



Pesticide Fact Sheet

Name of Chemical: Pyroxsulam
Reason for Issuance: Conditional Registration
Date Issued: February 27, 2008

DESCRIPTION OF CHEMICAL

Generic Name: N-(5,7-dimethoxy[1,2,4]triazolo[1,5-a]pyrimidin-2-yl)-2-methoxy-4-(trifluoromethyl)-3-pyridinesulfonamide

Common Name: Pyroxsulam

Trade Names: XDE-742

EPA Chemical Code: 108702

**Chemical Abstracts
Service (CAS)
Number:** 422556-08-9

**Year of Initial
Registration:** 2008

Pesticide Type: Herbicide

Chemical Class: Triazolopyrimidine

U.S. Producers: Dow AgroSciences LLC

USE PATTERNS AND FORMULATIONS

Application Sites: Pyroxsulam is registered for use on wheat

Types of Formulations:

Pyroxsulam MC	(Manufacturing concentrate)
PowerFlex Herbicide	(Water dispersible granule)
GF-1847 Herbicide	(Oil dispersion)

Application Methods And Rates: Pyroxsulam is a post-emergence herbicide intended for control of a wide spectrum of grass and broadleaf weeds in wheat by ground or aerial application. It is a Group 2 herbicide (i.e., an acetolactate synthase inhibitor). PowerFlex Herbicide is a 7.5% water dispersible granule (WDG) formulation. GF-1847 is a 4.31% Oil Dispersion (OD). Both formulations contain the safener cloquintocet-mexyl. The products are for use as a single postemergence broadcast application in the fall or spring to wheat at the 3-leaf to jointing stage at 0.016 lb ai/A for the 7.5% WDG formulation and 0.017 lb ai/A for the 0.38 lb/gal OD formulation.

HUMAN HEALTH RISK ASSESSMENT

Hazard and risk assessments were conducted in relation to this registration application and tolerance petition for pyroxsulam on wheat and suggest that its use, consistent with the proposed labeling measures, will be protective of the public health and the environment.

Acute Toxicity: Pyroxsulam has a low to moderate order of acute toxicity via the oral, dermal, and inhalation routes (Category III or IV). It is a dermal sensitizer. The acute toxicity findings for pyroxsulam are summarized below:

Acute Oral Toxicity: III
 Acute Dermal Toxicity: IV
 Acute Inhalation: IV
 Primary Eye Irritation: IV
 Primary Dermal Irritation: IV
 Dermal Sensitization: Positive

Other Toxicity: Little toxicity was observed in the repeat-dose toxicology studies via the oral and dermal routes of exposure. No treatment-related adverse effects were observed in the subchronic studies (mice, rats, or dogs). There was evidence of increased serum cholesterol levels in the subchronic exposures, but in light of a 28-day satellite recovery group in the subchronic rat study, where the cholesterol levels returned to normal after cessation of treatment, these effects were considered to be adaptive and non-adverse. Increased liver weights were observed in several of the subchronic and chronic studies; however, in the absence of corroborating changes in histopathology, the increased liver weights were not considered adverse. No adverse effects were observed in the chronic dog study or chronic/carcinogenicity study in rats. In the carcinogenicity study in mice, the LOAEL was 1000 mg/kg/day, based on increased liver weights with

corroborating evidence of increased incidence of clear cell foci of alteration in hepatocytes in males. The NOAEL was 100 mg/kg/day.

Metabolism: In the metabolism study in rats, pyroxsulam was rapidly absorbed and excreted via the urine and feces with the majority of the radioactivity being eliminated by 12 and 24 hours post-dosing, respectively. The urine accounted for 57-78% and 30% of the administered dose from all low-dose groups and the high-dose group, respectively, following 48 hours post-dosing. The feces accounted for 45-51% and 69% of the administered dose from all low-dose groups (except for the intravenous dose group) and the high-dose group, respectively. Saturation of absorption was observed between the doses of 10 and 1000 mg/kg leading to a decrease in the bioavailability of pyroxsulam. Only the parent and the metabolite 2'-demethyl-XDE-742 were detected, with concentrations ranging from 80-90% and 4-16% of the administered dose, respectively. Also, there were no differences among the distribution of pyroxsulam and 2'-demethyl-XDE-742 in the urine and feces. Four major peaks (3 in the urine and 1 in the feces, <1% of the administered dose each) unique to the metabolism of the triazole ¹⁴C-labeled pyroxsulam samples would be consistent with minimal ring cleavage occurring during the metabolism of pyroxsulam.

Similarly, in the mouse metabolism study, pyroxsulam was rapidly absorbed and excreted. Saturated absorption was again noted at the higher doses. Elimination of the absorbed radioactivity from plasma, RBC, and liver followed a biexponential pattern comprised of rapid and slow phases. Most of the absorbed dose was eliminated from the body via the rapid elimination phase, which resulted in a half-life of 2-3 hours. The remaining radioactivity was eliminated through the slow elimination phase, resulting in a terminal half-life of 22-30 hours in plasma, 62-212 hours in RBC, and 32-307 hours in the liver. Excretion through urine and feces accounted for the majority of the administered dose by 12-24 hours after dosing.

Endpoints: There are no effects that could be the result of a single dose exposure in the toxicology database; there were no developmental, neurotoxicity, or other hazard concerns.

The chronic reference dose (1.0 mg/kg/day) is based on the increased absolute and relative liver weights and increased incidence of hepatocellular clear cell foci of alteration in males noted in the carcinogenicity study in mice.

Carcinogenicity: Although a chronic endpoint was chosen using the liver effects noted in the carcinogenicity study in mice as described above, the selected effect is considered a chronic effect and not a carcinogenetic effect. No treatment-related tumors were observed in carcinogenicity studies in rats and mice. Therefore, pyroxsulam is classified as “not likely to be carcinogenic to humans.”

FQPA Safety Factor: The FQPA safety factor has been reduced to 1X because there was no evidence of increased susceptibility, there are no/low concerns and no residual uncertainties with regard to pre- and/or postnatal toxicity, and the toxicological database is complete.

Dietary Exposure:

Acute Risk: As there is no acute endpoint, an acute dietary risk assessment is not needed.

Chronic Risk: The chronic analysis is based on tolerance level residues and 100% crop treated assumptions. Modeled estimates of drinking water concentrations were directly entered into the dietary exposure model. For chronic dietary risk assessment, the water concentration value of 0.465 ppb was used to assess the contribution to drinking water. All populations subgroups have risk estimates of less than 1% of the chronic population adjusted dose (cPAD) for all population groups that are well below the Agency's level of concern (i.e., 100% of the cPAD).

Aggregate Risk: No residential uses are proposed. Therefore, aggregate risk consists of exposure from food and drinking water sources which is less than 1% of the cPAD for all population groups.

Residue Chemistry: Parent pyroxsulam is the residue of concern for risk assessment in wheat, rotational crops, and animal commodities. Tolerances are being established for wheat commodities only. Parent is the residue of concern for tolerance expression. As tolerances are not being established for rotational crops or animal commodities, the residue of concern in these commodities for tolerance expression is not an issue. Adequate field trial data for wheat are available.

Tolerance levels are established as follows:

Wheat, forage.....	0.06 ppm
Wheat, grain.....	0.01 ppm
Wheat, hay.....	0.01 ppm
Wheat, straw.....	0.03 ppm

No Codex, Canadian, or Mexican MRLs have previously been established for pyroxsulam. As noted above, tolerances for pyroxsulam on wheat are pending in Canada and Australia. These Canadian and Australian tolerances are not expected to result in any harmonization issues.

Occupational: No chemical-specific data for assessing human exposures during pesticide handling activities were submitted in support of the registration of pyroxsulam, EPA used surrogate data from the PHED Version 1.1 (PHED Surrogate Exposure Guide, 8/98) to assess exposures. Defaults were used for acres treated per day and body weight. Based on the frequency/interval of applications to the plants, EPA assumes that all exposures would be less than 30 days per year (short-term exposures).

The level of concern is a Margin of Exposure (MOE) of less than 100. All MOEs for worker risk for pyroxsulam are greater than 100. Post-application exposures/risks were not evaluated, as there are no dermal endpoints and inhalation exposure is expected to be negligible.

In lieu of a post-application risk assessment, a restricted-entry interval (REI) of 12 hours is assumed based on the default of 12 hours in the Worker Protection Standard for Agricultural Pesticides for active ingredients classified as category III or IV for acute dermal toxicity, skin and eye irritation potential.

ENVIRONMENTAL RISK ASSESSMENT

Potential Risks to Non-Target Organisms: Pyroxsulam is practically non-toxic to birds, mammals, fish, freshwater invertebrates and honeybees under acute exposure conditions. No federally listed endangered or threatened species acute or chronic levels of concern were exceeded for any animal species evaluated. Although no toxicity data were submitted for estuarine/marine animal species, the toxicity profile based on freshwater species and the physical properties of the chemical indicates that risks to estuarine/marine species are unlikely.

As would be expected with any herbicide, pyroxsulam is highly toxic to terrestrial plants following acute exposure. In terrestrial plants, monocotyledonous plants appear more sensitive to pyroxsulam compared to dicotyledonous plants. Other estimated risks may translate to reduced survival, reproduction, or growth in affected species with the potential for subsequent effects at higher levels of biological organization. For federally listed endangered or threatened plant species, acute risk levels of concern were exceeded for semi-aquatic and terrestrial monocot and dicot plants. EPA also considers there to be potential to affect species which depend upon listed or non-listed plant species for food and/or habitat. Indirect effects in this case should be considered for both terrestrial and aquatic animal species. The extent to which the proposed uses of pyroxsulam will directly affect plant species and indirectly effect animal species will require further assessment; specifically, clear delineation of action area, identification of listed species that co-occur in areas of pyroxsulam use, species-specific life history information, and an evaluation of critical habitat for listed species that occur within the defined action area.

The Agency strategy to mitigate risks to non-target organisms involves label language that is intended to keep the pesticide on the intended treatment area, and therefore reducing the potential for exposure to non-target plants. For example, spray drift management language will be required on the labeling, which advises users of applicator responsibilities and offers specific techniques to reduce the possibility of spray drift. In addition, the surface water advisory language describes preventative techniques such as the use of vegetative buffer strips, which may further reduce possible exposure to non-target plants.

Environmental Fate: Pyroxsulam might be moderately persistent in the environment and is mobile in soil. Primary routes of degradation include aqueous photolysis, aerobic soil metabolism, and possibly aerobic aquatic metabolism. The chemical appears to persist under anaerobic conditions. It was stable to the abiotic processes of soil photolysis and hydrolysis. A terrestrial field dissipation study was conducted for pyroxsulam using four sites in Canada with three bare ground plots each. Pyroxsulam dissipated in the loam and clay loam soils with half-lives of 4.6 days (0-30 cm depth) and 23 days (0-60 cm depth), respectively. No major degradates were detected in the test sites. Controlled laboratory experiments were performed where the degradation of pyroxsulam was carried out under a variety of conditions. Major degradates include the demethylated products 5-OH-XDE-742, 7-OH-XDE-742, 6-Cl-7-OH-XDE-742, and 5,7-diOH-XDE-742 and the further degraded products XDE-742 ATSA, XDE-742 sulfinic acid, XDE-742 ADTP, and carbon dioxide. Pending

results from the completed storage stability study, the dissipation kinetics of the terrestrial field dissipation study is uncertain.

To address concerns with the potential runoff of pyroxsulam that may result from the persistence and mobility described above, label language will be required in the form of surface water advisories that stress the potential of runoff after treatment, describe conditions that may promote runoff to surface water, and suggest practices that may reduce contamination of surface water. This label language is described in more detail in the section for Required Label Statements below.

PROPOSED REGULATORY DECISION

Conditional Registration: A conditional registration is recommended for pyroxsulam for use as a selective herbicide for control of broadleaf weeds in wheat.

Conditional Data: Submission of ongoing one year storage stability and corrosion characteristic studies on formulated products will be required within one year of the date of registration.

Public Interest Finding: A conditional registration under FIFRA Section 3(c)(7)(C) may be granted if EPA determines that use of the pesticide during such period will not cause any unreasonable adverse effect on the environment, and that use of the pesticide is in the public interest.

REQUIRED LABEL STATEMENTS

End use products containing pyroxsulam as an active ingredient will be required to add the following protective language onto the product labeling:

Application Restrictions: Applications are limited to one application per growing season in the “Crop Specific Use Restrictions” sections.

Preharvest Intervals: A 28-day precutting interval for wheat hay will be required. A 60-day preharvest interval will be required for wheat grain and wheat straw.

Environmental Hazards: “Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.”

Surface Water Advisory: “This product may contaminate surface water due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for runoff for several days after application. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from runoff of rainfall. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.”

GOVERNMENT PERFORMANCE AND RESULTS ACT (GPRA)

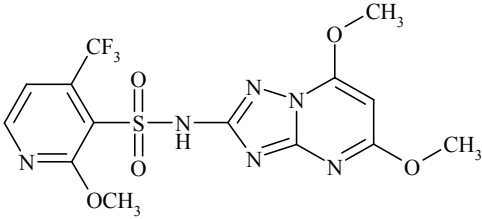
Registering pyroxsulam will meet the objectives of GPRA title 3.1.1 by assuring new pesticides that enter the market are safe for humans and the environment and title 4.1.2 by reducing environmental exposure to herbicides.

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DISCLAIMER: The information presented in this Pesticide Fact Sheet is for informational purposes only and may not be used to fill data requirements for pesticide registration and reregistration.

Appendix 1 - Structure and Nomenclature

Pyroxsulam Nomenclature.	
Compound	
Common name	Pyroxsulam
Company experimental name	XDE-742
IUPAC name	<i>N</i> -(5,7-dimethoxy[1,2,4]triazolo[1,5- <i>a</i>]pyrimidin-2-yl)-2-methoxy-4-(trifluoromethyl)pyridine-3-sulfonamide
CAS name	<i>N</i> -(5,7-dimethoxy[1,2,4]triazolo[1,5- <i>a</i>]pyrimidin-2-yl)-2-methoxy-4-(trifluoromethyl)-3-pyridinesulfonamide
CAS registry number	422556-08-9
End-use product (EP)	GF-1274 Herbicide (7.5% WDG formulation) and GF-1874 Herbicide (0.38 lb/gal OD formulation)

Appendix 2 - Physical and Chemical Properties

Physicochemical Properties of Pyroxsulam.		
Parameter	Value	Reference
Melting point	208.3°C	Product Chemistry Review of XDE-742 Technical
pH	4.06 at 24.4°C (1% wt/wt aqueous solution)	
Density	Relative: 1.62 g/cc at 20°C Bulk: 0.383 g/cc at 22.6°C	
Water solubility (20°C)	0.0164 g/L (pH 4) 3.20 g/L (pH 7)	
Solvent solubility (mg/L at 20°C)	Xylene: 352, Octanol: 730, Heptane: <10 Acetone: 27,900, Methanol: 10,100 Ethyl Acetate: 21,700 1,2 Dichloromethane: 39,400	
Vapor pressure at 20°C	<7.5 x 10 ⁻¹⁰ Pa at 20°C	
Dissociation constant (pK _a)	4.7 between pH 3.9 and 5.5	
Octanol/water partition coefficient Log(K _{ow})	1.08 (pH 4) -1.01 (pH 7)	
UV/visible absorption spectrum	Neutral pH: λ _{max} = 297 nm Molar absorptivity = 8,000	

Appendix 3 - Toxicity Profiles

Acute Toxicity Profile – Pyroxsulam (XDE-742)				
Guideline No.	Study Type	MRID(s)	Results	Toxicity Category
870.1100	Acute oral – rat	46908337 46908538	LD50 > 2000 mg/kg bw	III
870.1200	Acute dermal – rabbit	46908399 46908540	LD50 > 2000 mg/kg bw	III
870.1300	Acute inhalation – rat	47236401 47236402	LC 50 > 5.12 mg/L	IV
870.2400	Acute eye irritation – rabbit	46908343 46908542	Slight conjunctival redness and chemosis, clearing within 72 hours	IV
870.2500	Acute dermal irritation – rabbit	46908345 46908544	Slight erythema up to one hour after patch removal; no lasting erythema or edema	IV
870.2600	Skin sensitization – guinea pig	46908347 46908546	After the challenge dose, intense erythema, swelling, scaling, and severe scaling were observed in all test groups	Positive

Subchronic, Chronic, and Other Toxicity Profile for Pyroxsulam Technical		
Guideline No./Study Type	MRID No. (year) Classification/Doses	Results
870.3050 28-Day oral toxicity (rat)	46908349 (2001) Acceptable/guideline 0, 10, 100, 500, or 1000 mg/kg bw/day	NOAEL = 1000 mg/kg bw/day LOAEL = not observed
870.3100 90-Day oral toxicity (rat)	46908350 (2003) Acceptable/guideline 0, 10, 100, or 1000 mg/kg bw/day	NOAEL = 1000 mg/kg bw/day LOAEL = not observed
870.3100 90-Day oral toxicity (mouse)	46908351 (2003) Acceptable/guideline 0, 10, 100, or 1000 mg/kg bw/day	NOAEL = 1000 mg/kg bw/day LOAEL = not observed
870.3150 90-Day oral toxicity (dog)	46908352 (2003) 46908401 (2002) Acceptable/guideline M: 0, 10.9, 91.3, or 884.1 mg/kg bw/day F: 0, 10.4, 98.6, or 1142.4 mg/kg bw/day	NOAEL = 1000 mg/kg bw/day LOAEL = not observed

Subchronic, Chronic, and Other Toxicity Profile for Pyroxsulam Technical		
Guideline No./Study Type	MRID No. (year) Classification/Doses	Results
870.3200 14-Day dermal toxicity (rat) (dose range-finding study)	46908353 (2004) Acceptable/non-guideline 0 or 1000 mg/kg bw/day, 6 h/day, 5 days/week for 2 weeks	Systemic NOAEL = 1000 mg/kg bw/day Systemic LOAEL = not observed Dermal NOAEL = 1000 mg/kg bw/day Dermal LOAEL = not observed
870.3700a Prenatal developmental toxicity (rat)	46908355 (2005) Acceptable/guideline 0, 100, 300, or 1000 mg/kg bw/day (GD 6-20)	Maternal NOAEL = 1000 mg/kg bw/day LOAEL = not observed Developmental NOAEL = 1000 mg/kg/bw/day Developmental LOAEL = not observed
870.3700b Prenatal developmental toxicity (rabbit, dose range- finding study)	46908415 (2005) Acceptable/non-guideline 0, 30, 100, 300, 600, or 1000 mg/kg bw/day (GD 6-28)	Maternal NOAEL = 600 mg/kg bw/day (HDT) (from range-finding study) Maternal LOAEL = 1000 mg/kg/day, based on severely decreased body weights and food consumption (from range-finding study). This treatment group was terminated early on GD 16-17. Developmental NOAEL = 300 mg/kg bw/day (HDT) Developmental LOAEL = not observed
870.3700b Prenatal developmental toxicity (rabbit)	46908354 (2005) Acceptable/guideline 0, 30, 100, or 300 mg/kg bw/day (GD 6-28)	Maternal NOAEL = 600 mg/kg bw/day (HDT) (from range-finding study) Maternal LOAEL = 1000 mg/kg/day, based on decreased body weights and food consumption (from range-finding study) Developmental NOAEL = 300 mg/kg bw/day (HDT) Developmental LOAEL = not observed
870.3800 Reproduction and fertility effects (rat)	46908404 (2005) 46908403 (2004) Acceptable/guideline 0, 100, 300, or 1000 mg/kg bw/day	Parental/Systemic NOAEL = 1000 mg/kg bw/day Parental/Systemic LOAEL = not observed Offspring NOAEL = 1000 mg/kg bw/day Offspring LOAEL = not observed Reproductive NOAEL = 1000 mg/kg bw/day Reproductive LOAEL = not observed
870.4100b Chronic toxicity (dog)	46908405 (2004) Acceptable/guideline M: 0, 13.2, 93.0, or 619.6 mg/kg bw/day F: 0, 17.1, 88.7, or 589.1 mg/kg bw/day	NOAEL = 619.6/589.1 mg/kg/day, M/F respectively LOAEL = not observed
870.4200 Carcinogenicity (mouse)	46908406 (2005) Acceptable/guideline 0, 10, 100, or 1000 mg/kg bw/day	NOAEL = 100 mg/kg/day. LOAEL = 1000 mg/kg/day, based on increased absolute and relative liver weights and increased incidence of clear cell foci of alteration in hepatocytes in males

Subchronic, Chronic, and Other Toxicity Profile for Pyroxsulam Technical		
Guideline No./Study Type	MRID No. (year) Classification/Doses	Results
		No evidence of carcinogenicity
870.4300 Combined chronic toxicity/carcinogenicity (rat)	46908407 (2005) Acceptable/guideline 0, 10, 100, or 1000 mg/kg bw/day	NOAEL = 1000 mg/kg/day LOAEL = not observed No evidence of carcinogenicity
870.5100 Bacterial gene mutation/mammalian activation gene mutation assay	46908414 (2003) Acceptable/guideline µg/plate (<i>S. typhimurium</i>) g/plate (<i>E. coli</i>)	Negative-No evidence of induced mutant colonies over background in the presence or absence of S9-induced activation
870.5300 Gene mutation at the HGPRT locus in Chinese hamster ovary cells	46908408 (2004) Acceptable/guideline 0, 1.56, 3.125, 6.25, 12.5, 25, 50, 100, or 200 µg/mL	Negative-No evidence of induced mutant colonies over background in the presence or absence of S9-activation up to the limit of compound solubility.
870.5375 Chromosomal aberration assay in rat lymphocytes	46908409 (2004) Acceptable/guideline 0, 1.56, 3.125, 6.25, 12.5, 25, 50, 100, or 200 µg/mL	Negative-No evidence of chromosome aberrations induced over background in the presence or absence of S9-activation up to the limit of compound solubility
870.5395 Mouse bone marrow micronucleus assay	46908410 (2004) Acceptable/guideline 0, 500, 1000, or 2000 mg/kg	Negative-No significant increase in the frequency of micronucleated polychromatic erythrocytes in bone marrow
870.5550 Unscheduled DNA Synthesis	47022001 (2006) Acceptable/guideline 0, 1000, or 2000 mg/kg bw	No evidence that unscheduled DNA synthesis was induced at concentrations up to 2000 mg/kg bw.
870.6200b Subchronic (12-month) neurotoxicity screening battery	46908411 (2005) Acceptable/non-guideline 0, 10, 100, or 1000 mg/kg bw/day	NOAEL = 1000 mg/kg bw/day LOAEL = not observed
870.7485 Metabolism and pharmacokinetics (rat)	46908412 (2005) Acceptable/guideline 10 or 1000 mg/kg bw	XDE-742 was rapidly absorbed with peak absorption occurring between 6-30 minutes post-dosing. 85-90% of the parent was unchanged in urine and feces 24 hours post-dosing. One major metabolite accounting for 4-16% of the administered dose was 2'-demethyl-XDE-742.
870.7485 Metabolism and pharmacokinetics (mouse)	46908413 (2006) Acceptable/guideline 10, 100, or 1000 mg/kg	Radiolabeled XDE-742 was quickly absorbed at all doses, with less efficient absorption occurring as the dose increased. XDE-742 was rapidly excreted via the urine and feces, with the majority of the radioactive dose being eliminated 12-24 hours post-dosing.

Appendix 4 - Ecological Effects Data

Guideline	MRID	Study Title	Issues	Study Classification
71-1	469084-16	XDE-742 / BAS 770 H – Avian Single-Dose Oral LD ₅₀ on the Bobwhite Quail (<i>Colinus virginianus</i>)	None	(Pending)
71-1	469084-17	XDE-742 / BAS 770 H – Avian Single-Dose Oral LD ₅₀ on the Mallard Duck (<i>Anas platyrhynchos</i>).	None	(Pending)
850.2200 (71-2b)	469084-18	XDE-742 – Dietary Toxicity Test with the Mallard Duck (<i>Anas platyrhynchos</i>)	None	(Pending)
850.2200 (71-2a)	469084-19	XDE-742 – Dietary Toxicity Test with the Northern Bobwhite Quail (<i>Colinus virginianus</i>).	None	(Pending)
850.2300 (71-4b)	469084-20	XDE-742: Reproductive Toxicity Test with the Mallard Duck (<i>Anas platyrhynchos</i>).	None	(Pending)
850.2300 (71-4a)	469084-21	XDE-742: Reproductive Toxicity Test with the Northern Bobwhite Quail (<i>Colinus virginianus</i>)	None	(Pending)
72-1	469084-22	XDE-742/BAS 770 H: Acute Toxicity Study On The Fathead Minnow (<i>Pimephales promelas</i>) In A Static System Over 96 Hours	None	(Pending)
72-1	469084-23	XDE-742/BAS 770 H: Acute Toxicity Study On The Fathead Minnow (<i>Oncorhynchus mykiss</i>) In A Static System Over 96 Hours	None	(Pending)
72-1	469084-24	7-OH Metabolite of XDE-742- Acute Toxicity to Rainbow Trout (<i>Oncorhynchus mykiss</i>) Under Static Conditions	None	(Pending)
72-1	469084-25	ASTA Metabolite of XDE-742: An Acute Toxicity Study with the Rainbow Trout, <i>Oncorhynchus mykiss</i>	None	(Pending)
72-2	469084-26	7-OH Metabolite of XDE-742- Acute Toxicity to Water Fleas, <i>Daphnia magna</i> , Under Static Conditions	None	(Pending)
72-2	469084-27	ASTA Metabolite of XDE-742: An Acute Toxicity Study with the Daphnid, <i>Daphnia magna</i>	None	(Pending)
72-2	469084-28	XDE-742: An Acute Toxicity Study with the Daphnid, <i>Daphnia magna</i>	None	(Pending)
72-4a	469084-30; 469086-26 (registrant -prepared DER)	XDE-742: Toxicity to the Early-Life Stages of the Fathead Minnow, <i>Pimephales promelas</i> .	None	(Pending)
72-4b	469084-29	XDE-742: A 21-Day Chronic Toxicity Study with the Daphnid (<i>Daphnia magna</i>)	None	(Pending)

Guideline	MRID	Study Title	Issues	Study Classification
123-2	469084-31	XDE-742-Growth Inhibition Test with Freshwater Blue-Green Alga (<i>Anabaena flos-aquae</i>)	Test material was detected at a concentration above the LOQ in the negative control at test termination; however, this was believed to be an error during analytical sampling.	(Pending)
123-2	469084-32	XDE-742-Growth Inhibition Test with Freshwater Diatom (<i>Navicula pelliculosa</i>)	None	(Pending)
850.4400 (123-2)	469084-33	7-OH Metabolite of XDE-742- Toxicity to Duckweed, <i>Lemna gibba</i>	None	(Pending)
850.4400 (123-2)	469084-34	ADTP Metabolite of XDE-742- Toxicity to Duckweed, <i>Lemna gibba</i>	None	(Pending)
850.4400 (123-2)	469084-35	5,7-Di-OH Metabolite of XDE-742- Toxicity to Duckweed, <i>Lemna gibba</i>	None	(Pending)
850.4400 (123-2)	469084-36	5-OH Metabolite of XDE-742- Toxicity to Duckweed, <i>Lemna gibba</i>	None	(Pending)
850.4400 (123-2)	469084-37	6-Cl-7-OH Metabolite of XDE-742- Toxicity to Duckweed, <i>Lemna gibba</i>	None	(Pending)
850.4400 (123-2)	469084-38	XDE-742 Sulfinic Acid Metabolite- Toxicity to Duckweed, <i>Lemna gibba</i>	None	(Pending)
850.4225 (123-1b)	469084-39	Effects of GF-1674 on Seedling Emergence and Seedling Growth on Non-Target Terrestrial Plants (Tier II)-2005	None	(Pending)
850.4250 (123-1a)	469084-40	Effects of GF-1674 on the Vegetative Vigor on Non-Target Terrestrial Plants (Tier II)- 2005	None	(Pending)
123-2	469084-41	XDE-742: Growth Inhibition Test with the Saltwater Diatom <i>Skeletonema costatum</i>	None	(Pending)
850.4400 (123-2)	469084-42	XDE-742: Growth Inhibition Test with the Aquatic Plant, <i>Lemna gibba</i>	None	(Pending)
123-2	469084-43	XDE-742 Sulfinic Acid Metabolite- Acute Toxicity to the Freshwater Green Alga, <i>Pseudokirchneriella subcapitata</i>	None	(Pending)
850.4400 (123-2)	469084-44	Inhibition of Growth of the Aquatic Plant Duckweed, <i>Lemna gibba</i> , Following One and Three Day Exposures to XDE-742	None	(Pending)
123-2	469084-45	XDE-742: Growth Inhibition Test with the Freshwater Green Alga, <i>Pseudokirchneriella subcapitata</i>	None	(Pending)
123-2	469084-46	ADTP Metabolite of XDE-742- Acute Toxicity to the Freshwater Green Alga, <i>Pseudokirchneriella subcapitata</i>	None	(Pending)

Guideline	MRID	Study Title	Issues	Study Classification
123-2	469084-47	5-OH Metabolite of XDE-742- Acute Toxicity to the Freshwater Green Alga, <i>Pseudokirchneriella subcapitata</i>	None	(Pending)
123-2	469084-48	6-Cl-7-OH Metabolite of XDE-742- Acute Toxicity to the Freshwater Green Alga, <i>Pseudokirchneriella subcapitata</i>	None	(Pending)
123-2	469084-49	5,7-Di-OH Metabolite of XDE-742- Acute Toxicity to the Freshwater Green Alga, <i>Pseudokirchneriella subcapitata</i>	None	(Pending)
123-2	469084-50	7-OH Metabolite of XDE-742- Acute Toxicity to the Freshwater Green Alga, <i>Pseudokirchneriella subcapitata</i>	None	(Pending)
123-2	469084-51	ASTA Metabolite of XDE-742: Growth Inhibition Test with the Freshwater Green Alga, <i>Pseudokirchneriella subcapitata</i>	None	(Pending)
850.4400 (123-2)	469084-52	ASTA Metabolite of XDE-742: Growth Inhibition Test with the Aquatic Plant Duckweed, <i>Lemna gibba</i>	None	(Pending)
OECD 207	469085-04	5-OH Metabolite of XDE-742: An Acute Toxicity Study with the Earthworm in an Artificial Soil Substrate	None	(Pending)
OECD 207	469085-05	XR-742: 14 Day Soil Exposure Acute Toxicity to the Earthworm, <i>Eisenia foetida</i>	None	(Pending)
OECD 207	469085-06	6-Cl-7-OH Metabolite of XDE-742: An Acute Toxicity Study with the Earthworm in an Artificial Soil Substrate	None	(Pending)
OECD 207	469085-07	7-OH Metabolite of XDE-742: An Acute Toxicity Study with the Earthworm in an Artificial Soil Substrate	None	(Pending)
OECD 213 & 214	469085-08	Effects of XDE-742/ BAS770H (<i>Acute Contact and Oral</i>) on Honey Bees <i>Apis mellifera L.</i> In the Laboratory	None	(Pending)
OECD 219 (Non-G)	469085-09	7-OH Metabolite of XDE-742 – Chironomid Toxicity Test with Midge (<i>Chironomus riparius</i>) Under Static Conditions using Spiked Water.	None	(Pending)
OECD 219 (Non-G)	469085-10	XDE-742: 28-Day Chronic Toxicity Study with the Midge, <i>Chironomus riparius</i> , Using Spiked Water in a Sediment-Water Exposure System.	Midge larvae were added to each vessel on the same day the vessels were spiked, and aeration was stopped for approx. 3 hours during and thereafter.	(Pending)
OECD 222 (Non-G)	469085-11	6-Cl-7-OH Metabolite of XDE-742: A Reproduction Study with the Earthworm in an Artificial Soil Substrate	None	(Pending)

Guideline	MRID	Study Title	Issues	Study Classification
None	469085-12	Herbicidal Activity of XDE-742 Soil Metabolites on Weeds and Crops in a Discovery Weed Management Level 3 Postemergence Screen	No quantitative data were provided on survival, plant height or dry weight. Therefore, this study cannot be considered for a traditional review as it only provides qualitative data on the injury to the plants from exposure to the test material and associated metabolites.	(Pending)

Appendix 5 - Environmental Fate Data

Guideline	Study Title	MRID	Issues	Study Classification
161-1	Hydrolysis	46908326	None	Acceptable
161-2	Aqueous photolysis	MRID pending (modifies 46908327)	None	Acceptable
161-3	Soil photolysis	46908328	None	Acceptable
161-4	Air photolysis	No study	Study not required.	--
162-1	Aerobic soil metabolism	47202701	None	Acceptable
		46908329 46908335 46908330	Multiple solvent systems were not employed in a reasonable extraction attempt; non-extractable [¹⁴ C]residues were as high as 94% or unmeasured.	Supplemental Unacceptable Supplemental
162-2	Anaerobic soil metabolism	No study	Study not submitted (apparent data gap).	--
162-3	Anaerobic aquatic metabolism	46908331	Anaerobic conditions were not assured; multiple solvent systems were not employed in a reasonable extraction attempt. This study does not adequately fulfill the §162-3 data requirement.	Supplemental
162-4	Aerobic aquatic metabolism	46908336	Multiple solvent systems were not employed in a reasonable extraction attempt; non-extractable [¹⁴ C]residues were as high as 73%. This study does not adequately fulfill the §162-4 data requirement.	Supplemental

Guideline	Study Title	MRID	Issues	Study Classification
163-1	Batch equilibrium/ aged leaching	47159601 (modifies 46908332)	None	Acceptable
		46908333	Conducted with six transformation products of pyroxsulam at only one concentration.	Supplemental
163-2	Lab volatility	No study	Study not required.	--
164-1	Terrestrial field dissipation	46908334	Samples were stored as long as 588 days. An ongoing storage stability study of XDE-742 and its transformation products has only confirmed stability for XDE-742, 5-OH-XDE-742, and 6-Cl-7-OH-XDE-742 in frozen soil samples for six months (MRID 46908317). 7-OH-XDE-742 displayed reduced recovery over six months in a loam soil. This study may be upgraded to fulfill the §164-1 data requirement.	Supplemental
164-2	Aquatic field dissipation	No study	Study not required.	--
165-4	Fish bioaccumulation	No study	Study not required due to low K_{ow} .	--

Appendix 6 - Bibliography

71-1 Avian Single Dose Oral Toxicity

MRID	Citation Reference
46908416	Zok, S. (2003) XDE-742/BAS 770 H - Avian Single-Dose Oral LD50 on the Bobwhite Quail (<i>Colinus virginianus</i>). Project Number: 11W0298/035027, 01Y0298/038014. Unpublished study prepared by BASF Aktiengesellschaft. 47 p.
46908417	Zok, S. (2003) XDE-742/BAS 770 H - Avian Single-Dose Oral LD50 on the Mallard Duck (<i>Anas platyrhynchos</i>). Project Number: 13W0298/035028, 01Y0298/038014. Unpublished study prepared by BASF Aktiengesellschaft. 49 p.
46908612	Mercer, J. (2006) XDE-742/ BAS 770 H - Avian Single-Dose LD50 on the Bobwhite Quail (<i>Colinus viginianus</i>). Project Number: 11W0298/035027/SPT, 035027/SPT. Unpublished study prepared by BASF Aktiengesellschaft, Labor fuer Oekotoxicologie. 12 p.
46908613	Mercer, J. (2006) XDE-742/ BAS 770 H - Avian Single-Dose LD50 on the Mallard Duck (<i>Anus platyrhynchos</i>). Project Number: 13W0298/035028/SPT, 035028/SPT. Unpublished study prepared by BASF Aktiengesellschaft, Labor fuer Oekotoxicologie. 13 p.

71-4 Avian Reproduction

MRID	Citation Reference
46908420	Stafford, J. (2005) XDE-742: Reproductive Toxicity Test with the Mallard Duck (<i>Anas platyrhynchos</i>). Project Number: 12550/4116, 040130. Unpublished study prepared by Springborn Smithers Laboratories. 152 p.
46908421	Stafford, J. (2005) XDE-742: Reproductive Toxicity Test with the Northern Bobwhite Quail (<i>Colinus virginianus</i>). Project Number: 12550/4113, 040032. Unpublished study prepared by Springborn Smithers Laboratories. 190 p.
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72-1 Acute Toxicity to Freshwater Fish

MRID	Citation Reference
46908422	Zok, S. (2003) XDE-742/BAS 770 H: Acute Toxicity Study on the Fathead Minnow (<i>Pimephales promelas</i>) in a Static System Over 96 Hours. Project Number: 15F0298/035032, 156304/1. Unpublished study prepared by BASF Aktiengesellschaft. 35 p.
46908423	Zok, S. (2003) XDE-742/BAS 770 H: Acute Toxicity Study on the Rainbow Trout (<i>Oncorhynchus mykiss</i>) in a Static System Over 96 Hours. Project Number: 12F0298/035031, 156301/1.

Unpublished study prepared by BASF Aktiengesellschaft. 35 p.

- 46908424 Sayers, L. (2006) 7-OH Metabolite of XDE-742 - Acute Toxicity to Rainbow Trout (*Oncorhynchus mykiss*) Under Static Conditions. Project Number: 12550/6411, 050165. Unpublished study prepared by Springborn Smithers Laboratories. 51 p.
- 46908425 Marino, T.; Arnold, B.; Sushynski, J.; et. al. (2006) ATSA Metabolite of XDE-742: An Acute Toxicity Study with the Rainbow Trout, *Oncorhynchus mykiss*. Project Number: 061010. Unpublished study prepared by Dow Chemical, USA. 37 p.
- 46908618 Mercer, J. (2006) XDE-742/ BAS 770 H - Acute Toxicity on the Fathead minnow (*Pimephales promelas*) in a Static System Over 96 Hours. Project Number: 15F0298/035032/SPT, 035032/SPT. Unpublished study prepared by BASF Aktiengesellschaft, Labor fuer Oekotoxicologie. 13 p.
- 46908619 Mercer, J. (2006) XDE-742/ BAS 770 H - Acute Toxicity on the Rainbow Trout (*Oncorhynchus mykiss*) in a Static System Over 96 Hours. Project Number: 12F0298/035031/SPT, 035031/SPT. Unpublished study prepared by BASF Aktiengesellschaft, Labor fuer Oekotoxicologie. 13 p.
- 46908620 Sayers, L. (2006) Study Profile Template (SPT) for: 7-OH Metabolite of XDE-742- Acute Toxicity to Rainbow Trout (*Oncorhynchus mykiss*) Under Static Conditions. Project Number: 12550/6411/SPT, 050165/SPT. Unpublished study prepared by Springborn Smithers Laboratories. 18 p.
- 46908621 Marino, T. (2006) Study Profile Template (SPT) for ATSA Metabolite of XDE-742: An Acute Toxicity Study with the Rainbow Trout, *Oncorhynchus mykiss*. Project Number: 061010/SPT. Unpublished study prepared by Dow Chemical Co. 15 p.

72-2 Acute Toxicity to Freshwater Invertebrates

MRID	Citation Reference
46908426	Sayers, L. (2006) 7-OH Metabolite of XDE-742 - Acute Toxicity to Water Fleas, <i>Daphnia magna</i> , Under Static Conditions. Project Number: 12550/6410, 050164. Unpublished study prepared by Springborn Smithers Laboratories. 55 p.
46908427	Marino, T.; Arnold, B.; Najjar, J.; et. al. (2006) ATSA Metabolite of XDE-742: An Acute Toxicity Study with the Daphnid, <i>Daphnia magna</i> . Project Number: 061005. Unpublished study prepared by: Dow Chemical, USA. 35 p.
46908428	Marino, T.; McClymont, E.; Najjar, J. (2004) XDE-742: An Acute Toxicity Study with the Daphnid, <i>Daphnia magna</i> . Project Number: 041022. Unpublished study prepared by Dow Chemical, USA. 37 p.
46908622	Sayers, L. (2006) 7-OH Metabolite of XDE-742 - Acute Toxicity to Water Fleas, <i>Daphnia magna</i> , Under Static Conditions. Project Number: 12550/6410/SPT, 050164/SPT. Unpublished study prepared by Springborn Smithers Laboratories. 14 p.
46908623	Marino, T. (2006) Study Profile Template (SPT) for ATSA Metabolite of XDE-742: An Acute Toxicity Study with the Daphnid, <i>Daphnia magna</i> . Project Number: 061005/SPT. Unpublished study prepared by Dow Chemical Co. 14 p.
46908624	Marino, T. (2005) Study Profile Template (SPT) for XDE-742: An Acute Toxicity Study with the Daphnid, <i>Daphnia magna</i> . Project Number: 041022/SPT. Unpublished study prepared by Dow

Chemical Co. 14 p.

72-4 Fish Early Life Stage/Aquatic Invertebrate Life Cycle Study

MRID	Citation Reference
46908429	Marino, T.; McClymont, E.; Najjar, J. (2005) XDE-742: A 21-Day Chronic Toxicity Study with Daphnid, <i>Daphnia magna</i> . Project Number: 041023. Unpublished study prepared by Dow Chemical, USA. 55 p.
46908430	Marino, T.; Hales, C.; McClymont, E.; et. al. (2005) XDE-742: Toxicity to the Early-Life Stages of the Fathead Minnow, <i>Pimephales promelas</i> . Project Number: 051007. Unpublished study prepared by Dow Chemical, USA. 62 p.
46908625	Marino, T. (2005) Study Profile Template (SPT) for XDE-742: A 21-Day Chronic Toxicity Study with the Daphnid, <i>Daphnia magna</i> . Project Number: 041023/SPT. Unpublished study prepared by Dow Chemical Co. 17 p.
46908626	Marino, T. (2005) Study Profile Template (SPT) for XDE-742: Toxicity to the Early Life Stages of the Fathead Minnow, <i>Pimephales promelas</i> . Project Number: 051007/SPT. Unpublished study prepared by Dow Chemical Co. 22 p.

81-3 Acute inhalation toxicity in rats

MRID	Citation Reference
47237001	Fonseca, D.; Stewart, M.; Hughes, P.; et al. (2007) Dow Agrosiences' Response to Acute Inhalation Toxicity NAFTA Review of XDE-742 (Pyroxsulam), GF-1674 and GF-1274 (PMRA 4.2.3 / EPA 81-3 / APVMA 3-4.2). Project Number: DF/09182007, 070290, 21954. Unpublished study prepared by Dow Agrosiences LLC. 119 p.

96-1

MRID	Citation Reference
46908310	Robaugh, D.; Pinkerton, B. (2006) Independent Laboratory Validation of XDE-742: Assessment and Validation of the European Multi-Residue Enforcement Method(s) for the Determination of XDE-742 in Plant Material, in Foodstuffs of Animal Origin, in Soil, and in Body Fluids. Project Number: 050045, 1612. Unpublished study prepared by Pyxant Labs Inc. 92 p.
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46908314	Class, T. (2005) (Inert Ingredient): Independent Laboratory Validation of Analytical Method ETL M 312 for the Determination of (Inert Ingredient) and its Acid Metabolite in Soil. Project Number:

122-2 Aquatic plant growth

MRID	Citation Reference
46908431	Hoberg, J. (2005) XDE-742: Growth Inhibition Test with Freshwater Blue-Green Alga (<i>Anabaena flos-aquae</i>). Project Number: 12550/6366, 050284. Unpublished study prepared by Springborn Smithers Laboratories. 69 p.
46908432	Hoberg, J. (2005) XDE-742 - Growth Inhibition Test with Freshwater Diatom (<i>Navicula pelliculosa</i>). Project Number: 12550/6367, 050283. Unpublished study prepared by Springborn Smithers Laboratories. 68 p.
46908647	Hancock, G. (2006) Study Profile Template (SPT) for ATSA Metabolite of XDE-742: Growth Inhibition Test with the Aquatic Plant Duckweed: <i>Lemna gibba</i> . Project Number: 061006/SPT. Unpublished study prepared by Dow Chemical Co. 16 p.

123-2 Aquatic plant growth

MRID	Citation Reference
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46908441	Hancock, G.; Hales, C.; McClymont, E.; et. al. (2005) XDE-742: Growth Inhibition Test with the Saltwater Diatom, <i>Skeletonema costatum</i> . Project Number: 051039. Unpublished study prepared by Dow Chemical, USA. 47 p.
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46908443	Hoberg, J. (2005) XDE-742 Sulfonic Acid Metabolite - Acute Toxicity to the Freshwater Green Alga, <i>Pseudokirchneriella subcapitata</i> . Project Number: 12550/6398, 050110. Unpublished study prepared by Springborn Smithers Laboratories. 67 p.
46908444	Hancock, G.; Sushyski, J.; Najar, J. (2005) Inhibition of Growth of the Aquatic Plant Duckweed, <i>Lemna gibba</i> , Following One and Three Day Exposures to XDE-742. Project Number: 051169. Unpublished study prepared by Dow Chemical, USA. 57 p.
46908445	Hancock, G.; McClymont, E.; Staley, J. (2004) XDE-742: Growth Inhibition Test with the Freshwater Green Alga, <i>Pseudokirchneriella subcapitata</i> . Project Number: 041054. Unpublished study prepared by Dow Chemical, USA. 46 p.
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- 46908448 Hoberg, J. (2006) 6-Cl-7-OH Metabolite of XDE-742 - Acute Toxicity to the Freshwater Green Alga, *Pseudokirchneriella subcapitata*. Project Number: 12550/6402, 050112. Unpublished study prepared by Springborn Smithers Laboratories. 67 p.
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- 46908450 Hoberg, J. (2005) 7-OH Metabolite of XDE-742 - Acute Toxicity to the Freshwater Green Alga, *Pseudokirchneriella subcapitata*. Project Number: 12550/6408, 050108. Unpublished study prepared by Springborn Smithers Laboratories. 70 p.
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161-1 Hydrolysis

MRID	Citation Reference
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161-2 Photodegradation-water

MRID	Citation Reference
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46908528	Byrne, S. (2006) Study Profile Template for Aqueous Photolysis of XDE-742 in pH 7 Buffer Using a Xenon Lamp. Project Number: 040002/SPT. Unpublished study prepared by Dow AgroSciences LLC. 23 p.
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161-3 Photodegradation-soil

MRID**Citation Reference**

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162-1 Aerobic soil metabolism**MRID****Citation Reference**

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162-2 Anaerobic soil metabolism**MRID****Citation Reference**

46908331	Linder, S.; Balcer, J.; Rutherford, L. (2005) Anaerobic Degradation of XDE-742 on One European SOil. Project Number: 030051. Unpublished study prepared by Dow AgroScience LLC. 100 p.
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162-4 Aerobic aquatic metab.

MRID**Citation Reference**

46908537 Yoder, R. (2006) Study Profile Template for Aerobic Aquatic Degradation of XDE-742 in Two European Sediment and Pond Water Systems. Project Number: 030076/SPT. Unpublished study prepared by Dow AgroSciences LLC. 26 p.

163-1 Leach/adsorp/desorption**MRID****Citation Reference**

46908332 Smith, J. (2004) Soil Batch Equilibrium Adsorption/Desorption of (14 Carbon)-XDE-742. Project Number: 030069. Unpublished study prepared by Dow AgroSciences LLC. 136 p.

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164-1 Terrestrial field dissipation**MRID****Citation Reference**

46908334 Roberts, D.; Coukell, G.; Schelle, G.; et. al. (2006) Terrestrial Field Dissipation of XDE-742 Herbicide and (Inert Ingredient) Safener in Canada. Project Number: 040037. Unpublished study prepared by ICMS, Inc. 357 p.

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830.1000 Background for product properties test guidelines**MRID****Citation Reference**

46908514 Madsen, S. (2006) Study Profile Template for Product Chemistry Data XDE-742 Technical, a Technical Grade Active Ingredient. Project Number: NAFST/06/096. Unpublished study prepared by Dow AgroSciences LLC. 77 p.

830.1550 Product Identity and composition

MRID	Citation Reference
46908301	Madsen, S.; Hamilton, C. (2006) Group A - Product Identity and Composition, Description of Materials Used to Produce the Product, Description of Production Process, Disucssion of Formation of Impurities, Preliminary Analysis, Certified Limits, and Enforcement Analytical Method for XDE-742 Technical. Project Number: NAFST/06/094, DECO/ML/AL/MD/2005/002453. Unpublished study prepared by Dow AgroSciences LLC. 533 p.
46908302	Keeney, N. (2006) Group A - Product Identity, Composition and Analysis for GF-1674, an Oil Dispersion End-Use Product Containing XDE-742 and (Inert Ingredient). Project Number: NAFST/06/101, DAS/AM/05/032. Unpublished study prepared by Dow AgroSciences LLC and Dow Agrosiences (New Zealand) Ltd. 115 p.
46908514	Madsen, S. (2006) Study Profile Template for Product Chemistry Data XDE-742 Technical, a Technical Grade Active Ingredient. Project Number: NAFST/06/096. Unpublished study prepared by Dow AgroSciences LLC. 77 p.
47158701	Quin, K. (2007) Group A: Product Identity, Composition and Analysis for GF-1847; an End Use Product Containing Pyroxsulam and Cloquintocet-mexyl. Project Number: NAFST/07/060, DAS/AM/07/002. Unpublished study prepared by Dow AgroSciences LLC. 97 p.
47166901	Qin, K.; Stock, M. (2007) Group A- Product Identity, Composition and Analysis for GF-1848, A Liquid End Use Product Containing Pyroxsulam, Florasulam, (Inert Ingredient) and Fluroxypyr-meptyl. Project Number: NAFST/07/064. Unpublished study prepared by Dow AgroSciences, LLC. 133 p.

830.1600 Description of materials used to produce the product

MRID	Citation Reference
46908301	Madsen, S.; Hamilton, C. (2006) Group A - Product Identity and Composition, Description of Materials Used to Produce the Product, Description of Production Process, Disucssion of Formation of Impurities, Preliminary Analysis, Certified Limits, and Enforcement Analytical Method for XDE-742 Technical. Project Number: NAFST/06/094, DECO/ML/AL/MD/2005/002453. Unpublished study prepared by Dow AgroSciences LLC. 533 p.
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830.1620 Description of production process

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830.1650 Description of formulation process

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830.1670 Discussion of formation of impurities

MRID	Citation Reference
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p.

- 46908302 Keeney, N. (2006) Group A - Product Identity, Composition and Analysis for GF-1674, an Oil Dispersion End-Use Product Containing XDE-742 and (Inert Ingredient). Project Number: NAFST/06/101, DAS/AM/05/032. Unpublished study prepared by Dow AgroSciences LLC and Dow Agrosciences (New Zealand) Ltd. 115 p.
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- 47166901 Qin, K.; Stock, M. (2007) Group A- Product Identity, Composition and Analysis for GF-1848, A Liquid End Use Product Containing Pyroxsulam, Florasulam, (Inert Ingredient) and Fluroxypyr-meptyl. Project Number: NAFST/07/064. Unpublished study prepared by Dow AgroSciences, LLC. 133 p.

830.1700 Preliminary analysis

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46908301	Madsen, S.; Hamilton, C. (2006) Group A - Product Identity and Composition, Description of Materials Used to Produce the Product, Description of Production Process, Disucssion of Formation of Impurities, Preliminary Analysis, Certified Limits, and Enforcement Analytical Method for XDE-742 Technical. Project Number: NAFST/06/094, DECO/ML/AL/MD/2005/002453. Unpublished study prepared by Dow AgroSciences LLC. 533 p.
46908514	Madsen, S. (2006) Study Profile Template for Product Chemistry Data XDE-742 Technical, a Technical Grade Active Ingredient. Project Number: NAFST/06/096. Unpublished study prepared by Dow AgroSciences LLC. 77 p.

830.1750 Certified limits

MRID	Citation Reference
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830.1800 Enforcement analytical method

MRID	Citation Reference
46908301	Madsen, S.; Hamilton, C. (2006) Group A - Product Identity and Composition, Description of Materials Used to Produce the Product, Description of Production Process, Disucssion of Formation of Impurities, Preliminary Analysis, Certified Limits, and Enforcement Analytical Method for XDE-742 Technical. Project Number: NAFST/06/094, DECO/ML/AL/MD/2005/002453. Unpublished study prepared by Dow AgroSciences LLC. 533 p.
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46908515	Speak T. (2006) Study Profile Template for End Use Product Chemistry Data of GF-1674 Containing 30g/L XDE-742 Active Ingredient. Project Number: 06/944. Unpublished study prepared by Dow Agrosciences (New Zealand) Ltd. 28 p.
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830.6302 Color

MRID	Citation Reference
46908303	Madsen, S. (2006) Group B: Physical and Chemical Properties of XDE-742. Project Number:

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- 46908304 Tidswell, J., Speak, T. (2006) Physical and Chemical Properties of GF-1674 (30g/L XDE-742 Active Ingredient & 90g/L Cloquintocet-Mexyl as Safener) OD Formulation. Project Number: 05/805/G. Unpublished study prepared by Dow Agrosciences (New Zealand) Ltd. 25 p.
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- 47166902 Stock, M. (2007) Group B- Physical/Chemical Properties for GF-1848, A Liquid End Use Product Containing Pyroxsulam, Florasulam, (Inert Ingredient) and Fluroxypyr-meptyl. Project Number: NAFST/07/054. Unpublished study prepared by Dow AgroSciences, LLC. 5 p.

830.6303 Physical state

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46908303	Madsen, S. (2006) Group B: Physical and Chemical Properties of XDE-742. Project Number: NAFST/06/086, NAFST814, 2003/1016299. Unpublished study prepared by Dow AgroSciences LLC, Dow Agrosciences (New Zealand) Ltd. and Huntingdon Life Sciences, Ltd. 337 p.
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830.6304 Odor

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830.6313 Stability to sunlight, normal and elevated temperatures, metals, and metal ions

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830.6314 Oxidizing or reducing action

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830.6315 Flammability

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830.6316 Explodability

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NAFST/07/067. Unpublished study prepared by Dow AgroSciences LLC. 5 p.

830.6317 Storage stability of product

MRID	Citation Reference
46908304	Tidswell, J., Speak, T. (2006) Physical and Chemical Properties of GF-1674 (30g/L XDE-742 Active Ingredient & 90g/L Cloquintocet-Mexyl as Safener) OD Formulation. Project Number: 05/805/G. Unpublished study prepared by Dow Agrosciences (New Zealand) Ltd. 25 p.
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830.6320 Corrosion characteristics

MRID	Citation Reference
46908304	Tidswell, J., Speak, T. (2006) Physical and Chemical Properties of GF-1674 (30g/L XDE-742 Active Ingredient & 90g/L Cloquintocet-Mexyl as Safener) OD Formulation. Project Number: 05/805/G. Unpublished study prepared by Dow Agrosciences (New Zealand) Ltd. 25 p.
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830.7000 pH of water solutions or suspensions

MRID	Citation Reference
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Number: NAFST/07/054. Unpublished study prepared by Dow AgroSciences, LLC. 5 p.

830.7050 UV/Visible absorption

MRID	Citation Reference
46908303	Madsen, S. (2006) Group B: Physical and Chemical Properties of XDE-742. Project Number: NAFST/06/086, NAFST814, 2003/1016299. Unpublished study prepared by Dow AgroSciences LLC, Dow Agrosciences (New Zealand) Ltd. and Huntingdon Life Sciences, Ltd. 337 p.
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830.7100 Viscosity

MRID	Citation Reference
46908304	Tidswell, J., Speak, T. (2006) Physical and Chemical Properties of GF-1674 (30g/L XDE-742 Active Ingredient & 90g/L Cloquintocet-Mexyl as Safener) OD Formulation. Project Number: 05/805/G. Unpublished study prepared by Dow Agrosciences (New Zealand) Ltd. 25 p.
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830.7200 Melting point/melting range

MRID	Citation Reference
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830.7220 Boiling point/boiling range

MRID**Citation Reference**

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46908514	Madsen, S. (2006) Study Profile Template for Product Chemistry Data XDE-742 Technical, a Technical Grade Active Ingredient. Project Number: NAFST/06/096. Unpublished study prepared by Dow AgroSciences LLC. 77 p.

830.7300 Density/relative density**MRID****Citation Reference**

46908303	Madsen, S. (2006) Group B: Physical and Chemical Properties of XDE-742. Project Number: NAFST/06/086, NAFST814, 2003/1016299. Unpublished study prepared by Dow AgroSciences LLC, Dow Agrosciences (New Zealand) Ltd. and Huntingdon Life Sciences, Ltd. 337 p.
46908304	Tidswell, J., Speak, T. (2006) Physical and Chemical Properties of GF-1674 (30g/L XDE-742 Active Ingredient & 90g/L Cloquintocet-Mexyl as Safener) OD Formulation. Project Number: 05/805/G. Unpublished study prepared by Dow Agrosciences (New Zealand) Ltd. 25 p.
46908514	Madsen, S. (2006) Study Profile Template for Product Chemistry Data XDE-742 Technical, a Technical Grade Active Ingredient. Project Number: NAFST/06/096. Unpublished study prepared by Dow AgroSciences LLC. 77 p.
46908515	Speak T. (2006) Study Profile Template for End Use Product Chemistry Data of GF-1674 Containing 30g/L XDE-742 Active Ingredient. Project Number: 06/944. Unpublished study prepared by Dow Agrosciences (New Zealand) Ltd. 28 p.
47158702	Stock, M. (2007) Group B: Physical/Chemical Properties for GF-1847, A Liquid End Use Product Containing Pyroxsulam and Cloquintocet-mexyl Safener. Project Number: NAFST/07/067. Unpublished study prepared by Dow AgroSciences LLC. 5 p.
47166902	Stock, M. (2007) Group B- Physical/Chemical Properties for GF-1848, A Liquid End Use Product Containing Pyroxsulam, Florasulam, (Inert Ingredient) and Fluroxypyr-meptyl. Project Number: NAFST/07/054. Unpublished study prepared by Dow AgroSciences, LLC. 5 p.

830.7370 Dissociation constant in water**MRID****Citation Reference**

46908303	Madsen, S. (2006) Group B: Physical and Chemical Properties of XDE-742. Project Number: NAFST/06/086, NAFST814, 2003/1016299. Unpublished study prepared by Dow AgroSciences LLC, Dow Agrosciences (New Zealand) Ltd. and Huntingdon Life Sciences, Ltd. 337 p.
46908514	Madsen, S. (2006) Study Profile Template for Product Chemistry Data XDE-742 Technical, a Technical Grade Active Ingredient. Project Number: NAFST/06/096. Unpublished study prepared by Dow AgroSciences LLC. 77 p.

830.7550 Partition coefficient (n-octanol/water), shake flask method

MRID	Citation Reference
46908303	Madsen, S. (2006) Group B: Physical and Chemical Properties of XDE-742. Project Number: NAFST/06/086, NAFST814, 2003/1016299. Unpublished study prepared by Dow AgroSciences LLC, Dow Agrosciences (New Zealand) Ltd. and Huntingdon Life Sciences, Ltd. 337 p.
46908514	Madsen, S. (2006) Study Profile Template for Product Chemistry Data XDE-742 Technical, a Technical Grade Active Ingredient. Project Number: NAFST/06/096. Unpublished study prepared by Dow AgroSciences LLC. 77 p.

830.7840 Water solubility: Column elution method, shake flask method

MRID	Citation Reference
46908303	Madsen, S. (2006) Group B: Physical and Chemical Properties of XDE-742. Project Number: NAFST/06/086, NAFST814, 2003/1016299. Unpublished study prepared by Dow AgroSciences LLC, Dow Agrosciences (New Zealand) Ltd. and Huntingdon Life Sciences, Ltd. 337 p.
46908514	Madsen, S. (2006) Study Profile Template for Product Chemistry Data XDE-742 Technical, a Technical Grade Active Ingredient. Project Number: NAFST/06/096. Unpublished study prepared by Dow AgroSciences LLC. 77 p.

830.7860 Water solubility, generator column method

MRID	Citation Reference
46908514	Madsen, S. (2006) Study Profile Template for Product Chemistry Data XDE-742 Technical, a Technical Grade Active Ingredient. Project Number: NAFST/06/096. Unpublished study prepared by Dow AgroSciences LLC. 77 p.

830.7950 Vapor pressure

MRID	Citation Reference
46908303	Madsen, S. (2006) Group B: Physical and Chemical Properties of XDE-742. Project Number: NAFST/06/086, NAFST814, 2003/1016299. Unpublished study prepared by Dow AgroSciences LLC, Dow Agrosciences (New Zealand) Ltd. and Huntingdon Life Sciences, Ltd. 337 p.
46908514	Madsen, S. (2006) Study Profile Template for Product Chemistry Data XDE-742 Technical, a Technical Grade Active Ingredient. Project Number: NAFST/06/096. Unpublished study prepared by Dow AgroSciences LLC. 77 p.

835.1220 Sediment and soil absorption /desorption isotherm

MRID	Citation Reference
46908332	Smith, J. (2004) Soil Batch Equilibrium Adsorption/Desorption of (14 Carbon)-XDE-742. Project Number: 030069. Unpublished study prepared by Dow AgroSciences LLC. 136 p.
46908333	Smith-Drake, J. (2006) Soil Batch Equilibrium Adsorption of (Carbon 14)-XDE-742 Metabolites. Project Number: 050019. Unpublished study prepared by Dow AgroSciences LLC. 85 p.
47159601	Smith Drake, J. (2007) Soil Batch Equilibrium Adsorption/Desorption of 14C-XDE-742. Project Number: 030069. Unpublished study prepared by Dow AgroSciences, LLC. 136 p.

850.2100 Avian acute oral toxicity test

MRID	Citation Reference
46908612	Mercer, J. (2006) XDE-742/ BAS 770 H - Avian Single-Dose LD50 on the Bobwhite Quail (<i>Colinus virginianus</i>). Project Number: 11W0298/035027/SPT, 035027/SPT. Unpublished study prepared by BASF Aktiengesellschaft, Labor fuer Oekotoxicologie. 12 p.
46908613	Mercer, J. (2006) XDE-742/ BAS 770 H - Avian Single-Dose LD50 on the Mallard Duck (<i>Anas platyrhynchos</i>). Project Number: 13W0298/035028/SPT, 035028/SPT. Unpublished study prepared by BASF Aktiengesellschaft, Labor fuer Oekotoxicologie. 13 p.

850.2200 Avian dietary toxicity test

MRID	Citation Reference
46908418	Stafford, J. (2004) XDE-742- Dietary Toxicity Test with the Mallard Duck (<i>Anas platyrhynchos</i>). Project Number: 12550/4114, 040131. Unpublished study prepared by Springborn Smithers Laboratories. 78 p.
46908419	Stafford, J. (2005) XDE-742 - Dietary Toxicity Test with the Northern Bobwhite Quail (<i>Colinus virginianus</i>). Project Number: 12550/4111, 040028. Unpublished study prepared by Springborn Smithers Laboratories. 79 p.
46908614	Mercer, J. (2006) Study Profile Template (SPT) for XDE-742-Dietary Toxicity Test with the Mallard Duck (<i>Anas platyrhynchos</i>). Project Number: 12550/4114/SPT, 040131/SPT. Unpublished study prepared by Springborn Smithers Laboratories. 13 p.
46908615	Mercer, J. (2006) Study Profile Template (SPT) for XDE-742-Dietary Toxicity Test with the Northern Bobwhite Quail (<i>Colinus virginianus</i>). Project Number: 12550/4111/SPT, 040028/SPT. Unpublished study prepared by Springborn Smithers Laboratories. 13 p.

850.2300 Avian reproduction test

MRID**Citation Reference**

46908420	Stafford, J. (2005) XDE-742: Reproductive Toxicity Test with the Mallard Duck (<i>Anas platyrhynchos</i>). Project Number: 12550/4116, 040130. Unpublished study prepared by Springborn Smithers Laboratories. 152 p.
46908421	Stafford, J. (2005) XDE-742: Reproductive Toxicity Test with the Northern Bobwhite Quail (<i>Colinus virginianus</i>). Project Number: 12550/4113, 040032. Unpublished study prepared by Springborn Smithers Laboratories. 190 p.
46908616	Mercer, J. (2006) Study Profile Template (SPT) for XDE-742: Reproductive Toxicity Test with the Mallard Duck (<i>Anas platyrhynchos</i>). Project Number: 12550/4116/SPT, 040130/SPT. Unpublished study prepared by Springborn Smithers Laboratories. 15 p.
46908617	Stafford, J. (2006) XDE-742- Reproductive Toxicity Test with the Northern Bobwhite Quail (<i>Colinus virginianus</i>). Project Number: 12550/4113/SPT, 040032/SPT. Unpublished study prepared by Springborn Smithers Laboratories. 19 p.

850.4225 Seedling emergence, Tier II**MRID****Citation Reference**

46908439	Eley, R. (2006) Effects of GF-1674 on Seedling Emergence and Seedling Growth of Non-Target Terrestrial Plants (Tier II)- 2005. Project Number: ACE/05/213, EA05C2B122, ACX0046. Unpublished study prepared by AgroChemex Ltd. and Huntingdon Life Sciences, Ltd. 154 p.
46908635	Rosser, S. (2006) Study Profile Template for GF-1674 (XDE-742): Effects on Seedling Emergence and Vegetative Vigor of Non-Target Terrestrial Plants (Tier II). Project Number: ACE/05/213/SPT. Unpublished study prepared by Dow AgroSciences LLC. 26 p.

850.4250 Vegetative vigor, Tier II**MRID****Citation Reference**

46908440	Eley, R. (2006) Effects of GF-1674 the Vegetative Vigor of Non-Target Terrestrial Plants (Tier II) - 2005. Project Number: ACE/05/214, ACX0047/062401, ACX/0047. Unpublished study prepared by Huntingdon Life Sciences, Ltd and AgroChemex. 147 p.
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850.4400 Aquatic plant toxicity test using Lemna spp. Tiers I and II**MRID****Citation Reference**

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- 46908647 Hancock, G. (2006) Study Profile Template (SPT) for ATSA Metabolite of XDE-742: Growth Inhibition Test with the Aquatic Plant Duckweed: Lemna gibba. Project Number: 061006/SPT. Unpublished study prepared by Dow Chemical Co. 16 p.

860.1300 Nature of the residue - plants, livestock

MRID	Citation Reference
46908306	Byrne, S. (2005) Nature of the Residue Study in Laying Hens Using 14C-XDE-742. Project Number: 040001, 203/0731C, 10000233/5050/1. Unpublished study prepared by Dow AgroSciences LLC and Southwest Bio-Labs, Inc. 121 p.
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860.1340 Residue analytical method

MRID	Citation Reference
46908308	Bacher, R. (2005) XDE-742: Assessment and Validation of European Multi-Residue Enforcement Method(s) for the Determination of XDE-742 in Plant Materials, in Foodstuffs of Animal Origin, in Soil, and in Body Fluids. Project Number: 10000233/5010/1, 051001, P/845/G. Unpublished study prepared by PTRL Europe GmbH. 99 p.
46908309	McLean, N. (2006) Method Validation Report for the Determination of (Inert Ingredient) and its Acid Metabolite in Wheat Using Enviro-Test Laboratories Method M313. Project Number: ETL04DOW05, 04DOW18/REP. Unpublished study prepared by Enviro-Test Laboratories (ETL). 56 p.
46908310	Robaugh, D.; Pinkerton, B. (2006) Independent Laboratory Validation of XDE-742: Assessment and Validation of the European Multi-Residue Enforcement Method(s) for the Determination of XDE-742 in Plant Material, in Foodstuffs of Animal Origin, in Soil, and in Body Fluids. Project Number: 050045, 1612. Unpublished study prepared by Pyxant Labs Inc. 92 p.
46908311	Class, T. (2005) Independent Laboratory Validation of Dow AgroSciences LLC Method GRM 04.17 - Determination of Residues of XDE-742 in Agricultural Commodities by Liquid Chromatography with Tandem Mass Spectrometry. Project Number: P/799/G, 040095, 10000233/5008/1. Unpublished study prepared by PTRL Europe GmbH. 99 p.
46908312	Class, T. (2005) (Inert Ingredient): Independent Laboratory Validation of an Analytical Method for the Determination of (Inert Ingredient) and Its Acid Metabolite in Cereal. Project Number:

	P/798/G, 040096, 10000233/5008/2. Unpublished study prepared by PTRL Europe Gmbh. 50 p.
46908313	Richter, M. (2006) XDE-742: Independent Laboratory Validation of Dow AgroSciences LLC Analytical Method GRM 05.05 - Determination of Residues of XDE-742 and its Metabolites in Soil and Sediment by Liquid Chromatography with Tandem Mass Spectrometry Detection. Project Number: 10000233/5008/3, 050003, P/848/G. Unpublished study prepared by PTRL Europe Gmbh. 83 p.
46908314	Class, T. (2005) (Inert Ingredient): Independent Laboratory Validation of Analytical Method ETL M 312 for the Determination of (Inert Ingredient) and its Acid Metabolite in Soil. Project Number: 10000233/5008/4, 050004, P/850/G. Unpublished study prepared by PTRL Europe Gmbh. 49 p.
46908519	West, S. (2005) Study Profile Template for XDE-742: Assessment and Validation of European Multi-Residue Enforcement Method(s) for the Determination of XDE-742 in Plant Materials, in Foodstuffs of Animal Origin, in Soil, and in Body Fluids. Project Number: 051001/SPT. Unpublished study prepared by Dow AgroSciences LLC. 12 p.
46908520	West, S. (2006) Study Profile Template for Method Validation Report for the Determination of Cloquintocet-mexyl and Its Acid Metabolite in Wheat Using Enviro-Test Laboratories Method M313. Project Number: ETL04DOW05/SPT. Unpublished study prepared by Dow AgroSciences LLC. 16 p.
46908521	West, S. (2006) Study Profile Template for Independent Laboratory Validation of XDE-742: Assessment and Validation of the European Multi-Residue Enforcement Method(s) for the Determination of XDE-742 in Plant Material, Foodstuffs of Animal Origin, Soil, and Body Fluids. Project Number: 050045/SPT. Unpublished study prepared by Dow AgroSciences LLC. 21 p.
46908652	West, S. (2006) Study Profile Template for Method Validation Report for the Determination of Cloquintocet-mexyl and its Acid Metabolite in Soil Using Enviro-Test Laboratories Method M312. Project Number: ETL04DOW04/SPT. Unpublished study prepared by Dow AgroSciences LLC. 23 p.

860.1360 **Multiresidue method**

MRID	Citation Reference
46908315	Peyton, C. (2005) PAM I Multiresidue Protocol Testing for XDE-742: Final Report. Project Number: 1584, 051012. Unpublished study prepared by Pyxant Labs Inc. 131 p.
46908522	West, S. (2005) Study Profile Template for PAM I Multiresidue Testing for XDE-742. Project Number: 051012/SPT. Unpublished study prepared by Dow AgroSciences LLC. 13 p.

860.1380 **Storage stability data**

MRID	Citation Reference
46908316	Class, T. (2006) (Inert Ingredient) and its Acid Metabolite: Freezer Storage Stability in Plant Materials and in Soil: Interim Report. Project Number: P/847/G, B/847/1/G, 10000233/5001/2. Unpublished study prepared by PTRL Europe Gmbh. 80 p.
46908317	Class, T. (2006) XDE-742: Freezer Storage Stability in Plant Materials (XDE-742) and in Soil

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860.1480 Meat/milk/poultry/eggs

MRID

Citation Reference

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860.1500 Crop field trials

MRID

Citation Reference

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860.1850 Confined accumulation in rotational crops

MRID

Citation Reference

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- 46908525 Graper, L. (2006) A Confined Rotational Crop Study with 14C-XDE-742. Project Number: 040003. Unpublished study prepared by Dow AgroSciences LLC. 26 p.

870.1100 Acute oral toxicity

MRID

Citation Reference

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46908338	Durando, J. (2006) Acute Oral Toxicity Up and Down Procedure in Rats: GF-1674. Project Number: 18346, 050144, 050922/1D. Unpublished study prepared by Product Safety Laboratories. 28 p.
46908538	Brooks, K. (2005) Study Profile Template (SPT) for XDE-742/BAS 770 H: Acute Oral Toxicity in Rats. Project Number: 10A0298/SPT, 031037/SPT. Unpublished study prepared by BASF Aktiengesellschaft, Labor fuer Oekotoxicologie. 7 p.
46908539	Durando, J. (2006) Study Profile Template (SPT) for GF-1674: Acute Oral Toxicity Up and Down Procedure in Rats. Project Number: 18346/SPT, 050144/SPT. Unpublished study prepared by Product Safety Laboratories. 7 p.
47158703	Durando, J. (2007) GF-1847: Acute Oral Toxicity Up and Down Procedure in Rats. Project Number: 070002, 21573, P320/UDP/DOW. Unpublished study prepared by Product Safety Laboratories. 30 p.
47158709	Durando, J. (2007) Study Profile Template (SPT) for GF-1847: Acute Oral Toxicity Up and Down Procedure in Rats. Project Number: 21573/SPT, 070002/SPT. Unpublished study prepared by Product Safety Laboratories. 8 p.
47166903	Durando, J. (2007) Acute Oral Toxicity Up and Down Procedure in Rats: GF-1848. Project Number: 070006, 21426, P320/UDP/DOW. Unpublished study prepared by Product Safety Laboratories. 29 p.
47166909	Durando, J. (2007) Study Profile Template (SPT) for GF-1848: Acute Oral Toxicity Up and Down Procedure in Rats. Project Number: 21426/SPT, 070006/SPT. Unpublished study prepared by Product Safety Laboratories. 8 p.

870.1200 Acute dermal toxicity

MRID	Citation Reference
46908339	Gamer, A.; Leibold, E. (2003) XDE-742/BAS 770 H - Acute Dermal Toxicity Study in Rats. Project Number: 11A0298/031036. Unpublished study prepared by BASF Aktiengesellschaft. 17 p.
46908340	Durando, J. (2006) Acute Dermal Toxicity Study in Rats - Limit Test: GF-1674. Project Number: 18347, 050147, P322/DOW. Unpublished study prepared by Product Safety Laboratories. 26 p.
46908540	Brooks, K. (2005) Study Profile Template (SPT) for XDE-742/BAS 770 H: Acute Dermal Toxicity in Rats. Project Number: 11A0298/SPT, 031036/SPT. Unpublished study prepared by BASF Aktiengesellschaft, Labor fuer Oekotoxicologie. 7 p.
46908541	Durando, J. (2006) Study Profile Template (SPT) for GF-1674: Acute Dermal Toxicity Study in Rats. Project Number: 18347/SPT, 050147/SPT. Unpublished study prepared by Product Safety Laboratories. 7 p.
46908552	Dryzga, M. (2005) Study Profile Template (SPT) for XDE-742/BAS 770H: Dermal Test Study in Wistar Rats Application for 2 Weeks. Project Number: 13S0298/SPT, 03020/SPT. Unpublished study prepared by BASF Aktiengesellschaft, Labor fuer Oekotoxicologie. 10 p.
47158704	Durando, J. (2007) GF-1847: Acute Dermal Toxicity Study in Rats: Limit Test. Project Number: 070003, 21574, P322/DOW. Unpublished study prepared by Product Safety Laboratories. 25 p.

- 47158710 Durando, J. (2007) Study Profile Template (SPT) for GF-1847: Acute Dermal Toxicity Study in Rats. Project Number: 21574/SPT, 070003/SPT. Unpublished study prepared by Product Safety Laboratories. 7 p.
- 47166904 Durando, J. (2007) Acute Dermal Toxicity Study in Rats- Limit Test: GF-1848. Project Number: 21427, 070007, P322/DOW. Unpublished study prepared by Product Safety Laboratories. 28 p.
- 47166910 Durando, J. (2007) Study ProfileTemplate (SPT) for GF-1848: Acute Dermal Toxicity Study in Rats. Project Number: 21427/SPT, 070007/SPT. Unpublished study prepared by Product Safety Laboratories. 7 p.

870.1300 Acute inhalation toxicity

MRID	Citation Reference
46908341	Mehta, J. (2006) Waiver Rationale for XDE-742 TGAI Acute Inhalation Study. Project Number: JM06001. Unpublished study prepared by Dow AgroSciences LLC. 12 p.
46908342	Mehta, J. (2006) Waiver Rationale for GF-1674 Acute Inhalation Toxicity. Project Number: JM06003. Unpublished study prepared by Dow AgroSciences LLC. 11 p.
47158705	Krieger, S.; Radtke, B. (2007) GF-1847: Acute Liquid Aerosol Inhalation Toxicity Study in F344/Ducrl Rats. Project Number: 071001. Unpublished study prepared by Dow Chemical USA. 70 p.
47158711	Radtke, B. (2007) Study Profile Template (SPT) for GF-1847: Acute Liquid Aerosol Inhalation Toxicity Study in F344/DUCRL Rats. Project Number: 071001/SPT. Unpublished study prepared by Dow Chemical, USA. 10 p.
47166905	Krieger, S.; Radtke, B. (2007) GF-1848: Acute Liquid Aerosol Inhalation Toxicity Study in F344/Ducrl Rats. Project Number: 071002. Unpublished study prepared by Dow Chemical, USA. 72 p.
47166911	Radtke, B. (2007) Study Profile Template (SPT) for GF-1848: Acute Liquid Inhalation Toxicity Study in F344/DUCRL Rats. Project Number: 071002/SPT. Unpublished study prepared by Dow Chemical, USA. 11 p.
47236401	Lowe, C. (2007) Acute Inhalation Toxicity Study in Rats - Limit Test: XDE-742 TGAI. Project Number: 070290, 21954, P330/DOW. Unpublished study prepared by Product Safety Laboratories. 36 p.
47236402	Lowe, C. (2007) Study Profile Template (SPT) for XDE-742 TGAI: Acute Inhalation Toxicity Study in Rats - Limit Test. Project Number: 070290/SPT, 21954/SPT. Unpublished study prepared by Product Safety Laboratories. 7 p.
47237001	Fonseca, D.; Stewart, M.; Hughes, P.; et al. (2007) Dow Agrosciences' Response to Acute Inhalation Toxicity NAFTA Review of XDE-742 (Pyroxsulam), GF-1674 and GF-1274 (PMRA 4.2.3 / EPA 81-3 / APVMA 3-4.2). Project Number: DF/09182007, 070290, 21954. Unpublished study prepared by Dow Agrosciences LLC. 119 p.
47265901	Lowe, C. (2007) Acute Inhalation Toxicity Study in Rats - Limit Test: GF-1274. Project Number: 23052, 070391. Unpublished study prepared by Product Safety Laboratories. 36 p.

870.2400 Acute eye irritation

MRID	Citation Reference
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47158706	Durando, J. (2007) GF-1847: Primary Eye Irritation Study in Rabbits. Project Number: 070005, 21575, P324/DOW. Unpublished study prepared by Product Safety Laboratories. 32 p.
47158712	Druando, J. (2007) Study Profile Template (SPT) for GF-1847: Primary Eye Irritation Study in Rabbits. Project Number: 21575/SPT, 070005/SPT. Unpublished study prepared by Product Safety Laboratories. 7 p.
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47166912	Durando, J. (2007) Study Profile Template (SPT) for GF-1848: Primary Eye Irritation Study in Rabbits. Project Number: 21428/SPT, 070009/SPT. Unpublished study prepared by Product Safety Laboratories. 7 p.

870.2500 Acute dermal irritation

MRID	Citation Reference
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870.2600 Skin sensitization

MRID	Citation Reference
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47158714	Wiescinski, C. (2007) Study Profile Template (SPT) for GF-1847: Local Lymph Node Assay in CBA/J Mice. Project Number: 061197/SPT. Unpublished study prepared by Dow Chemical USA. 14 p.
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870.3100 90-Day oral toxicity in rodents

MRID	Citation Reference
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870.3150 90-day oral toxicity in nonrodents

MRID	Citation Reference
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870.3200 21/28-day dermal toxicity

MRID	Citation Reference
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870.3700 Prenatal developmental toxicity study

MRID	Citation Reference
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870.3800 Reproduction and fertility effects

MRID	Citation Reference
46908402	Schneider, S. (2004) XDE-742/BAS 770H: Maternal Toxicity Study in Wistar Rats (Range-Finding) Oral Administration (Gavage). Project Number: 10R0298/03022. Unpublished study prepared by BASF Aktiengesellschaft. 75 p.
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870.4100 Chronic toxicity

MRID	Citation Reference
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870.4200 Carcinogenicity

MRID	Citation Reference
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870.4300 Combined chronic toxicity/carcinogenicity

MRID	Citation Reference
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870.5100 Bacterial reverse mutation test

MRID

Citation Reference

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870.5300 In vitro mammalian cell gene mutation test

MRID

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870.5375 In vitro mammalian chromosome aberration test

MRID

Citation Reference

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870.5395 Mammalian erythrocyte micronucleus test

MRID**Citation Reference**

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870.5550 Unscheduled DNA synthesis in mammalian cells in culture**MRID****Citation Reference**

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870.7485 Metabolism and pharmacokinetics**MRID****Citation Reference**

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870.3050 Repeated dose 28-day oral toxicity in rodents

MRID	Citation Reference
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850.7100 Data reporting for environmental chemistry methods

MRID	Citation Reference
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870.3050 Repeated dose 28-day oral toxicity in rodents

MRID	Citation Reference
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850.7100 Data reporting for environmental chemistry methods

MRID	Citation Reference
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MRID	Citation Reference
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