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NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION

AND ASSESSMENT SCHEME

FULL PUBLIC REPORT

Component of Dehyquart F 75

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Director
Chemicals Notification and Assessment

FULL PUBLIC REPORT

Component of Dehyquart F 75

1. APPLICANT

Henkel Australia Pty Ltd of 83 Maffra Street BROADMEADOWS Victoria 3047 has submitted a standard notification statement in support of their application for an assessment certificate for Component of Dehyquart F 75.

2. IDENTITY OF THE CHEMICAL

Component of Dehyquart F 75 is considered not to be hazardous based on the nature of the chemical and the data provided. Therefore the chemical name, CAS number, molecular and structural formulae, molecular weight and spectral data have been exempted from publication in the Full Public Report and the Summary Report.

Other Names:	quaternary organic salt
Trade Name:	Dehyquart F 75 (contains 75% of notified chemical); Esterquat C_{16}-C_{18}
Molecular Weight:	~800 (calculated)
Method of Detection and Determination:	infrared (IR)
Spectral Data:	IR spectrum

3. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 25°C and 101.3 kPa:	white to light yellowish waxy flakes (Dehyquart F 75)
Boiling Point:	> 150°C
Melting Point:	60 - 64°C
Specific Density:	0.9902 $g.L^{-1}$ at 20°C
Vapour Pressure:	not determined

Water Solubility:	not determined
Partition Co-efficient (n-octanol/water):	not determined
Hydrolysis as a Function of pH:	not determined
Adsorption/Desorption:	not determined
Dissociation Constant:	not determined
Flash Point:	> 150°C (open cup)
Flammability Limits:	not flammable
Autoignition Temperature:	not available
Explosive Properties:	not explosive
Reactivity/Stability:	stable and non reactive; when exposed to fire, strong acids and oxidising agents decomposes to CO, CO_2, SO_2

Comments on Physico-Chemical Properties

Vapour pressure of the notified substance was not determined. The chemical is an organic salt, of relatively high molecular weight. It will be used in water based systems, and could be expected to have low volatility.

Water solubility of the substance was not measured. The notifier claims that due to the surfactant type properties of the chemical, solubility is difficult to measure. For the purposes of this assessment, a solubility of 120 $mg.L^{-1}$ will be used. This was the upper concentration level in fish testing which resulted in slight clouding of water, indicating the limit of solubility had been reached.

Hydrolysis testing was not conducted. The notified chemical does contain ester functionalities, and these may hydrolyse slowly in the environmental pH range. Stability tests conducted on the product (containing the notified chemical at 4.7%) show it to be stable in the pH 3 to 5 range. When stored at a more neutral pH 6.8, the product appeared less stable, with approximately 25% of the notified chemical present in the product being lost in six weeks.

A partition co-efficient for the notified chemical has not been measured. As the chemical contains surfactant properties, such measurement would be invalid. Adsorption/desorption testing was not performed. The notified chemical contains a quaternary ammonium structure, and could undergo anion-exchange in the environment. As such, it may sorb to silicates and organic matter. The notified chemical contains long carbon chains on either side of the quaternary ammonium, and would tend to make the extremities of the molecule hydrophobic in nature.

A dissociation constant was not determined, but the notified chemical would be expected to fully ionise in water.

4. PURITY OF THE CHEMICAL

Degree of Purity: 99.45%

Toxic or Hazardous Impurities:

Chemical name:	arsenic
CAS No.:	7440-38-2
Weight percentage:	below detection limit (1 ppm)
Toxic properties:	genotoxin, toxic (1); threshold for classification as hazardous, 0.1% (2)
Chemical name:	heavy metals
Weight percentage:	below detection limit (total as Pb, 10 ppm)
Toxic properties:	threshold for classification as hazardous (lead compounds), 1% (2)
Chemical name:	dimethyl sulfate
Synonyms:	methyl sulfate,
CAS No.:	77-78-1
Weight percentage:	below detection limit (1 ppm)
Toxic properties:	genotoxic, mutagenic, carcinogen in rodents, suspected human carcinogen (1), threshold for classification as hazardous, 0.1% (2), Time Weighted Average (TWA) 0.1 ppm (3)
Chemical name:	nitrosamine (NDELA)
Synonyms:	N-nitrosodiethanolamine
CAS No.:	116-54-7
Weight percentage:	below detection limit (50 ppb)
Toxic properties:	potent carcinogen in animal studies (1); not listed on NOHSC Australia's *List of Designated Hazardous Substances* (2)
Chemical name:	isopropanol
Synonyms:	isopropyl alcohol
CAS No.:	67-63-0

Weight percentage:	< 0.5%
Toxic properties:	poison by ingestion, can also be absorbed through skin; experimental teratogen, skin and eye irritant (4); TWA 400 ppm (3)

All the toxic or hazardous impurities with the exception of isopropanol, both individually and in total, are at levels below that requiring a hazardous classification according to NOHSC's *List of Designated Hazardous Substances* (Designated List) (2) and *Approved Criteria for Classifying Hazardous Substances* (5). Isopropanol is toxic by ingestion and an eye and skin irritant (5), however it is not listed in (2) and no threshold is available for classification of a mixture on the basis of the isopropanol content.

Non-hazardous Impurities (> 1% by weight):

Chemical Name	*CAS No.*	*Weight %*
triethanolamine	102-71-6	below detection limit (0.05%)

Triethanolamine is not listed in the Designated List (2). Triethanolamine is a precursor to the potent carcinogen NDELA (1). Listed on Toxline (1) as causing skin irritation through chronic exposure at concentrations over 5%.

Additives/Adjuvants: in formulation Dehyquart F 75

Chemical name:	C_{16}-C_{18} fatty alcohol
Synonyms:	Lanette O
CAS No.:	67662-27-0
Weight percentage:	25%

5. USE, VOLUME AND FORMULATION

The notified chemical will be imported as 75% component of Dehyquart F 75. It will be used as a cationic surfactant (conditioning agent) in hair creams and emulsions at concentrations of 2 and 5%.

The volume of Dehyquart F 75 to be imported is 5 000 kg in the first year and 10 000 kg per year for years two to five. This corresponds to 3 750 kg and 7 500 kg of the notified chemical.

6. OCCUPATIONAL EXPOSURE

Dehyquart F 75 is a solid (waxy flakes) and will be imported in 25 kg bags. Exposure during transport and warehousing will be limited and significant exposure will only occur if the bags are damaged. Dehyquart F 75 is not classified as Dangerous Goods under the *Australian Code for the Transport of Dangerous Goods by Road and Rail* (6).

Occupational exposure to the notified chemical will be greatest during reformulation of the Dehyquart F 75. Four groups of personnel will potentially be exposed. These groupings are described in the following table:

Category of worker	Number	Exposure period	Description of process	Safety equipment etc
Research & Development	3	6 hr/day 15 day/year	prepare trial batches, disperse product with lab mixers	Fume hoods, lab coats, safety glasses, gloves
Quality Control	5	4 hr/day 30 day/year	sampling and testing raw materials, product	Lab coats, gloves, safety glasses
Dispensing and compounding	8	8 hr/day 30 day/year	weighing, transferral	General and local ventilation (vapour removal), gloves, uniforms, safety glasses, safety shoes
Production	25	8 hr/day 30 day/year	operation and cleaning of automated filling equipment	General and local ventilation, gloves, uniforms, safety glasses

The non volatile nature of the notified chemical will limit exposure to inhalation of particles when handling the raw material and dermal and eye contact when handling the dispersed and liquefied formulations.

The actual mixing of the ingredients to formulate hair care products occurs in 4 000 L sealed tanks, during the process the mixture is heated to 80°C. The final formulation is piped through sealed and automated equipment and packaged in 500 ml containers. This will minimise exposure to hazardous volatiles present in the formulation at low concentration.

7. PUBLIC EXPOSURE

There appears to be negligible potential for public exposure to the notified substance arising from industrial processes.

The final concentration of the notified chemical in hair care products is estimated by the notifier to be up to 5% (ie. 4% of Dehyquart F 75). According to the notifier, the products are intended to be rinsed off shortly after application. There is clear potential for public exposure to the notified substance through the use of such hair care preparations. Contact would be predominantly via the skin and eye, although accidental or intentional oral ingestion is also possible.

8. ENVIRONMENTAL EXPOSURE

Release

When imported, the surfactant is stored and transported in its 25 kg bags. Any spillage of the raw material will be easily swept up as it is in solid (flake) form. The notifier estimates a release of around 1% during reformulation processes. These releases are broken down as follows:

Process	Residues/batch (kg)	Residues/year (kg)
Cleaning containers	0.3	15
Compounding	0.2	10
Cleaning equipment	1.0	50

Reformulation is carried out at one site only. This site has a primary treatment plant which neutralises the effluent and removes concentrated material prior to disposal. The notifier anticipates all the waste outlined above will be in the form of solid material, (sludge from the on site treatment plant or otherwise) which is disposed of to secure landfill.

After compounding into hair care products, the end product contains around 3% of the notified chemical, and is packaged in 500 mL, blow moulded plastic bottles contained in fibre board containers for transporting to retail sites. Any release to the environment through accidental spillage would be minimal due to the physical state of the product (cream or emulsion), and the small container sizes.

During end use, conditioning agents are applied during the course of washing hair. Therefore, the majority of the notified chemical (up to 7500 kg per annum) will be released to sewer during end use, when the conditioning agents applied to hair are rinsed out.

A small percentage of the end product, probably less than 2%, will remain as residues in containers. This will be disposed of with household waste, and be landfilled.

Fate

Any chemical which goes to landfill would be expected to remain associated with the sediments and not leach, due to its expected adsorption to silicates and organic matter.

The majority of the notified chemical will be released to sewer during end use. A BODIS (BOD Test for Insoluble Substances), conducted as a two phase closed bottle test, modified from OECD TG 301D, was performed on the notified substance. Using this test, a rate of degradability of above 60% can be considered readily biodegradable. After 28 days, 79% of the notified chemical had been degraded indicating that, under aerobic conditions, the chemical could be considered readily biodegradable.

Due to the ionic nature of the notified substance, and hydrophobic nature of the extremities of the molecule, once in the sewage treatment plant the chemical could be expected to associate with sludge. An anaerobic biodegradability test was carried out in accordance with the Guidelines for the Screening of Chemicals for Anaerobic Biodegradability (7). The total biodegradation results from the sum of gas and DIC (Dissolved inorganic carbon) production, in that the corresponding values of control compositions (without test substance) are deducted from the results of the test composition. After the test duration of 77 days, total biodegradation was in excess of 70%, so under anaerobic conditions, the notified chemical can be considered as readily biodegradable.

9. EVALUATION OF TOXICOLOGICAL DATA

9.1 Acute Toxicity

Summary of the acute toxicity of component of Dehyquart F 75

Test	*Species*	*Outcome*	*Reference*
acute oral toxicity	rat	LD_{50} > 2 000 mg.kg^{-1}	8
	mouse	#LD_{50} > 2 000 mg.kg^{-1}	*9
skin irritation	rabbit	#not an irritant	10
eye irritation	rabbit	#not an irritant	11
skin sensitisation	guinea pig	sensitiser	12
skin sensitisation	human	**not a sensitiser	13

* only summary provided
# test material Dehyquart F 75 (75% of notified chemical)
** at induction and challenge concentrations tested

9.1.1 Oral Toxicity (8)

Species/strain:	Wistar rat
Number/sex of animals:	5M/5F
Observation period:	14 days
Method of administration:	gavage in distilled water
Clinical observations:	none
Mortality:	nil
Morphological findings:	none
Test method:	in accordance with OECD guidelines (14)

LD_{50}: > 2 000 $mg.kg^{-1}$

Result: the notified chemical was of low acute oral toxicity in rats

9.1.2 Skin Irritation (10)

Species/strain: rabbit/New Zealand albino

Number/sex of animals: 3 (sex not stated)

Observation period: 75 hours

Method of administration: 0.5 g of Dehyquart F 75 (75% notified chemical), under semi occlusive dressing for 4 hours

Draize scores (15):

Time after treatment (days)	***Animal#***		
	1	***2***	***3***
Erythema			
1	[a]0	0	1
3	0	0	1
Oedema			
1	0	0	0
3	0	0	0

[a] see Attachment 1 for Draize scales

Test method: in accordance with OECD guidelines (14)

Result: at 75% the notified chemical was not a skin irritant in rabbits

9.1.3 Eye Irritation (11)

Species/strain: New Zealand albino rabbits

Number/sex of animals: 3 (sex not stated)

Observation period: 72 hours

Method of administration: 0.1 g of Dehyquart F 75 (75% notified chemical), into the conjunctival sac of one eye, the other eye serving as control

	Draize scores (15) of unirrigated eyes: animals were limited to were no effects on the conjunctival effects were one of the three test	all effects in the test the conjunctiva, there cornea or iris; the redness for 48 hours in animals

Test method: in accordance with OECD guidelines (14)

Result: at 75% the notified chemical was not an eye irritant in rabbits

9.1.4 Skin Sensitisation (12)

Species/strain: Pirbright white guinea pig

Number of animals: 10 control, 20 treatment

Induction procedure: 12.5% dilution of test substance in distilled water; 3 applications once/week for 6 hours under occlusive dressing;

Challenge procedure: 14 days after third induction, maximally non-irritating concentration, 3%, applied for 6 hours; 21 days, 1% applied for 6 hours

Challenge outcome:

	Test animals		***Control animals***	
Challenge concentration	***24 hours****	***48 hours****	***24 hours***	***48 hours***
1%	**0/20	3/20	0/10	0/10
3%	3/20	8/20	0/10	2/10

* time after patch removal
** number of animals exhibiting positive response

Test method: in accordance with OECD guidelines (14)

Result: skin sensitiser in guinea pigs

9.1.5 Skin Sensitisation, repeat insult patch test (13)

Species/strain: human volunteers

Number of volunteers: 88 completed study

Induction procedure: 0.4 ml of test article on patch applied for 24 hours on days 1,3,5,8,10,12,15,17 and 19;

	concentration 0.5. 1.0 and 2.0% active ingredient in distilled water
Challenge procedure:	day 36 patch applied for 24 hours; concentration 1% active ingredient in distilled water
Challenge outcome:	no positive results at challenge, no positive or negative controls in study
Test method:	according to Stotts, 1980 (16)
Result:	not a sensitiser under these test conditions

9.2 Repeated Dose Toxicity (17)

this study was conducted on an analogue of the notified chemical, Stepantex VS 90

Species/strain:	rat/Sprague-Dawley CD
Number/sex of animals:	10M/10F per dose
Method of administration:	orally in distilled water
Dose/Study duration::	doses: 0, 100, 300, 1 000 $mg.kg^{-1}.day^{-1}$ for 96 days , 131 days for main study
Clinical observations:	3 mortalities during study, all males, 2 deaths attributed to ether anaesthesia, third was in high dose group; this high dose animal also showed daily weight loss
Clinical chemistry/Haematology	an intermediate haematological examination showed an increased thromobocytes in 300 $mg.kg^{-1}$ males, a final examination showed a decrease in mean cell volume in high dose females; an intermediate biochemical examination showed high dose males to have an increase in alanine transaminase (ALT) and calcium content, high dose females also had an increased ALT content; in the final examination the high dose animals again had elevated ALT, males in addition had a slight increase in potassium and females an increase in creatin and chloride and a slight increase in alkaline phosphatase (AP)
Histopathology:	results were complicated by bacterial

	infection, however dose related effects were apparent; swelling of mucous membrane was observed in the omasum of high dose animals; isolated males in the high dose group showed histological effects in the bladder (increased desquamation, localised regressive changes in the epithelium to focal epithelium denudation without inflammatory reaction in the submucous area);
Test method:	in accordance with OECD guidelines (14)
Result:	significant dose related effects at 1 000 $mg.kg^{-1}.day^{-1}$ indicating target organ is the liver (elevated ALT) and secondary effects on the bladder (irritation); no systemically damaging effects at dose rate of 300 $mg.kg^{-1}.day^{-1}$

9.3 Genotoxicity

9.3.1 *Salmonella typhimurium* Reverse Mutation Assay (18)

Strains:	TA 98, TA 100, TA 1535, TA 1537, TA 1538
Concentration range:	25 - 400 $\mu g.plate^{-1}$ without liver microsomal activation; 22.2 - 1 800 plate with liver microsomal activation
Test method:	in accordance with OECD guidelines (14)
Result:	the notified chemical was not mutagenic in this system

9.3.2 Micronucleus Assay in the Bone Marrow Cells of the Mouse (19)

this test was conducted using an analogue of notified chemical, Stepantex VS 90

Species/strain:	mouse/albino CFW 1
Number and sex of animals:	6M/6F per group
Dose:	5 000 $mg.kg^{-1}$
Method of administration:	oral gavage
Test method:	in accordance with OECD guidelines (14)
Result:	no statistically significant increase in micronucleated cells in polychromatic erythrocytes treated with test substance; possible indication of toxic effects (reduced polychromatic: normochromatic ratio in females), positive controls gave appropriate response; in test system notified chemical did not induce chromosomal mutations.

9.3.3 Other studies

An open epicutaneous test (Burckhardt test) (20) was undertaken using a 10% dispersion of the notified chemical. The test used 20 human volunteers and the dispersion was applied to the inner side of one forearm. The dispersion is applied every 30 seconds for a period of 30 minutes. The area is then washed and any effects recorded. The test produced no indications of irritancy.

9.4 Overall Assessment of Toxicological Data

The notified chemical has a low oral toxicity to rats. The dermal toxicity is unknown however quaternized fatty acid esters, such as the notified substance, are generally considered to be of low dermal toxicity. When tested as a 75% concentration in a formulation Dehyquart F 75, the oral and dermal toxicity was also low. Dehyquart F 75 was not a skin or eye irritant in rabbits (at a concentration of 75%) or a skin irritant (at 10% concentration) in a study using human volunteers.

A guinea pig skin sensitisation study indicated that the notified chemical has the potential to cause skin sensitisation in guinea pigs. However in a human repeat insult patch test (HRIPT) no signs of skin sensitisation were observed. On this basis the notified chemical would not be classified as hazardous. Although only low induction and challenge concentrations were used, this study as well as being more predictive than animal studies is also more rigourous. Individuals are patched for 9 times for 24 hours compared with 3 times for 6 hours. The highest induction dose was 2%

(repeat insult patch test) followed by a challenge concentration of 1% again via application of a patch. In addition, the notifier provided information indicating that in human volunteer studies, with 830 subjects, rinse formulations containing 1% of the notified chemical did not cause adverse effects. These data were not cited and there was no indication if the study was conducted with repeat applications.

A 90 day repeat dose study using an analogue of the notified chemical, Stepantex VS 90, in rats indicated that the effective dose, not resulting in significant signs of systemic toxicity, was 300 $mg.kg^{-1}.day^{-1}$. At this dose level some minor effects on haematological parameters were seen. At 1 000 $mg.kg^{-1}.day^{-1}$ there were effects on the biochemistry with elevated ALT levels indicative of effects on the liver. There were other minor effects on clinical chemistry such as potassium, creatinine and chloride levels. There were additional dose related effects on the bladder indicative of irritation. The results indicate that the target organ is the liver.

In an Ames test, with and without metabolic activation there was no indication of mutagenic potential. Stepantex VS 90, an analogue of the notified chemical, gave negative results in an micronucleus assay to determine the clastogenic potential.

10. ASSESSMENT OF ENVIRONMENTAL EFFECTS

The following ecotoxicity studies have been supplied by the notifier. The tests were carried out following EEC guidelines.

Ecotoxicity Test Results:

Test	Species	Results (mg/L)
Acute Toxicity (S; N)	Zebra barbel (*Brachydanio rerio*)	96 h LC_{50}=42
Immobilisation (S; N)	Water Flea (*Daphnia magna*)	48 h EC_{50}=45
Growth Inhibition (S; N)	Algae (*Scenedesmus subspicatus*)	72 h ErC_{50}=44
		72 h EbC_{50}=11
Bacteria Inhibition	*Pseudomonas putida*	IC_{50}=24

S=Static; N=Nominal Concentration.

At no point of evaluation during fish testing were sublethal effects noticeable. Two tests were conducted simultaneously, one directly measuring the test substance at room temperature, and the other, obtained through a warming of the stock solution to achieve a better “dissolved” test substance. Contrary to expectations, the stock solution prepared at room temperature exhibited higher toxicity.

The EC_{50} for *Daphnia* was calculated according to Stephan. Concentrations of product in the test solution were measured through TOC analysis, and the settlement rate at every time of evaluation was considered to be more than 80%. The stock solution was prepared at 50°C and allowed to cool prior to transferring to test vessels.

Algae testing was carried out in accordance with DIN 38412. The evaluation of the data derived from algal testing was effected with the help of a LOTUS 1-2-3 table calculation and the test and results are acceptable.

Testing of the notified chemicals inhibition activity to waste water bacteria involved heating the stock solution to around 50°C using ultrasound for 5 minutes, then pipetting out of this suspension (under constant stirring) the corresponding volumes. The suspension was noted as homogenous and slightly cloudy. A reaction period of 30 minutes between the bacteria and test solution, and an airing period of the same duration was used. The results indicate the notified chemical is slightly toxic to wastewater bacteria.

11. ASSESSMENT OF ENVIRONMENTAL HAZARD

The notified chemical is compounded into creams and emulsions for use as hair conditioning agents. End use of these products will result in the conditioners being rinsed to municipal sewers during hair cleaning operations.

As the product will be used all around the country, and sent to sewage treatment plants in both city and country locations, a predicted environmental concentration (PEC) based on continental use has been calculated.

It is assumed that 100% of the notified chemical will be released to sewer over the year.

PEC Calculation:

Import volume	7500 kg
Amount discharged to sewer	100%
No of days per year	365
Volume discharged to sewer per day	20.5 kg
Sewer output per day*	2 700 ML
Concentration in Sewer Treatment Plant	7.6 $\mu g.L^{-1}$ (ppb)

* Sewer output based on Australian population of 18 million people, each using 150 L water per day.

The PEC is prior to any removal through adsorption to sludge in the sewage treatment plant, or further dilution in receiving waters, and is still 3 orders of magnitude less than the most sensitive observed effect of 72 h EbC_{50}=11 $mg.L^{-1}$ for algae.

The potential environmental hazard can be rated as low.

12. ASSESSMENT OF PUBLIC AND OCCUPATIONAL HEALTH AND SAFETY EFFECTS

The notified chemical has a molecular weight greater than the 500 Dalton threshold for permeability across biological membranes; however, it is not so large as to preclude this process. It has very low levels of toxic or hazardous impurities, well below any threshold requiring hazardous classification on this basis (2).
The toxicological data provided indicate that the notified chemical is unlikely to be of

significant concern for occupational health under the conditions of use. Skin sensitisation potential shown in animals was not seen in human repeat patch tests. However, given that results from this study indicated the potential for skin irritation at concentrations above 2%, following repeated exposure, dermal exposure should be minimised. This will also limit the likelihood of skin sensitisation occuring in more sensitive individuals such as atopics. Efforts should therefore be directed at limiting dermal contact with the notified chemical in its more concentrated forms. These recommendations should be strictly adhered to by those workers who may be accidentally exposed during reformulation processes where the notified chemical is present at high concentrations (75%), see below.

Exposure during transport and warehousing will be limited. The raw material is imported as a solid (waxy flakes) in 25kg bags. The raw material is used to formulate hair care products. It is dispersed and compounded with other ingredients in a largely closed process. The main exposure pathways will be inhalational when handling the raw material as a solid and dermal and ocular when handling the liquefied dispersion. The notified chemical is not expected to be volatile therefore inhalational exposure will only occur through inhalation of particulates and should be limited as it is in the form of waxy flakes not a powder.

The potential for occupational exposure will be greatest during reformulation. The dermal route is the most likley route for exposure and as mentioned above given the concern for skin irritation following repeat exposure, dermal exposure should be minimised. During this process the expected low vapour pressure should limit further potential for inhalational exposure. General and local ventilation are also available to minimse potential exposure.

The potential for public exposure to the notified chemical is considered to be significant through its incorporation into hair care products as a conditioning agent at approximately 3%. Although component of Dehyquart F 75 causes skin sensitisation in guinea pigs, negative results were obtained in a patch test study in humans. Given that hair care products will contain approximately 3% of the notified chemical and are intended to be rinsed off after application, the notified chemical is not expected to pose a skin sensitisation hazard in humans.

In the case of accidental spillage during transport, the public may be exposed to the notified chemical. This is minimised by the recommended practices for storage and transportation. Emergency procedures for the containment and clean up of accidental spills are available and should be followed.

13. RECOMMENDATIONS

To minimise occupational exposure to the notified chemical, component of Dehyquart F 75, the following guidelines and precautions should be observed:

- Industrial clothing should conform to the specifications detailed in AS 2919 (21) and AS 3765.1 (22);
- Impermeable gloves or mittens should conform to AS 2161 (23);

- All occupational footwear should conform to AS/NZS 2210 (24);
- Spillage of the notified chemical should be avoided, spillages should be cleaned up promptly with absorbents which should then be put into containers for disposal;
- Good personal hygiene should be practised to minimise the potential for ingestion;
- A copy of the material safety data sheet should be easily accessible to employees.

14. MATERIAL SAFETY DATA SHEET

The MSDS for the imported formulation Dehyquart F 75 containing the notified chemical was provided in accordance with the NOHSC *National Code of Practice for the Preparation of Material Safety Data Sheets* (25).

This MSDS was provided by the applicant as part of the notification statement. It is reproduced here as a matter of public record. The accuracy of this information remains the responsibility of the applicant.

15. REQUIREMENTS FOR SECONDARY NOTIFICATION

Under the Act, secondary notification of the notified chemical shall be required if any of the circumstances stipulated under subsection 64(2) of the Act arise. No other specific conditions are prescribed.

16. REFERENCES

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Attachment 1

The Draize Scale for evaluation of skin reactions is as follows:

Erythema Formation	*Rating*	*Oedema Formation*	*Rating*
No erythema	0	No oedema	0
Very slight erythema (barely perceptible)	1	Very slight oedema (barely perceptible)	1
Well-defined erythema	2	Slight oedema (edges of area well-defined by definite raising	2
Moderate to severe erythema	3	Moderate oedema (raised approx. 1 mm)	3
Severe erythema (beet redness)	4	Severe oedema (raised more than 1 mm and extending beyond area of exposure)	4

The Draize scale for evaluation of eye reactions is as follows:

CORNEA

Opacity	*Rating*	*Area of Cornea involved*	*Rating*
No opacity	0 none	25% or less (not zero)	1
Diffuse area, details of iris clearly visible	1 slight	25% to 50%	2
Easily visible translucent areas, details of iris slightly obscure	2 mild	50% to 75%	3
Opalescent areas, no details of iris visible, size of pupil barely discernible	3 moderate	Greater than 75%	4
Opaque, iris invisible	4 severe		

CONJUNCTIVAE

Redness	*Rating*	*Chemosis*	*Rating*	*Discharge*	*Rating*
Vessels normal	0 none	No swelling	0 none	No discharge	0 none
Vessels definitely injected above normal	1 slight	Any swelling above normal	1 slight	Any amount different from normal	1 slight
More diffuse, deeper crimson red with individual vessels not easily discernible	2 mod.	Obvious swelling with partial eversion of lids	2 mild	Discharge with moistening of lids and adjacent hairs	2 mod.
Diffuse beefy red	3 severe	Swelling with lids half-closed	3 mod.	Discharge with moistening of lids and hairs and considerable area around eye	3 severe
		Swelling with lids half-closed to completely closed	4 severe		

IRIS

Values	*Rating*
Normal	0 none
Folds above normal, congestion, swelling, circumcorneal injection, iris reacts to light	1 slight
No reaction to light, haemorrhage, gross destruction	2 severe