CHEMAG SMASH 625

Material Safety Data Sheet
Date of Issue: Mon 24th February 2003
Reference: ChemWatch 4945-5

STATEMENT OF HAZARDOUS NATURE

HAZARDOUS ACCORDING TO WORKSAFE AUSTRALIA CRITERIA.

SUPPLIER

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CHEMWATCH HAZARD RATINGS

Flammability: 0
Toxicity: 2
Body Contact: 3
Reactivity: 1
Chronic: 2
SCALE: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4

PERSONAL PROTECTIVE EQUIPMENT FOR INDUSTRIAL/COMMERCIAL ENVIRONMENTS

Product Name: ChemAg Smash 625

Other Names: Unregulated for Road/Rail Transport
UN No. 3082, Class 9 for Sea Transport
only; Shipping Name Environmentally
Hazardous Substance, Liquid, N.O.S
Packaging Group III

CAS RN No(s): None
UN Number: None
Packing Group: None
Dangerous Goods Class: None
Subsidiary Risk: None
Hazchem Code: None
Poisons Schedule Number: S5

USE

Used for the control of broad-leafed weeds in fallow before direct drilling or sowing of cereal crops and pastures; and in cereal crops, pastures, sugar cane, peanuts and non-agricultural areas.

PHYSICAL DESCRIPTION/PROPERTIES

APPEARANCE

Clear, red-brown liquid with ammoniacal odour; mixes with water.

Boiling Point (°C): >100 (water)
Melting Point (°C): Not available
Vapour Pressure (kPa): Not available
Specific Gravity: 1.254
Flash Point (°C): Not applicable
Lower Explosive Limit (%): Not applicable
Upper Explosive Limit (%): Not applicable
Solubility in Water (g/L): Miscible

INGREDIENTS

NAME	CAS RN	%
2,4-dichlorophenoxyacetic acid dimethylamine	2008-39-1	30-60
2,4-dichlorophenoxyacetic acid diethanolamine (625 g/L)	5742-19-8	
water	7732-18-5	30-60

HEALTH HAZARD

ACUTE HEALTH EFFECTS

SWALLOWED

The material is moderately discomforting to the gastro-intestinal tract and harmful if swallowed
Chlorphenoxy compounds irritate the digestive system and cause nausea and vomiting, chest pain, and diarrhoea. Taking large doses can result in mineral imbalance, temperature changes, hyperventilation, low blood pressure, dilated blood vessels, damage to the heart and liver with death of white blood cells, and convulsions. Most salts and esters of 2,4-D exhibit similar effects, although the free acid is more toxic. Massive doses can cause ventricular fibrillation followed by death. If death is delayed, there may be a sluggishness followed by spastic changes in muscles and inco-ordination. Severe cases cause apathy, weakness in the legs, regular muscle spasms and coma. Subacute poisonings cause severe nosebleeds, bleeding from the mouth and irritation of

the eye and nose. Clinically, poisonings are uncommon, although muscle weakness and nervous symptoms in the extremities are sometimes reported. The substances are not metabolised and are excreted only slowly from the body, in the urine.

EYE

The material is highly discomforting to the eyes and is capable of causing pain and severe conjunctivitis. Corneal injury may develop, with possible permanent impairment of vision, if not promptly and adequately treated
Corneal injury resulting from 2,4-D exposure may be slow to heal.

SKIN

The material is moderately discomforting to the skin and is capable of causing skin reactions which may lead to dermatitis
Many amine compounds are sensitisers and some are absorbed through intact skin
Toxic effects may result from skin absorption
2,4-D and its derivatives can all be absorbed through the skin of humans. Severe peripheral neuropathy has followed causing limb paralysis and loss of sensation. Fatigue, nausea, vomiting, anorexia, diarrhoea and swelling occur, followed by "pins and needles", pain and paralysis. Disability is long-lasting.

INHALED

The vapour/mist is discomforting to the upper respiratory tract and maybe harmful if inhaled
Inhalation of chlorophenoxy dusts or mists may result in sore throat, burning sensations in the throat and chest, cough, tears, inflamed nose, dizziness and inco-ordination, as a result of absorption from the lungs.

CHRONIC HEALTH EFFECTS

Principal routes of exposure are by accidental skin and eye contact and by inhalation of vapours especially at higher temperatures.
Chlorophenoxy herbicides cause an increased risk of cancers of soft tissue, lymph and bronchi. Inflammation of skin can result from long term contact.
Chronic exposure to 2,4-D can cause nausea, liver changes, skin eruptions, irritation of the airways and eyes, as well as nervous changes. People with chronic health conditions or who have endocrinological or immune disorders should not be exposed to herbicides.

FIRST AID

SWALLOWED

If poisoning occurs, contact a doctor or Poisons Information Centre.

EYE

If this product comes in contact with the eyes:
Immediately hold eyelids apart and flush the eye continuously with running water.
Ensure complete irrigation of the eye by keeping eyelids apart and away from eye
and moving the eyelids by occasionally lifting the upper and lower lids.
Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
Transport to hospital or doctor without delay.
Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin contact occurs:
Immediately remove all contaminated clothing, including footwear
Flush skin and hair with running water (and soap if available).
Seek medical attention in event of irritation.

INHALED

If fumes or combustion products are inhaled remove from contaminated area.
Lay patient down. Keep warm and rested.
Prostheses such as false teeth, which may block airway, should be removed, where
possible, prior to initiating first aid procedures.
Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
Transport to hospital, or doctor.

ADVICE TO DOCTOR

Following exposures to chlorphenoxy compounds:
Acute toxic reactions are rare. The by-product of production, dioxin, may be
implicated in subacute features such as hepatic enlargement, chloracne, neuromuscular symptoms and deranged porphyrin metabolism.
Large intentional overdoses result in coma, metabolic acidosis, myalgias, muscle
weakness, elevated serum creatine kinase, myoglobinuria, irritation of the skin,
eyes, respiratory tract and gut and mild renal and hepatic dysfunction.
Several cases of sensorimotor peripheral neuropathies have been associated with
chronic dermal exposure to 2,4-D 4. For acute exposures the usual methods of gut
and skin contamination (lavage, charcoal, cathartic) are recommended in the
first several hours. Alkalisation of the urine and generous fluid replacement

have the added benefit of treating any myoglobinuria present. Monitor metabolic
acidosis, hyperthermia, hyperkalemia, myoglobinuria and hepatic/renal dysfunction. for 2,4-dichlorophenoxyacetic acid (2,4-D) and its derivatives

Gastric lavage if there are no signs of impending convulsions.
Cautious administration of short-acting anticonvulsant drug if convulsions
appear imminent.
General supportive measures for central nervous system depression.
If hypotension appears, search vigorously for a contributing cause (e.g. dehydration, electrolyte balance, acidosis, myocardial disturbances and hyperexia).
As appropriate, treat dehydration, electrolyte disturbances, acidosis, and
hyperexia.
To promote excretion of 2,4-D, initiate alkaline diuresis, as in salicylate
poisoning by injecting sodium bicarbonate, intravenously, until the urine pH
exceeds 7.5 and then infuse mannitol; renal clearance rises sharply as urine pH
rises above 7.5 - above pH 8.0, it is said to be 100-fold greater than pH 6.0.
If cardiac disturbances are suspected, monitor ECG continuously when possible.
Prepare to deliver defibrillating shocks in the event of ventricular fibrillation.
If hypotension intensifies, a trial with a vasopressor drug may be appropriate.
Adrenalin (epinephrine) should be avoided because of possible fibrillation.
If myotonia appears, a trial with quinidine may be helpful.
10:Physiotherapy may
be necessary for motion disorders associated with peripheral neuritis, myopathy
or brain stem dysfunction. GOSSELIN, SMITH HODGE: Clinical Toxicology of Commercial Products, 5th Ed.

PRECAUTIONS FOR USE

EXPOSURE STANDARDS

None assigned. Refer to individual constituents.

EXPOSURE STANDARDS FOR MIXTURE

"Worst Case" computer-aided prediction of spray/ mist or fume/ dust components
and concentration:

Composite Exposure Standard for Mixture (TWA) :15.625 mg/m³.
Operations which produce a spray/mist or fume/dust, introduce particulates to

the breathing zone.

If the breathing zone concentration of ANY of the components listed below is exceeded, "Worst Case" considerations deem the individual to be over overexposed.

Component	Breathing Zone ppm	Breathing Zone mg/m^3	Mixture Conc (%)
2,4-dichlorophenoxyacetic acid dim	9.375	60	0

INGREDIENT DATA

2,4-DICHLOROPHENOXYACETIC ACID DIMETHYLAMINE:
CEL TWA: 10 mg/m^3 (compare TLV TWA: 2,4-D)
MAK value: 1 mg/m^3
- measured as the inhalable fraction of the aerosol

Designated H in List of MAK values: Danger of cutaneous absorption.
Absorption of such substances through the skin can pose an incomparably larger danger of toxicity than their inhalation. To avoid health risks when handling such substances, meticulous cleaning of the skin, hair and clothing is imperative.
MAK Category II Peak Limitation: For substances with systemic effects and with a half-life in humans ranging from two hours to shift-length.
Allows excursions of 5 times the MAK value, for 30 minutes (on average), twice per shift.
MAK Group C: There is no reason to fear risk of damage to the developing embryo when MAK and BAT values are observed.
MAK values, and categories and groups are those recommended within the Federal Republic of Germany
Evidence for skin absorption and chronic feeding studies in rats and mice necessitate a review of the recommended TLV-TWA:
Occupational exposure will occur for workers involved in the handling, transfer, mixing and spraying of the substance. At a spraying rate of 315-630 g/ha (water-soluble formulation), the calculated inhalation exposure of applicators accounted for less than 2% (median dose 0.2 ug/kg body weight) of the potential cumulative exposure while deposition on the hands accounted for 80-90% (median dose of 120 ug/kg body weight) of the cumulative exposure.

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WATER:

No exposure limits set by NOHSC or ACGIH

ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid	0.5-1 m/s (100-200 f/min.)

fumes, pickling (released at low velocity into zone of active generation)	
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Spraying to be carried out in conditions conforming to local state regulations.

Unprotected personnel must vacate the spraying area.

PERSONAL PROTECTION

EYE

Chemical goggles

Full face shield

Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them.

HANDS/FEET

Elbow length PVC gloves
Protective footwear

OTHER

Overalls.
Barrier cream
Eyewash unit.
Full body protecting overalls required for other than spot spraying
Consider where spray drift may fall and DO NOT spray into wind

RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half-face Respirator	Full-Face Respirator
1000	10	-AUS P	-
1000	50	-	-AUS P
5000	50	Airline *	-
5000	100	-	-2 P
10000	100	-	-3 P
	100+		Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required. For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

SAFE HANDLING

STORAGE AND TRANSPORT

SUITABLE CONTAINER

Polyethylene or polypropylene container. Packing as recommended by manufacturer
Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents
Avoid strong bases.

STORAGE REQUIREMENTS

Store in original containers.
Keep containers securely sealed.
Store in a cool, dry, well-ventilated area.
Store away from incompatible materials and foodstuff containers.
Protect containers against physical damage and check regularly for leaks.
Observe manufacturer's storing and handling recommendations.

TRANSPORTATION

No restrictions.

SPILLS AND DISPOSAL

MINOR SPILLS

Clean up all spills immediately.
Avoid breathing vapours and contact with skin and eyes.
Control personal contact by using protective equipment.
Contain and absorb spill with sand, earth, inert material or vermiculite.
Wipe up.
Place in a suitable labelled container for waste disposal.

MAJOR SPILLS

Moderate hazard.
Clear area of personnel and move upwind.
Alert Fire Brigade and tell them location and nature of hazard.
Wear breathing apparatus plus protective gloves.
Prevent, by any means available, spillage from entering drains or water course.
Stop leak if safe to do so.
Contain spill with sand, earth or vermiculite.
Collect recoverable product into labelled containers for recycling.
Neutralise/decontaminate residue.
Collect solid residues and seal in labelled drums for disposal.
Wash area and prevent runoff into drains.
After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
If contamination of drains or waterways occurs, advise emergency services.

DISPOSAL

Recycle wherever possible or consult manufacturer for recycling options.
Consult State Land Waste Management Authority for disposal.
Bury residue in an authorised landfill.
Recycle containers if possible, or dispose of in an authorised landfill.

FIRE FIGHTERS' REPORT

EXTINGUISHING MEDIA

Water spray or fog.
Foam.
Dry chemical powder.
Carbon dioxide.

FIRE FIGHTING

Alert Fire Brigade and tell them location and nature of hazard.
Wear full body protective clothing with breathing apparatus.
Prevent, by any means available, spillage from entering drains or water course.
Consider evacuation (or protect in place).
Use water delivered as a fine spray to control the fire and cool adjacent area.
Cool fire exposed containers with water spray from a protected location.
DO NOT approach containers suspected to be hot.
If safe to do so, remove containers from path of fire.
Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD

Non combustible.
Not considered to be a significant fire risk.
Expansion or decomposition on heating may lead to violent rupture of containers.
Decomposes on heating and may produce toxic fumes of carbon monoxide (CO).
May emit acrid smoke.
Other decomposition products include chlorides , carbon dioxide (CO2) , hydrogen
chloride , phosgene and nitrogen oxides (NOx)

FIRE INCOMPATIBILITY

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids,
chlorine bleaches, pool chlorine etc. as ignition may result

HAZCHEM

None

CONTACT POINT

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End of Report