

Evaluation Report for Category B, Subcategories 2.1, 2.3, 2.4 Application

Application Number: 2019-1488
Application: New End-Use Product Chemistry –Guarantee, Identity and Proportion of Formulants
Product: Tiedown Liquid Herbicide
Registration Number: 33753
Active ingredients (a.i.): S-Metolachlor and R-Enantiomer, Metribuzin
PMRA Document Number: 3101490

Purpose of Application

The purpose of this application was to register a new end use product, Tiedown Liquid Herbicide, containing s-metolachlor and r-enantiomer and metribuzin, for pre-plant incorporated or pre-emergent application to potatoes (Eastern and Western Canada) and soybeans (Eastern Canada only) for the control of grasses and broadleaf weeds.

Chemistry Assessment

Tiedown Liquid Herbicide is formulated as an emulsifiable concentrate containing s-metolachlor and r-enantiomer at a concentration of 405 g/L and metribuzin at a concentration of 135 g/L. This end-use product has a density of 1.02989 g/mL and pH of 5.7. The required chemistry data for Tiedown Liquid Herbicide have been provided, reviewed and found to be acceptable.

Health Assessments

Tiedown Liquid Herbicide is of low acute oral, dermal, and inhalation toxicity in rats. It is mildly irritating to the eye and minimally irritating to the skin of the rabbit. It is not a dermal sensitizer in the guinea pig.

Tiedown Liquid Herbicide, for pre-plant incorporation or pre-emergent application to potatoes and soybeans (Eastern Canada only) to control grasses and broadleaf weeds, fits within the registered use patterns for s-metolachlor and r-enantiomer and metribuzin. The risk assessments on file for s-metolachlor and r-enantiomer and metribuzin are adequate to address the potential exposure for mixers, loaders, applicators and postapplication workers from the use of Tiedown Liquid Herbicide. No health risks of concern are expected, provided that workers wear the appropriate personal protective equipment and follow all label directions.

No new residue data for s-metolachlor and r-enantiomer or metribuzin in potatoes and soybean were submitted to support the registration of Tiedown Liquid Herbicide. Previously reviewed residue data from field trials conducted on soybean and potatoes, as well as processed commodities, were reassessed in the framework of this petition.

The existing MRLs will cover expected residues on food commodities, and will not pose an unacceptable risk to any segment of the population, including infants, children, adults and seniors.

Environmental Assessment

The registration of Tiedown Liquid Herbicide does not pose any additional risk to the environment when used according to the label directions.

Value Assessment

The registration of the two active ingredients, s-metolachlor and r-enantiomer and metribuzin, from two herbicide mode of action groups, in a single formulation, will provide farmers an option for control of a broader spectrum of grasses and broadleaf weeds and help to mitigate herbicide resistance.

Value information submitted consisted of scientific rationales and data from replicated field trials conducted over multiple locations and years. The information demonstrated (1) that a pre-plant incorporated or pre-emergent application of Tiedown Liquid Herbicide at the labelled rates can be expected to provide acceptable control of green foxtail, lamb's-quarters, redroot pigweed, wild mustard, American nightshade, eastern black nightshade, crabgrass (smooth and hairy), barnyard grass, redroot pigweed, fall panicum, foxtail (green, yellow, and giant), old witchgrass, yellow nutsedge, volunteer canola, Johnson grass (seedling), common chickweed, common ragweed, dandelion (seedling), green smartweed, lady's-thumb, and velvetleaf and (2) potatoes and soybeans can be expected to have an adequate margin of tolerance to Tiedown Liquid Herbicide applied in accordance with the label instructions.

The rotational crop claims for Tiedown Liquid Herbicide are supported from a value perspective, since they represent the most restrictive previously registered rotational crop.

Conclusion

The Pest Management Regulatory Agency has completed an assessment of the information provided, and has found it sufficient to support the registration of Tiedown Liquid Herbicide.

References

PMRA Document Number	Reference
2980347	2019, Product chemistry for Tiedown Liquid Herbicide, DACO: 3.1.1,3.1.2,3.1.3,3.1.4,3.5.15,3.5.4,3.5.5
2980348	2016, Moccasin MTZ product identity, composition and analysis, DACO: 3.2.1,3.2.2,3.2.3,3.3.1 CBI
2980349	2016, Validation of analytical method for determination of active ingredient content of s-metolachlor 405 + metribuzin 135 g/L, DACO: 3.4.1
2980350	2019, Validation of analytical method for determination of s-isomer and r-isomer of s-metolachlor in s-metolachlor 405 + metribuzin 135 g/L EC, DACO: 3.4.1 CBI
2980351	2016, Appearance (colour, physical state and odour) of s-metolachlor 405 + metribuzin 135 g/L EC, DACO: 3.5.1,3.5.2,3.5.3
2980352	2019, Accelerated storage stability and corrosion characteristics of s-metolachlor 405 + metribuzin 135 g/L EC, DACO: 3.5.10,3.5.14 CBI
2980353	2016, Flash point of s-metolachlor 405 + metribuzin 135 g/L EC, DACO: 3.5.11
2980354	2016, Explodability of s-metolachlor 405 + metribuzin 135 g/L EC, DACO: 3.5.12
2980355	2016, Miscibility of s-metolachlor 405 + metribuzin 135 g/L EC, DACO: 3.5.13
2980356	2016, Accelerated storage stability and corrosion characteristics of s-metolachlor 405 + metribuzin 135 g/L EC AT 54 C, DACO: 3.5.10,3.5.14
2980357	2016, Specific gravity of s-metolachlor 405 + metribuzin 135 g/L EC, DACO: 3.5.6
2980358	2016, pH of s-metolachlor 405 + metribuzin 135 g/L EC, DACO: 3.5.7
2980359	2016, Oxidation/reduction properties of s-metolachlor 405 + metribuzin 135 g/L EC, DACO: 3.5.8
2980360	2016, Viscosity of s-metolachlor 405 + metribuzin 135 g/L EC, DACO: 3.5.9
3006734	2019, Revised manufacturing process for s-metolachlor 405 + metribuzin 135 EC, DACO: 3.2.1, 3.2.2, 3.3.1, CBI
2980361	2016, Acute oral toxicity study of s-metolachlor 405 + metribuzin 135 g/L EC in rats, DACO: 4.6.1
2980362	2016, Acute dermal toxicity study of s-metolachlor 405 + metribuzin 135 g/L EC in rats, DACO: 4.6.2

2980363	2016, Acute inhalation toxicity study of s-metolachlor 405 + metribuzin 135 g/L EC in rats, DACO: 4.6.3
2980364	2016, Acute eye irritation study of s-metolachlor 405 + metribuzin 135 g/L EC in rabbits, DACO: 4.6.4
2980365	2016, Acute dermal irritation study of s-metolachlor 405 + metribuzin 135 g/L EC in rabbits, DACO: 4.6.5
2980366	2016, Skin sensitisation study of s-metolachlor 405 + metribuzin 135 g/L EC in guinea pigs [guinea pig maximization test], DACO: 4.6.6
2980341	2017, United Phosphorus herbicide report, DACO: 10.2.3.3(B).
2980342	2017, Weed control in soybean with KFD-273-01 pre-emergence, DACO: 10.2.3.3(B).
2980343	2016, KFD-273-01 s-metolachlor formulation / soybean / weeds pre emergence, DACO: 10.2.3.3(B).
2980344	2017, University of Idaho potato cropping systems weed management, DACO: 10.2.3.3(B).
2999494	2016, s-metolachlor + metribuzin 3:1 vs Boundary and tank mix S-metolachlor + safener vs. Dual II Magnum on soybean, DACO: 10.2.3.3(B).
2999495	2018, Potato herbicide efficacy, DACO: 10.2.3.3(B).
2999496	2017, Moccasin MTZ & Tripzin ZC pre-emergence potato herbicide trial, DACO: 10.2.3.3(B).
2999497	2018, Moccasin MTZ pre-emergence weed control in potatoes, DACO: 10.2.3.3(B).
2999498	2018, Weed control systems in Enlist soybean, DACO: 10.2.3.3(B).
2999499	2018, KFD-240, TieDown co-pack/RR soybeans/BRDL & grass weeds - Evaluation of crop response and control efficacy, DACO: 10.2.3.3(B).
2999500	2018, KFD-240, TieDown co-pack/RR soybeans/BRDL & grass weeds - Evaluation of crop response and control efficacy, DACO: 10.2.3.3(B).
2999501	2018, Weed control in soybean with KFD-240-02 applied pre-emergence in Liberty Link soybean, DACO: 10.2.3.3(B).
2999502	2018, Weed control in soybean with KFD-240-01 applied pre-emergence in RR soybean, DACO: 10.2.3.3(B).
2999503	2018, Weed control in soybean with KFD-240-02 applied pre-emergence in RR Xtend soybean, DACO: 10.2.3.3(B).

2999504	2018, KFD-240, TieDown co-pack/RR soybeans / BRDL & grass weeds - Evaluation of crop response and control efficacy, DACO: 10.2.3.3(B).
2999505	2016, KFD 240-01 S-metolachlor + metribuzin 3:1 vs Boundary and tank mix, DACO: 10.2.3.3(B).
2999506	2018, Economics of weed control in LibertyLink soybean, DACO: 10.2.3.3(B).
2999507	2018, Bayer and UPI glufosinate programs in reduced till LibertyLink soybeans, DACO: 10.2.3.3(B).

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