>	6,156	>2,000	None	Mild	Caution
Scorpion III ^h 83SP	flumetsulam + clopyralid + 2,4-D (9% + 25% + 50%) <i>Dow AgroSciences</i>	915	>2,000	Moderate	Moderate	DANGER
Select 2EC	clethodim <i>Valent</i>	2,920	>5,000	Moderate	Moderate	Warning
Sencor ^h 75DF	metribuzin <i>Bayer</i>	2,379	>5,000	None	Mild	Caution
Shotgun ^{g,h} 3.25L	atrazine + 2,4-D (2.25 + 1 lb) <i>Platte Chemical</i>	>5,000	>2,000	Mild	Severe	DANGER— Corrosive
Sinbar ^h 80WP	terbacil <i>DuPont</i>	>5,000	>5,000	None	Mild	Caution

Table 1. Toxicity information and label signal words (cont.)

Trade name and formulation ^a	Common name ^b and producer	Acute LD ₅₀		Irritation		Signal word(s)
		Oral ^c	Dermal ^d	Dermal ^e	Eye ^f	
Snapshot 2.5G	isoxaben + trifluralin (0.5% + 2%) <i>Dow AgroSciences</i>	>2,500	5,000	Slight	Mild	Caution
Snapshot 80DF	isoxaben + oryzalin (20% + 60%) <i>Dow AgroSciences</i>	>5,000	5,000	Mild	Mild	Caution
Sonalan HFP 3EC	ethalfluralin <i>Dow AgroSciences</i>	>10,000	>2,000	Moderate	Slight	DANGER
Sonar 4AS 5SRP (5%)	fluridone <i>SePro</i>	>500 500	>2,000 2,000	Slight None	Slight Moderate	Caution Caution
Spike ^h 20P	tebuthiuron <i>Dow AgroSciences</i>	>500	>2,000	None	Moderate	Caution
Spirit ^h 57WDG	prosulfuron + primisulfuron (14.2% + 42.8%) <i>Novartis</i>	5,000	—	—	—	Caution
Squadron 2.33L	pendimethalin + imazaquin (2.0 + 0.33 lb) <i>American Cyanamid</i>	3,695	>2,000	Mild	Severe	DANGER
Steel 2.59EC	imazethapyr + imazaquin + pendimethalin (0.17 + 0.17 + 2.25 lb) <i>American Cyanamid</i>	2,500	>2,000	Severe	Severe	DANGER
Stellar 3.1EC	lactofen + flumiclorac (2.4 + 0.7 lb) <i>Valent</i>	1,289	>2,000	Moderate	Severe	DANGER
Stinger ^h 3S	clopyralid <i>Dow AgroSciences</i>	>5,000	>5,000	Moderate	Slight	Caution
Storm ^h 4S	acifluorfen + bentazon (1.33 + 2.67 lb) <i>BASF</i>	1,470	2,000	None	Severe	DANGER
Surflan 4AS	oryzalin <i>Dow AgroSciences</i>	5,000	>2,000	Moderate	Slight	Caution
Surpass ^{g,h} 6.4EC	acetochlor (+ safener) <i>Zeneca</i>	1,426	>2,240	Moderate	Moderate	Warning

Table 1. Toxicity information and label signal words (cont.)

Trade name and formulation ^a	Common name ^b and producer	Acute LD ₅₀		Irritation		Signal word(s)
		Oral ^c	Dermal ^d	Dermal ^e	Eye ^f	
Sutan+ 6.7EC	butylate (+ safener) <i>MicroFlo</i>	3,690	>5,000	Moderate	Moderate	Caution
Team 2G	trifluralin + benefin <i>Dow AgroSciences</i>	500	>2,000	None	Moderate	Caution
Telar 75DF	chlorsulfuron <i>DuPont</i>	>5,000	>2,000	None	Mild	Caution
Thistrol 2S	MCPB <i>Nufarm</i>	680	—	Severe	Severe	Caution
TopNotch ^{g,h} 3.2CS	acetochlor (+ safener) <i>Zeneca</i>	3,500	>8,000	None	Slight	Caution
Tordon 101 Mixture ^{g,h} 2.5S	picloram + 2,4-D (0.5 + 2.0 lb) <i>Dow AgroSciences</i>	2,598	>2,000	Moderate	Moderate	Caution
Tordon K ^{g,h} 2S	picloram <i>Dow AgroSciences</i>	>5,000	>2,000	Moderate	Severe	Caution
Touchdown 5 5L (3.43 a.e.)	glyphosate-trimesium <i>Zeneca</i>	1,298	>2,000	None	Moderate	Caution
Tough 3.75EC	pyridate <i>Novartis</i>	905	>2,000	Slight	Mild	Warning
Transline ^h 3S	clopyralid <i>Dow AgroSciences</i>	>5,000	>5,000	Moderate	Slight	Caution
Treflan 4HFP 5G TR-10	trifluralin <i>Dow AgroSciences</i>	>2,900 >500 >500	>2,000 >2,000 >2,000	Moderate Moderate Slight	Moderate Moderate Moderate	Warning Caution Caution
Tri-4 4HFP	trifluralin <i>American Cyanamid</i>	3,768	>2,000	Mild	Moderate	Warning
Tupersan 50WP	siduron <i>Gowan</i>	7,500	>5,500	None	Slight	Caution
Turbo ^h 8EC	metribuzin + metolachlor (1.45 + 6.55 lb) <i>Bayer</i>	849	>2,000	Slight	Slight	Caution
Turflon D 3EC	triclopyr + 2,4-D (1 + 2 lb) <i>Dow AgroSciences</i>	1,792	1,796	Mild	Slight	Caution

Table 1. Toxicity information and label signal words (cont.)

Trade name and formulation ^a	Common name ^b and producer	Acute LD ₅₀		Irritation		Signal word(s)
		Oral ^c	Dermal ^d	Dermal ^e	Eye ^f	
Velpar 90WSP 2L ULW (75G)	hexazinone <i>DuPont</i>	1,100 6,887 1,200	>5,000 >7,500 >2,000	Slight None None	Moderate Severe Severe	DANGER DANGER DANGER
Weedar 64 3.8S	2,4-D dimethylamine <i>Sedagri</i>	1,161	1,544	Mild	Severe— Corrosive	DANGER— Corrosive
Weedmaster ^h 3.8S	dicamba + 2,4-D (1 + 2.87 lb) <i>BASF</i>	>5,000	—	—	Mild	DANGER
Weedone LV4 3.8E	2,4-D ester <i>Sedagri</i>	1,375	>2,000	Mild	Mild	Caution
XL 2G	benefin + oryzalin (1% + 1%) <i>Dow AgroSciences</i>	3,750	>2,000	Slight	Moderate	Caution

Table 2. Herbicide active ingredients and products containing these active ingredients

Common name	Trade name(s)	Common name	Trade name(s)	
2,4-D	Acme Super Brush Killer ^a	atrazine	AAtrex	
	Crossbow ^a		Basis Gold ^a	
	Curtail ^a		Bicep II Magnum ^a	
	Hi-Dep		Bicep Lite II Magnum ^a	
	Pathway ^a		Bicep Magnum TR ^a	
	Scorpion III ^a		Buctril + Atrazine ^a	
	Shotgun ^a		Bullet ^a	
	Tordon 101 Mixture ^a		Extrazine II ^a	
	Trimec 352 ^a		FulTime ^a	
	Turflon D ^a		Guardzman ^a	
	Weedar 64		Harness Xtra ^a	
	Weedone 638		Laddok S-12 ^a	
	Weedmaster ^a		Leadoff ^a	
	Weedone 170 ^a		Liberty ATZ ^a	
	Weedone LV4 (many others)		Marksman ^a	
			Moxy + Atrazine ^a	
			Ramrod/Atrazine ^a	
	Shotgun ^a			
2,4-DB	Butoxone	benefin	Balan	
	Butyrac 200		Team ^a	
2,4-DP	(see dichlorprop)			XL ^a
acetochlor	DoublePlay ^a		bensulide	Betasan
	FulTime ^a			Prefar
	FieldMaster ^a			
	Harness			
	Harness Xtra ^a			
	Surpass			
acifluorfen	TopNotch		bentazon	Basagran
	Blazer/Status			Conclude ^a
	Conclude ^a			Galaxy ^a
	Galaxy ^a			Laddok S-12 ^a
	Manifest ^a			Manifest ^a
alachlor	Storm ^a		bromacil	Rezult ^a
	Bullet ^a			Storm ^a
	Lasso			
	Micro-Tech			
ametryn	Evik	bromoxynil	Hyvar	
			Krovar I ^a	
		butylate	Buctril	
			Buctril + Atrazine ^a	
			Moxy	
		carfentrazone	Sutan+	
				Aim

^aFormulated mixture with additional active ingredient(s).

^bPrivate-label product: Toxicity information identical to that for Basagran.

^cPrivate-label product: Toxicity information similar to that for Roundup (may or may not contain a surfactant).

Table 2. Herbicide active ingredients and products containing these active ingredients (cont.)

Common name	Trade name(s)	Common name	Trade name(s)
chlorimuron	Canopy ^a Canopy XL ^a Classic Synchrony STS ^a	endothall	Aquathol Hydrothal 191
chlorsulfuron	Telar	EPTC	DoublePlay ^a Eptam Eradicane (+ safener)
clethodim	Select	ethalfluralin	Curbit Sonalan
clomazone	Command 3ME	fenoxaprop-p-ethyl	Fusion ^a Horizon 2000 ^a
clopyralid	Accent Gold ^a Hornet ^a Scorpion III ^a Stinger Transline	fluazifop-p-butyl	Fusilade DX Fusion ^a Horizon 2000 ^a
cyanazine	Bladex CyPro Extrazine II ^a	flufenacet	Axiom ^a Domain ^a Epic ^a
dicamba	Acme Super Brush Killer ^a Banvel Celebrity B Clarity Distinct ^a Marksman ^a NorthStar ^a OpTill ^a Trimec 352 ^a Weedmaster ^a	flumetsulam	Accent Gold ^a Bicep Magnum TR ^a Broadstrike + Dual ^a Broadstrike + Treflan ^a Hornet ^a Python Scorpion III ^a
dichlobenil	Barrier Casoron	flumiclorac-pentyl	Resource Stellar ^a
dichlorprop (2,4-DP)	Acme Super Brush Killer ^a Weedone 170 ^a	fluridone	Sonar
diflufenzopyr	Distinct Celebrity Plus	fomesafen	Flexstar Reflex
dimethenamid	Frontier Guardsman ^a /LeadOff ^a OpTill ^a	fosamine	Krenite S Krenite UT
diquat	Reward	glufosinate	Liberty Liberty ATZ ^a
dithiopyr	Dimension	glyphosate	Credit Glyphomax Glyphos Kleenup Rodeo Roundup Pro Roundup Ultra
diuron	Direx Karmex Krovar I ^a		

Table 2. Herbicide active ingredients and products containing these active ingredients (cont.)

Common name	Trade name(s)	Common name	Trade name(s)
glyphosate-trimesium	Touchdown 5	metsulfuron methyl	Ally Escort
hexazinone	Velpar	napropamide	Devrinol
imazamox	Raptor	naptalam	Alanap-L
imazapyr	Arsenal Chopper Lightning ^a	nicosulfuron	Accent Accent Gold ^a Basis Gold ^a Celebrity G Celebrity Plus
imazaquin	Scepter Squadron ^a Steel ^a	norflurazon	Predict Zorial
imazethapyr	Lightning ^a Pursuit Pursuit Plus ^a Steel ^a	oryzalin	Snapshot 80DF ^a Surflan XL ^a
isoxaben	Gallery Snapshot 2.5G ^a Snapshot 80DF ^a	oxadiazon	Ronstar
isoxaflutole	Balance Epic ^a	oxyfluorfen	Goal
lactofen	Cobra Stellar ^a	paraquat	Gramoxone Extra
linuron	Lorox	pendimethalin	Pendimax, Prowl Pendulum Pentagon Pursuit Plus ^a Squadron ^a Steel ^a
MCPB	Thistrol	picloram	Access ^a Pathway ^a Tordon 101 Mixture ^a Tordon K Tordon RTU ^a
mecoprop (MCP)	Chipco Turf Trimec 352 ^a (many turf mixtures)	primisulfuron	Beacon Exceed, ^a Spirit ^a NorthStar ^a
metolachlor	Bicep II Magnum ^a Bicep Lite II Magnum ^a Bicep Magnum TR ^a Broadstrike + Dual ^a Dual II Magnum Pennant Turbo ^a	prodiamine	Barricade
metribuzin	Axiom ^a Canopy ^a Domain ^a Sencor Turbo ^a	prometon	Pramitol 25E
		propachlor	Ramrod 4L

Table 2. Herbicide active ingredients and products containing these active ingredients (cont.)

Common name	Trade name(s)	Common name	Trade name(s)
prosulfuron	Exceed ^a Peak Spirit ^a	thifensulfuron methyl	Basis ^a Harmony Extra ^a Pinnacle Reliance STS ^a Synchrony STS ^a
pyridate	Tough		
quizalofop	Assure II	tribenuron methyl	Express Harmony Extra ^a
rimsulfuron	Accent Gold ^a Basis ^a Basis Gold ^a Matrix	triclopyr	Access ^a Crossbow ^a Garlon Remedy Turflon D ^a
sethoxydim	Conclude ^g Poast Poast Plus Rezult ^g	trifluralin	Broadstrike + Treflan ^a Snapshot 2.5TG ^a Team ^a Treflan Tri-4 Trilin
siduron	Tupersan		
simazine	Princep		
sulfentrazone	Authority Canopy XL ^a		
sulfometuron methyl	Oust		
tebuthiuron	Spike		
terbacil	Sinbar		

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