

PASLODE IMPULSE OIL (B20544F)

Chemwatch Independent Material Safety Data Sheet

Issue Date: 8-Feb-2010

NC317ECP

CHEMWATCH 22-9770

Version No:2.0

CD 2010/1 Page 1 of 12

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

PASLODE IMPULSE OIL (B20544F)

SYNONYMS

polyoxyalkylene, glycol, ether, lubricant

PRODUCT USE

Synthetic lubricant.

SUPPLIER

Company: Paslode Australia

Address:

47- 55 Williamson Road

Ingleburn

NSW, 2565

AUS

Telephone: +61 2 9829 4000

Fax: +61 2 9829 7788

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to NOHSC Criteria, and ADG Code.

POISONS SCHEDULE

None

RISK

- May cause SENSITISATION by skin contact.
- May cause long- term adverse effects in the aquatic environment.

SAFETY

- Do not breathe gas/ fumes/ vapour/ spray.
- Avoid contact with skin.
- Wear eye/ face protection.
- To clean the floor and all objects contaminated by this material use water and detergent.
- In case of contact with eyes rinse with plenty of water and contact Doctor or Poisons Information Centre.
- If swallowed IMMEDIATELY contact Doctor or Poisons Information Centre (show this container or label).

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
polypropylene glycol monobutyl ether	9003-13-8	>95
phenyl- alpha- naphthylamine	90-30-2	<5

continued...

PASLODE IMPULSE OIL (B20544F)

Chemwatch Independent Material Safety Data Sheet

Issue Date: 8-Feb-2010

NC317ECP

CHEMWATCH 22-9770

Version No:2.0

CD 2010/1 Page 2 of 12

Section 4 - FIRST AID MEASURES

SWALLOWED

- - If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.

EYE

- If this product comes in contact with the eyes:
- Wash out immediately with fresh 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.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- 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.
- Other measures are usually unnecessary.

NOTES TO PHYSICIAN

- Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- - Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

FIRE FIGHTING

- - 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.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- Do not approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

FIRE/EXPLOSION HAZARD

- - Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.

continued...

PASLODE IMPULSE OIL (B20544F)

Chemwatch Independent Material Safety Data Sheet

Issue Date: 8-Feb-2010

NC317ECP

CHEMWATCH 22-9770

Version No:2.0

CD 2010/1 Page 3 of 12

Section 5 - FIRE FIGHTING MEASURES

- On combustion, may emit toxic fumes of carbon monoxide (CO).

- May emit acrid smoke.

- Mists containing combustible materials may be explosive.

Combustion products include: carbon dioxide (CO₂), nitrogen oxides (NO_x), other pyrolysis products typical of burning organic material.

FIRE INCOMPATIBILITY

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

HAZCHEM

None

PERSONAL PROTECTION

Glasses:

Chemical goggles.

Gloves:

PVC chemical resistant type.

Respirator:

Type A- P Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

■ Slippery when spilt.

- 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

■ Slippery when spilt.

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.

- No smoking, naked lights or ignition sources.

- Increase ventilation.

- Stop leak if safe to do so.

- Contain spill with sand, earth or vermiculite.

- Collect recoverable product into labelled containers for recycling.

- Absorb remaining product with sand, earth or vermiculite.

- Collect solid residues and seal in labelled drums for disposal.

- Wash area and prevent runoff into drains.

- If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

■ - DO NOT allow clothing wet with material to stay in contact with skin.

- Avoid all personal contact, including inhalation.

- Wear protective clothing when risk of exposure occurs.

- Use in a well-ventilated area.

continued...

PASLODE IMPULSE OIL (B20544F)

Chemwatch Independent Material Safety Data Sheet

Issue Date: 8-Feb-2010

NC317ECP

CHEMWATCH 22-9770

Version No:2.0

CD 2010/1 Page 4 of 12

Section 7 - HANDLING AND STORAGE

- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights or ignition sources.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

SUITABLE CONTAINER

- - Metal can or drum
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY

- - Avoid reaction with oxidising agents.

STORAGE REQUIREMENTS

- - Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- 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.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- polypropylene glycol monobutyl ether:
- phenyl- alpha- naphthylamine:

CAS:9003- 13- 8

CAS:90- 30- 2

MATERIAL DATA

PASLODE IMPULSE OIL (B20544F):

■ Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents

continued...

PASLODE IMPULSE OIL (B20544F)

Chemwatch Independent Material Safety Data Sheet

Issue Date: 8-Feb-2010

NC317ECP

CHEMWATCH 22-9770

Version No:2.0

CD 2010/1 Page 5 of 12

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

None assigned. Refer to individual constituents.

POLYPROPYLENE GLYCOL MONOBUTYL ETHER:

- No exposure limits set by NOHSC or ACGIH.

PHENYL-ALPHA-NAPHTHYLAMINE:

- It is the goal of the ACGIH (and other Agencies) to recommend TLVs (or their equivalent) for all substances for which there is evidence of health effects at airborne concentrations encountered in the workplace.

At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum.

NOTE: The ACGIH occupational exposure standard for Particles Not Otherwise Specified (P.N.O.S) does NOT apply.

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

PERSONAL PROTECTION

EYE

- - Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET

- - Wear chemical protective gloves, eg. PVC.
- Wear safety footwear or safety gumboots, eg. Rubber.

NOTE:

- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing

continued...

PASLODE IMPULSE OIL (B20544F)

Chemwatch Independent Material Safety Data Sheet

Issue Date: 8-Feb-2010

NC317ECP

CHEMWATCH 22-9770

Version No:2.0

CD 2010/1 Page 6 of 12

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

gloves and other protective equipment, to avoid all possible skin contact.

- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.

- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.

- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

OTHER

- - Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

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	A- AUS P	-
1000	50	-	A- AUS P
5000	50	Airline *	-
5000	100	-	A- 2 P
10000	100	-	A- 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.

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.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Transparent colourless to pale yellow, odourless liquid; does not mix with water. Soluble in most organic solvents.

continued...

PASLODE IMPULSE OIL (B20544F)

Chemwatch Independent Material Safety Data Sheet

Issue Date: 8-Feb-2010

NC317ECP

CHEMWATCH 22-9770

Version No:2.0

CD 2010/1 Page 7 of 12

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Liquid.

Does not mix with water.

Floats on water.

State	Liquid	Molecular Weight	Not applicable
Melting Range (°C)	< - 21 (pour pt)	Viscosity	Not Available
Boiling Range (°C)	> 200	Solubility in water (g/L)	Immiscible
Flash Point (°C)	233 (PMCC)	pH (1% solution)	Not applicable
Decomposition Temp (°C)	Not available	pH (as supplied)	Not applicable
Autoignition Temp (°C)	Not available	Vapour Pressure (kPa)	<0.001 @ 20degC
Upper Explosive Limit (%)	Not available	Specific Gravity (water=1)	0.999
Lower Explosive Limit (%)	Not available	Relative Vapour Density (air=1)	> 10
Volatile Component (%vol)	Negligible	Evaporation Rate	< 0.01 BuAC = 1

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

■ - Presence of incompatible materials.

- Product is considered stable.

- Hazardous polymerisation will not occur.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (eg. liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

EYE

■ There is some evidence to suggest that this material can cause eye irritation and damage in some persons.

SKIN

■ The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives.

Open cuts, abraded or irritated skin should not be exposed to this material.

Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

■ The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

continued...

PASLODE IMPULSE OIL (B20544F)

Chemwatch Independent Material Safety Data Sheet

Issue Date: 8-Feb-2010

NC317ECP

CHEMWATCH 22-9770

Version No:2.0

CD 2010/1 Page 8 of 12

Section 11 - TOXICOLOGICAL INFORMATION

Not normally a hazard due to non-volatile nature of product.

CHRONIC HEALTH EFFECTS

■ There is some evidence that inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.

There is limited evidence that, skin contact with this product is more likely to cause a sensitisation reaction in some persons compared to the general population.

Sensitisation may give severe responses to very low levels of exposure, i.e. hypersensitivity. Sensitised persons should not be allowed to work in situations where exposure may occur.

Sensitisation may result in allergic dermatitis responses including rash, itching, hives or swelling of extremities.

TOXICITY AND IRRITATION

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

■ The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

POLYPROPYLENE GLYCOL MONOBUTYL ETHER:

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY

Oral (rat) LD50: 9100 mg/kg

Dermal (rabbit) LD50: 20000 mg/kg

IRRITATION

Skin (rabbit): 500 mg Open - Mild

PHENYL-ALPHA-NAPHTHYLAMINE:

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY

Oral (Rat) LD50: 1625 mg/kg

Oral (Mouse) LD50: 1231 mg/kg

IRRITATION

Skin (rabbit): non- irritating *

Eye(rabbit): slight Irritant *

■ Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production. Owing to its low vapour pressure and use patterns, the ingestion or inhalation of N-phenyl-1-naphthylamine is expected to be minor. Dermal contact with oils and rubber articles containing N-phenyl-1-naphthylamine may occur in the workplace.

Based upon studies conducted with laboratory animals, N-phenyl-1-naphthylamine is well absorbed and extensively excreted after ingestion. Following ingestion by rats, 60% of the administered dose was excreted in the faeces and 35% in the urine within 72 h. Several unidentified metabolites of N-phenyl-1-naphthylamine have been detected in the urine of exposed rats. On the basis of in vitro studies, metabolism likely occurs primarily via hydroxylation. The acute oral toxicity of N-phenyl-1-naphthylamine in laboratory animals is

continued...

PASLODE IMPULSE OIL (B20544F)

Chemwatch Independent Material Safety Data Sheet

Issue Date: 8-Feb-2010

NC317ECP

CHEMWATCH 22-9770

Version No:2.0

CD 2010/1 Page 9 of 12

Section 11 - TOXICOLOGICAL INFORMATION

low. In standard tests with rabbits, N-phenyl-1-naphthylamine was reported to be neither a skin irritant nor an eye irritant. However, the skin sensitizing properties of N-phenyl-1-naphthylamine were revealed in the guinea-pig maximization test as well as in humans exposed to greases or rubber materials containing this chemical. Limited data indicate that the kidneys and liver are the main target organs following ingestion. Adequate studies with which to derive putative effect levels were not identified. The potential carcinogenicity of N-phenyl-1-naphthylamine could not be fully evaluated, as none of the available studies was performed according to currently accepted standard protocols. N-Phenyl-1-naphthylamine was not mutagenic in bacterial cells, nor were the frequencies of gene mutation (mouse lymphoma assay) or chromosomal aberrations (in vitro metaphase analysis in Chinese hamster ovary cells or Chinese hamster lung cells) increased in these cell types exposed in vitro. A marginally positive result in a sister chromatid exchange assay conducted with Chinese hamster ovary cells in the presence of metabolic activation has been reported. Unscheduled DNA synthesis was increased in exposed human lung (WI-38) cells; however, the effects were not clearly concentration dependent. N-Phenyl-1-naphthylamine was negative in a dominant lethal test conducted in mice. Based upon the available data, N-phenyl-1-naphthylamine does not appear to be genotoxic. Data on the reproductive/developmental toxicity and on immunological or neurological effects of N-phenyl-1-naphthylamine were not identified. An increased rate of cancer was observed in one epidemiological study of N-phenyl-1-naphthylamine-exposed workers; however, owing to the small number of excess deaths and concomitant exposure to other substances, it is not possible to attribute this effect solely to N-phenyl-1-naphthylamine. Although data are inadequate to allow a more detailed characterization of the potential health risks of N-phenyl-1-naphthylamine, dermal contact with the chemical should be avoided because of its sensitizing properties.

* [Bayer]

Section 12 - ECOLOGICAL INFORMATION

Refer to data for ingredients, which follows:

PHENYL-ALPHA-NAPHTHYLAMINE:

PASLODE IMPULSE OIL (B20544F):

- DO NOT discharge into sewer or waterways.
- Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters. Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

PASLODE IMPULSE OIL (B20544F):

- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

PHENYL-ALPHA-NAPHTHYLAMINE:

- Fish LC50 (96hr.) (mg/l): 4.4 (48hr)

- Very toxic to aquatic organisms.

- For phenyl-alpha-naphthylamine:

log Kow = 4.2

Existing data indicates that this chemical is of high concern for aquatic toxicity, low concern as Persistent Organic Pollutants (POP), low concern for skin and eye irritation, and low concern for acute mammalian toxicity.

Environmental fate:

Based upon its physical/chemical properties, the distribution of N-phenyl-1-naphthylamine in the environment, predicted on the basis of a Level II fugacity model, was approximately 36% to soil, 34% to sediment, 29% to water, and less than 1% each to air, suspended sediment, and biota. Laboratory studies yielded half-lives for the photochemical degradation of N-phenyl-1-naphthylamine in water of 8.4 and 5.7 min. Photolysis may lead to the preliminary breakdown of N-phenyl-1-naphthylamine under favourable environmental conditions, but further degradation is unlikely. The substance is stable to hydrolysis under environmental conditions, and removal by biodegradation in water and soil is slow. Owing to its moderate to high potential for sorption to organic soil constituents and its limited mineralization in soil, N-phenyl-1-naphthylamine is presumed to have geoaccumulation potential. The probability of infiltration into groundwater is low. Based upon studies with Daphnia and fish and its measured log Kow of 4.2, N-phenyl-1-naphthylamine is expected to have a moderate

continued...

PASLODE IMPULSE OIL (B20544F)

Chemwatch Independent Material Safety Data Sheet

Issue Date: 8-Feb-2010

NC317ECP

CHEMWATCH 22-9770

Version No:2.0

CD 2010/1 Page 10 of 12

Section 12 - ECOLOGICAL INFORMATION

potential for bioaccumulation. Nevertheless, secondary poisoning of higher trophic levels via the aquatic food-chain seems unlikely in view of the chemical's metabolism and extensive excretion. The acute toxicity of N-phenyl-1-naphthylamine in fish and Daphnia is high, with lowest reported no-observed-effect concentrations (NOECs) of 0.11 mg/litre (192 h) and 0.02 mg/litre (21 days), respectively. Despite limited hydrolytic or biotic degradation, the bioavailability of this chemical in water is expected to be considerably reduced by sorption and photochemical degradation.

Based on its ultraviolet absorption spectrum, direct photochemical degradation of N-phenyl-1-naphthylamine in air is expected. Measured half-lives for the photochemical degradation of the chemical in water have been reported at 8.4 and 5.7 min. It can therefore be concluded that photolysis may lead to preliminary breakdown of N-phenyl-1-naphthylamine under favourable environmental conditions, but that further degradation is unlikely. From experiments conducted in aqueous solution, hydrolysis of N-phenyl-1-naphthylamine under environmental conditions is expected to be of limited import.

In tests with conditions favouring biodegradation, N-phenyl-1-naphthylamine was degraded with a half-life ranging from 4 to 11 days (inocula: domestic sewage and lake water, respectively).

Mineralization of N-phenyl-1-naphthylamine (measured by the evolution of [¹⁴C]carbon dioxide) was 17% in soil and 35% in a soil suspension in buffered salt solution. In contrast to the aquatic studies, the addition of degradable substrates reduced rather than accelerated degradation. It was suggested that the organic materials increased sorption of the N-phenyl-1-naphthylamine. The reported lower degradation in soil may therefore reflect reduced bioavailability of the N-phenyl-1-naphthylamine. Koc values of 2400 and 4600, respectively, were calculated for N-phenyl-1-naphthylamine. Thus, soil sorption is predicted to be moderate to high. From this expected sorption to organic soil constituents and its limited mineralisation in soil, N-phenyl-1-naphthylamine is presumed to have geoaccumulation potential. The probability of infiltration into groundwater is low.

Considering its measured log Kow of 4.2 and data from laboratory tests with Daphnia and freshwater fish, N-phenyl-1-naphthylamine is classified as a substance with moderate bioaccumulation potential. For magna, a mean bioconcentration factor (related to radioactivity) of 637 was calculated following exposure to [¹⁴C] N-phenyl-1-naphthylamine in a static test (solubiliser: acetone; steady state after 12 h). About 50% of the accumulated radioactivity had been eliminated after 53 h in clean water. Bioconcentration factors ranging from 432 to 1285 (related to radioactivity) and from 233 to 694 (related to N-phenyl-1-naphthylamine) were determined in a flow-through system (sublethal N-phenyl-1-naphthylamine concentration) for the bluegill sunfish (*Lepomis macrochirus*) at steady state. Depuration was biphasic, with an elimination of [¹⁴C] N-phenyl-1-naphthylamine of >90% after 8 days; radioactivity could still be detected 32 days after treatment. Bioconcentration factors for N-phenyl-1-naphthylamine in common carp (*Cyprinus carpio*), measured in a flow-through system after 8 weeks, were on the same order of magnitude. N-phenyl-1-naphthylamine is metabolised by terrestrial and aquatic microorganisms and by fish to at least two or three unidentified metabolites

Ecotoxicity:

No BOD was detectable under the conditions of OECD 301C.

Water pollution class (WGK) : 2 - impairment of water quality (own classification)

Fish LC50 (48 h): *Oryzias latipes* 7.9 mg/l

Fish LC50 (8 d): *Lepomis macrochirus* 0.47 mg/l

Daphnia EC50 (48 h): 0.68 mg/l

Daphnia EC50 (21 d): 0.06 mg/l

Algae: EC50 (72 h): *Scenedesmus subs* ≥0.25 mg/l.

■ WGK: Classification in accordance with German Water Resources Act.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
phenyl- alpha- naphthylamine	HIGH		LOW	LOW

Section 13 - DISPOSAL CONSIDERATIONS

■ Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

continued...

PASLODE IMPULSE OIL (B20544F)

Chemwatch Independent Material Safety Data Sheet

Issue Date: 8-Feb-2010

NC317ECP

CHEMWATCH 22-9770

Version No:2.0

CD 2010/1 Page 11 of 12

Section 13 - DISPOSAL CONSIDERATIONS

- Reduction,
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Authority for disposal.
- Bury or incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM:

None (ADG7)

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: ADG7, UN, IATA, IMDG

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE

None

REGULATIONS

Regulations for ingredients

polypropylene glycol monobutyl ether (CAS: 9003-13-8) is found on the following regulatory lists;

"Australia Inventory of Chemical Substances (AICS)"

phenyl-alpha-naphthylamine (CAS: 90-30-2) is found on the following regulatory lists;

"Australia Inventory of Chemical Substances (AICS)", "OECD Representative List of High Production Volume (HPV) Chemicals"

No data for Paslode Impulse Oil (B20544F) (CW: 22-9770)

Section 16 - OTHER INFORMATION

Denmark Advisory list for selfclassification of dangerous substances

Substance	CAS	Suggested codes
phenyl- alpha- naphthylamine	90- 30- 2	Xn Mut3; R68 Repr3; R63 N R50/53

■ Classification of the preparation and its individual components has drawn on official and authoritative

continued...

PASLODE IMPULSE OIL (B20544F)

Chemwatch Independent Material Safety Data Sheet

Issue Date: 8-Feb-2010

NC317ECP

CHEMWATCH 22-9770

Version No:2.0

CD 2010/1 Page 12 of 12

Section 16 - OTHER INFORMATION

sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

This document is copyright. Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH. TEL (+61 3) 9572 4700.

Issue Date: 8-Feb-2010

Print Date: 8-Feb-2010

This is the end of the MSDS.