VVF (India) Limited

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Telephone: 91-22-40282000; Fax: 91-22-24073771
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MATERIAL SAFETY DATA SHEET

Product Name : Behenyl Alcohol	Version : R2.00	Date: May 15, 2012

1.Identification of the substance/mixture and of the company/undertaking

Product details

1.1 Trade name : Vegarol® 22 70; Vegarol® 22 80; Vegarol® 22 90

1.2 REACH Registration data

Pre-registration no.	Docosan-1-ol	05-2115237792-43-0000
Pre-registration no.	Icosan-1-ol	05-2115237569-36-0000
Registration no.	Octadecan-1-ol	01-2119485907-20-0012

1.3 Application of the substance / the preparation usages:

- : Manufacture of personal care, cosmetic preparations.
- : Manufacture of pulp, paper and paper products.
- : Manufacture of bulk, large scale chemicals (including petroleum products).
- : Manufacture of fine chemicals.
- : Manufacture of rubber products.

1.4 Manufacturer/Supplier:

VVF (India) Limited, Plot no. 109, Sion (E) MUMBAI – 400022

1.5 Further information obtainable from:

Contact person : Mr.V.R.Krishnan.
Phone : +91-22-40282092
Fax : +91-22-24073771
Email ID : krishnan.vr@vvfltd.com

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

2.1.1 Classification according to Regulation (EC) No 1272/ 2008 : Not applicable.

2.1.2 Classification according to Directive 67/548/EEC or Directive 1999/45/EC : Not applicable.

2.2 Information concerning particular hazards for human and environment : Not applicable

2.2.1.Label elements

Labelling according to Regulation (EC) No 1272/2008
Hazard pictograms : Not applicable.
Signal word : Not applicable.
Hazard-determining components of labelling: Not applicable.
Hazard statements : Not applicable.

2.2.2 Labelling according to EU guidelines: Observe the general safety regulations when handling chemicals

2.3 Other Hazard None

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Additional information:

Common Chemical Name: This product is blend of fatty alcohol, mainly with carbon chain length of 16**,** 18, 20, 22 & 24
This product is blend of. Typical composition is

Name	CAS No.	EINECS No	% by Weight
Docosan-1-ol	661-19-8	211-546-6	68% Min,
Eicosan-1-ol	629-96-9	211-119-4	20% Max.
Octadecan-1-ol	112-92-5	204-017-6	20% Max.
Hexadecan-1-ol	36653-82-4	253-149-0	2.0 % Max.
Tetracosanol	506-51-4	208-043-9	2.0% Max
Description: Fatty alcohol blend with even numbered carbon chain from C16 to C24 alcohol			

Molecular formula : $C_nH_{(2n+1)}CH_2OH$, Where in n is 15 to 23
Molecular weight : ~ 320

4. FIRST AID MEASURES

General information
: A rescuer should wear personal protective equipment, such as rubber gloves and air-tight goggles.
: After inhalation – No dust expected in normal condition in case of dust or mist supply fresh air; consult doctor if irritation occurs.
: After skin contact -Immediately take off all contaminated clothing. Gently wash with plenty of soap and water. Get medical advice if skin irritation or rash occurs.
: After eye contact - Remove contact lenses, if present and easy to do. Rinse cautiously with water for several minutes. If eye irritation persists get medical attention.
: After swallowing - Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician in case of large quantities of this material are swallowed.

5. FIRE FIGHTING MEASURES

Suitable extinguishing agents
: Use fire extinguishing methods suitable to surrounding conditions.
: Dry chemical or carbon dioxide for small fires and use foam for large fires
: Protective equipment: Wear self contained breathing apparatus for fire fighting. If necessary use respirators and components tested and approved under appropriate government standards such as National Institute for Occupational Safety and Health (NIOSH) (US) or CEN (EU) European Committee for Standardization.

Additional information
: Uninvolved persons should evacuate to a safe place. In case of fire in the surroundings remove movable containers if safe to do so .Dust if present it is potentially combustible.

6. ACCIDENTAL RELEASE MEASURES

Person-related safety precautions	**:** Use personal protective equipment. Keep people away from and upwind of spill/leak. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc
Measures for environmental protection	: Prevent product from entering drains, ground water.
Measures for cleaning/collecting	**:** Pick up mechanically. Sweep dust to collect it into an airtight container, taking care not to disperse it. Adhered or collected material should be promptly disposed off, in accordance with appropriate laws and regulations
Additional information	**:** Refer to section 8 and 13 for additional information on personal protection equipment and disposal methods.

7. HANDLING AND STORAGE

Handling

Information for safe handling	**:** Handling is performed in a well ventilated place. **:** Wear suitable protective equipment. **:** Avoid contact with skin, eyes and clothing. Prevent dispersion of dust. **:** Wash hands and face thoroughly after handling. **:** Use a local exhaust if dust or aerosol will be generated**.**
Information about fire and explosion protection	**:** Protect from sources of heat, ignition and flame. : Dust is potentially combustible.

Storage

Requirements to be met by storerooms and receptacles:

Install a closed system or local exhaust so that workers will not be exposed directly to dust. Also install safety shower and eye bath.

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Information about storage in one common storage facility:
Keep away from possible contact with incompatible substances such as mineral acids, source of heat and flame.

Further information about storage conditions:
Store in a cool and dark and well ventilated place.
Keep containers tightly closed. Store away from incompatible materials such as oxidizing agents.

Specific Use(s)

For bulk handling and storage follow above notes.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ingredients with limit values that require monitoring at the workplace	: Not required
Personal protective equipment	: Immediately remove all soiled and contaminated clothing
General protective and hygienic measures	: The usual precautionary measures are to be adhered to when handling chemicals as per general good industrial hygiene practices.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory protection	: Not regulated in normal operation if handling solid. In case of dust or mist use respirators and components tested and approved under appropriate government standards such as National Institute for Occupational Safety and Health (NIOSH) (US) or CEN (EU) European Committee for Standardization
Protection of hands	: The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Material of gloves	: Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
	: Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
	: The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer
Penetration time of glove material	: The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Eye protection	: Safety glasses.

Body protection:	: Protective clothing. Protective boots, if the situation requires such as presence of mist or dust.
Ingredients with limit values that require monitoring at the workplace	: Not required

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information

Appearance:

Form :	:Solid (Liquid above 60 deg C)
Colour:	:Colourless / White
Odour:	: Characteristic, mild fatty

Change in condition

Melting point/Melting range	: 64 to 70 °C
Boiling point/Boiling range	: Product is expected to decompose without boiling as in the range of 335°C to 380 ^{0}C
Flash point	: The flash point of a commercial sample of eicosan-1-ol is 176°C, & of docosan-1-ol is 210°C.
Explosive properties	: Not available, Study not conducted as per Reach Annex VII. Product does not contain chemical group associated with explosive property
Oxidising properties	: Not available
Vapour density	: Not available
Self igniting	: Approx 256 - 257°C

9. PHYSICAL AND CHEMICAL PROPERTIES

Danger of explosion	: Product is not flammable
Vapour pressure at 38°C	: The vapour pressure of a commercial sample of octadecan-1-ol is approx. 0.001 mBar (equivalent to approx. 0.1 Pa) The vapour pressure of a commercial sample of eicosan-1-ol is <1 x 10^{-3} mBar (equivalent to 0.1 Pa) The vapour pressure of a commercial sample of docosan-1-ol is <0.001 mBar (equivalent to <0.1 Pa)
Relative density	: 0.91 at 20°C
Solubility in / Miscibility with	: The water solubility, individually of octadecan-1-ol, eicosan-1-ol and docosan-1-ol is <1 mg/l at 23°C.
Viscosity (Kinematic) at	: The kinematic viscosity of eicosan-1-ol is 8 mm2/s and of docosan-1-ol is 9.67 mm2/s at 80°C.
Evaporation Rate	: Not available
Additional information	: The octanol-water partition coefficient of eicosan-1-ol & docosan-1-ol is 8.3 (by HPLC method).

10 STABILITY AND REACTIVITY

Thermal decomposition	: No decomposition if used according to specifications
Conditions to be avoided	: Sources of heat, ignition and flames.
Materials to be avoided	: Strong acids and oxidising agents.
Dangerous decomposition products	: When heated to decomposition it emits acrid smoke and fumes, Carbon monoxide, Carbon di-oxide, soot, aldehydes and ketones.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity: In general the long chained aliphatic alcohols (linear and essentially linear) is of a low order of acute toxicity upon oral administration.

LD/LC50 values relevant for classification:

Name	CAS No.	LD50 (Oral)	LD50 (Dermal)	LC 50(Oral) rat
1-Docosanol	661-19-8	> 10,000 mg/kg Rat > 2000 mg/kg Rat	Low toxicity expected; LD50 > 2000 Key information read across from 1-icosanol.	LC50 expected to be > 8.1 x 10^{-5} ppm(substantially saturated atmospheric concentration) DATA WAIVED
1-Eicosanol	629-96-9	> 10,000 mg/kg Rat	>16800 (rabbit)	LC50 expected to be > 0001 ppm, (substantially saturated atmospheric concentration) DATA WAIVED
1-Octadecanol	112-92-5	> 5000 mg/kg (rat) > 2000 mg/kg (rat)	> 2000 mg/kg (Key information was read across from 1-tetradecanol.)	LC50 expected to be > 0.003 ppm (substantially saturated atmospheric Concentration) DATA WAIVED.

11. TOXICOLOGICAL INFORMATION

On the skin : Non irritant
On the eye : Non irritant
Sensitization : Expected to be non-irritant (Read across from 1-Octadecanol)

Aliphatic alcohols in the range C18 to C24 carbon chain with chain lengths of C18 and above are non-irritant to skin.

Additional toxicological information:
The substance is not subject to classification according to the latest version of the EU lists.

Repeated dose toxicity
NOAEL (No observable adverse effect level):

Name	CAS no.	Species	Route	Duration	Value
1-Docosanol	661-19-8	Rat	Oral	26 Weeks	> 1000mg/kg
1-Eicosanol	629-96-9	Low systemic toxicity expected			
1-Octadecanol	112-92-5	Rat Rat	Oral Diet	4 weeks 5 weeks	> 1000mg/kg >200 mg/kg

Alcohol C18-22 (CAS no.- 97552-91-5) - Low systemic toxicity expected (Read across substance).

CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
Toxicity for reproduction:

Name	CAS .NO	Rat, Fertility
1-Docosanol	661-19-8	NOAEL >1000 , (Reproductive organs)
1-Eicosanol	629-96-9	Not expected to affect fertility
1-Octadecanol	112-92-5	NOAEL = 2000 mg/kg (Fertility)
C18-22 Alcohol	97552-91-5	Not expected to affect fertility (Read across substance)

Remark : The lack of genotoxic effect across the long chain fatty alcohol reflect that none of them are likely to be carcinogenic
: Collective data indicate that C6-C24 this product is non-mutagenic.
: Overall, there are no concerns that the category of long chain Aliphatic Alcohols might adversely affect fertility.

12. ECOLOGICAL INFORMATION

Information about elimination (persistence and degradability)
Ready biodegradation data:

Name	**CAS. NO.**	**Method**	**Result (**% degradation)
1-Docosanol	661-19-8	301B	: 87.9% in 28 days at 13.5 mg/l : 83% in10 day window
1-Eicosanol	629-96-9	301B	: 88.4% in 28 days at 15.6 mg/l : 83.4% in10 day window
1-Octadecanol	112-92-5	301D	:38% in 29 days at 5 mg/l : 69% in 29 days at 2 mg/l : < 60% in 10 days window
1-Octadecanol	112-92-5	301B	: 95.6% in 28 days at 14.5 mg/l : 90.2% in 10 day window

Behaviour in environmental systems:
Mobility and bioaccumulation potential:
The data suggest that long-chain alcohols in C6-24 category are non-bioaccumulative.
Bioaccumulation:
Bio concentration factor (BCF) = BCF <2000 L/kg, hence Not bioaccumulative.

Mobility and bioaccumulation potential:
The data suggest that long-chain alcohols in C6-24 category are non-bioaccumulative.

Bioaccumulation:

Sr.No.	Name	CAS No.	Log Kow	BCF
1	1-Eicosanol	629-96-9	7.75	1400
2	1-Octadecanol	112-92-5	7.19	2700

Bio-concentration factor (BCF) = Log Kow values above 4.5 for carbon chain length C18 and above suggest that, these long chain fatty alcohol are not bio-accumulative

Aerobic degradation: Read across from 1-Octadecanol (CAS no. 112-92-5)

Method	Sediment samples dosed with the test chemical	
Source of sludge	Ohio natural river sediment	Great Miami natural river sediment
% degradation at end of test at the end of 60 days	51.5 % (at test substance concentration of 336 µ g/kg)	71.6% (at test substance concentration of 172 µg/kg)

Anaerobic degradation: Read across from 1-Hexadecanol (CAS no. 36653-82-4)

Method	: Batch test using ^{14}C labelled test material
Source of sludge	: Digester sludge fortified with activated sludge
% degradation at end of test	: 90% (at test substance concentration of 1 mg/l) after 28 days

Ecotoxical effects:
Aquatic toxicity

1-Octadecanol, (CAS No.112-92-5)	
LC_{50} (96 Hr)	: >0.4 (based on nominal concentration), Loading rate greater than water solubility (LoS) : Water solubility- 0.0011 mg/l at 25°C : Species – S. Gairdneri, : Method- OECD 203
1-Docosanol (CAS No. 661-19-8)	
LC_{50} (96 Hr)	:> 1000 (based on nominal concentration), Loading rate greater than water solubility (LoS) : Water solubility (estimated) , approx - 0.001 mg/l : Species – Oncorhynchus mykiss, Method- OECD 203

1-Docosanol (CAS No. 661-19-8), 1-Eicosanol (CAS no. 629-96-9), C18-22 Alcohol (Cas no. 97552-91-5) predicted to be non-toxic at the limit of solubility based on partition model method for invertebrate (Daphnia)for commercial products.

Additional ecological information:
General notes : Generally not hazardous for water
Results of PBT and vPvB assessment : This product is not PBT or vPvB

13 DISPOSAL CONSIDERATIONS	
Product Recommendation	: Must not be disposed together with household garbage.: Do not allow product to reach sewage system
Uncleaned packaging recommendation	: Disposal methods should be in accordance with local, federal and state environmental regulations.

14.TRANSPORT INFORMATION

This product is not regulated / restricted chemical for transport.

15. REGULATORY INFORMATION

Inventory status **:** TSCA (USA),Australia, DSL (Canada), China, EINECS (EU) , ENCS (Japan), Korea, PICCS (Philippines), Switzerland**.**

Labeling according to Regulation (EC)

This product is not classified as dangerous according to 67/548/EEC (DSP/DPD) and 1272/2008.

Chemical safety assessment : A Chemical Safety Assessment has been carried out.

National regulations

Other regulations, limitations and prohibitive regulations : The substance is not listed as SVHC. (Substances of very high concern) according to REACH, Article 57

16: OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship

Department issuing MSDS Product safety department.

Contact

Contact person : Mr.V.R.Krishnan
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Abbreviations and acronyms

IMDG :International Maritime Code for Dangerous Goods
EINECS :European Inventory of Existing Commercial Chemical Substances
CAS :Chemical Abstracts Service (division of the American Chemical Society)
LC 50 :Lethal concentration, 50 percent
LD 50 :Lethal dose, 50 percent
IMDG :International Maritime Code for Dangerous Goods
EINECS : European Inventory of Existing Commercial Chemical Substances
CAS Chemical Abstracts Service (division of the American Chemical Society

Sources :
:REGULATION (EC) No 1272/2008 Of The European Parliament and of the council classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/ EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
: http://ecb.jrc.ec.europa.eu/esis/
:http://echa.europa.eu/chem data/authorisation process/candidate list table en.asp
: Chemical safety report - C6-24 Alcohol category provided by the lead registrant

16: OTHER INFORMATION

	: IUCLID:http://ecb.jrc.ec.europa.eu/IUCLID-DataSheets/67762418.pdf : http://actor.epa.gov/actor/faces/GenericChemical.jsp
Revised Information	Change in the name of organisation

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MSDS Authorised By	Dr. Kashinath Pandit	

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