SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

- Trade name RHOVANIL
- CAS-No. 121-33-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Uses of the Substance/Mixture

- Manufacture of food products
- Flavours
- Perfumes, fragrances
- Pharmaceutical excipient
- Starting raw material for pharmaceutical industry

Uses advised against

- Active pharmaceutical ingredient
- Synthesis intermediate in organic chemistry of pharmaceutical compounds
- Animal feedstuff

1.3 Details of the supplier of the safety data sheet

Company

Solvay Specialty Chemicals Asia Pacific Ptd. Ltd.
1, Biopolis Drive #05-01/06, Amnios, Singapore 138622.
Tel : +65 62911921

E-mail address

manager.sds@solvay.com

1.4 Emergency telephone number

India: +65 3158 1198 [CareChem 24]
MULTI LINGUAL EMERGENCY NUMBER (24/7)
Europe/Latin America/Africa:+44 1235 239 670 (UK)
Middle East/Africa speaking Arabic:+44 1235 239 671 (UK)
Asia Pacific:+65 3158 1074 (Singapore)
China : +86 512 8090 3042
North America : 800 424 9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989

- Not classified as hazardous according to criteria laid down in Part I of Schedule 1

GHS Classification (UN)

Acute toxicity, Category 5	H303: May be harmful if swallowed.
Eye irritation, Category 2A	H319: Causes serious eye irritation.
Acute aquatic toxicity, Category 3	H402: Harmful to aquatic life.

2.2 Label elements

GHS label elements (UN)

Hazardous products which must be listed on the label

- CAS-No. 121-33-5 vanillin

Pictogram

Signal word

- Warning

Hazard statements

- H303	May be harmful if swallowed.
- H319	Causes serious eye irritation.
- H402	Harmful to aquatic life.

Precautionary statements

General

- None

Prevention

- P264	Wash skin thoroughly after handling.
- P273	Avoid release to the environment.
- P280	Wear eye protection/ face protection.

Response

- P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P312	Call a POISON CENTER/doctor if you feel unwell.
- P337 + P313	If eye irritation persists: Get medical advice/ attention.

Storage

- None

Disposal

- P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards which do not result in classification

- Combustible solid.
- Divided solid.
- May form explosive dust-air mixture.

SECTION 3: Composition/information on ingredients

3.1 Substance

- Formula C8H8O3

Information on Components and Impurities

Chemical name	CAS-No.	GHS Classification	Concentration [%]
vanillin	121-33-5	Acute toxicity, Category 5 ; H303 Eye irritation, Category 2A ; H319 Acute aquatic toxicity, Category 3 ; H402	99.95

For the full text of the H-Statements mentioned in this Section, see Section 16.

3.2 Mixture

- Not applicable, this product is a substance.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

- Show this safety data sheet to the doctor in attendance.
- First aider needs to protect himself.
- Place affected clothing in a sealed bag for subsequent decontamination.

In case of inhalation

- Move to fresh air.
- If breathing is irregular or stopped, administer artificial respiration.
- Consult a physician if necessary.

In case of skin contact

- Take off contaminated clothing and shoes immediately.
- Wash off with soap and water.
- Call a physician if irritation develops or persists.

In case of eye contact

- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- If eye irritation persists, consult a physician

In case of ingestion

- Do NOT induce vomiting.
- Rinse mouth with water.
- If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

- no data available

4.3 Indication of any immediate medical attention and special treatment needed

- no data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

- Water spray
- powder
- Carbon dioxide (CO2)
- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

- None known.

5.2 Special hazards arising from the substance or mixture

- Combustible solid.
- Risk of dust explosion.

5.3 Advice for firefighters

Special protective equipment for firefighters

- Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing
- Wear self-contained breathing apparatus for firefighting if necessary.

Specific fire fighting methods

- Cool containers/tanks with water spray.
- Do not inhale fumes.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Avoid contact with eyes
- Do not breathe dust.
- Personal protective equipment
- Boots
- Wear suitable protective equipment.
- Tightly fitting safety goggles
- Keep away from flames and hot surfaces.

6.2 Environmental precautions

- Do not allow uncontrolled discharge of product into the environment.

6.3 Methods and materials for containment and cleaning up

Recovery
- Keep in properly labelled containers.
- Keep in suitable, closed containers for disposal.

Decontamination/cleaning
- Wash off with plenty of water.
- Recover the cleaning water for subsequent disposal.

Disposal
- Treat recovered material as described in the section "Disposal considerations".

6.4 Reference to other sections

- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 13. DISPOSAL CONSIDERATIONS

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Blanket with inert gas.
- Earth the equipment.

- Keep away from fire, sparks and heated surfaces.
- Avoid dust formation.
- Prevent the build-up of electrostatic charge.
- Protect from moisture.

Hygiene measures

- Ensure that eyewash stations and safety showers are close to the workstation location.
- Use clean, well-maintained personal protection equipment.

- Wash hands before breaks and at the end of workday.
- When using do not eat, drink or smoke.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- Protect against light.
- Keep container tightly closed and dry.
- Keep away from heat.

- Keep away from: Alkalis and caustic products.

Packaging material

Suitable material
- Polyethylene
- Tinted glass.

Unsuitable material
- Aluminium and its alloys.
- Steel drum

Remarks
- Plastic bottles.
- glass bottles

7.3 Specific end use(s)

- Contact your supplier for additional information

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

- Contains no substances with occupational exposure limit values above their regulatory reporting threshold.

8.2 Exposure controls

Control measures

Engineering measures
- Effective exhaust ventilation system
- Dust must be extracted directly at the point of origin.

Individual protection measures

Respiratory protection
- Use a respirator with an approved filter if a risk assessment indicates this is necessary.

Hand protection
- Where there is a risk of contact with hands, use appropriate gloves
- Gloves must be inspected prior to use.
- Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye protection
- Tightly fitting safety goggles

Skin and body protection
- Protective suit

Hygiene measures

- Ensure that eyewash stations and safety showers are close to the workstation location.
- Use clean, well-maintained personal protection equipment.

- Wash hands before breaks and at the end of workday.
- When using do not eat, drink or smoke.

Protective measures

- The protective equipment must be selected in accordance with current local standards and in cooperation with the supplier of the protective equipment.

- Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards and/or risks that may occur during use.

Environmental exposure controls

- Do not allow uncontrolled discharge of product into the environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Form: Crystalline powder Physical state: solid Colour: white to pale yellow. Particle size: < 75 µm (<= 10 %) Method: laser diffraction
Odour	vanilla
Odour Threshold	No data available
Molecular weight	152.15 g/mol
pH	4.3 (1 % (m/v)) Aqueous solution pKa: 7.3 - 7.4 (25 °C)
Melting point/freezing point	Melting point/range: ca. 81 - 83 °C
Initial boiling point and boiling range	Boiling point/boiling range: 154 °C (13 hPa) 284 °C (1,013 hPa)
Sublimation point	70 °C
Flash point	160 °C (1,022 hPa) closed cup Method: EU Test Guideline A9
Evaporation rate (Butylacetate = 1)	No data available
Flammability (solid, gas)	Not highly flammable Method: test Directive 92/69/EEC - Annex V Part A10 May form combustible dust concentrations in air Combustible Solids

Flammability/Explosive limit	Explosiveness: Not explosive
Auto-ignition temperature	Not applicable solid for which the melting point is < 160 °C.
Vapour pressure	0.0029 hPa (25 °C) 0.17 hPa (65 °C)
Vapour density	5.3 (25 °C)
Density	1.06 g/cm3 (20 °C)
Relative density	No data available
Solubility	Water solubility: 9 g/l (25 °C) Solubility in other solvents: Ethanol : soluble Ethyl acetate : soluble Methanol : soluble Diethylether : soluble
Partition coefficient: n-octanol/water	log Pow: 1.17 - 1.21 (25 °C)
Decomposition temperature	No data available
Viscosity	Viscosity, dynamic : Not applicable, solid Viscosity, kinematic : Not applicable, solid
Explosive properties	negative Method : EU Test Guideline A14 Mechanical sensitivity (shock) negative Method : EU Test Guideline A14 Mechanical sensitivity (friction) negative Method : EU Test Guideline A14 Thermal sensitivity
Oxidizing properties	Not considered as oxidizing, Structure-activity relationship (SAR)

9.2 Other information

Surface tension Not considered as surface-active, Structure-activity relationship (SAR)

SECTION 10: Stability and reactivity

10.1 Reactivity

- No hazards to be specially mentioned.

10.2 Chemical stability

- Stable at room temperature.

10.3 Possibility of hazardous reactions

- Hazardous polymerisation does not occur.

10.4 Conditions to avoid

- Heat, flames and sparks.
- Static electricity
- Avoid dust formation.

10.5 Incompatible materials

- Reacts with the following substances:
- Strong bases
- Aluminium

10.6 Hazardous decomposition products

Hazardous decomposition products

- On combustion or on thermal decomposition (pyrolysis) releases:
- toxic gases
- (Carbon oxides (CO + CO2)).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity

vanillin

LD50 : 3,300 mg/kg - Rat , for males and females
Method: OECD Test Guideline 401
Unpublished internal reports

LD50: 3,978 mg/kg - Rat , for males and females
Method: OECD Test Guideline 401
Unpublished internal reports

The product has a low acute toxicity

Acute inhalation toxicity No data available

Acute dermal toxicity

vanillin

LD50 : > 2,000 mg/kg - Rat , male and female
Method: OECD Test Guideline 402
Not classified as hazardous for acute dermal toxicity according to GHS.
No mortality observed at this dose.
Unpublished internal reports

Acute toxicity (other routes of administration)	No data available

Skin corrosion/irritation

vanillin	Not irritating to rabbits on cutaneous application. Unpublished internal reports

Serious eye damage/eye irritation

vanillin	Rabbit Causes serious eye irritation. Method: OECD Test Guideline 405 Unpublished internal reports

Respiratory or skin sensitisation

vanillin	Magnusson and Kligman method - Guinea pig Does not cause skin sensitisation. Unpublished internal reports Local lymph node assay - Mouse Maximum Stimulation Index < 3 Published data Humans no cutaneous sensitisation reaction observed Diluted product Published data

Mutagenicity

Genotoxicity in vitro

vanillin	In vitro tests did not show mutagenic effects Published data Unpublished internal reports

Genotoxicity in vivo

vanillin	In vivo micronucleus test - Mouse female Oral Method: OECD Test Guideline 474 negative Gavage Unpublished internal reports

Carcinogenicity

vanillin	Oral toxicity tests on rats and mice did not reveal any carcinogenic potential. internal evaluation Published data

Toxicity for reproduction and development

Toxicity to reproduction/Fertility

vanillin — No effect observed in male or female reproductive system in repeated dose tox studies ., The product is not considered to affect fertility., internal evaluation, Unpublished internal reports

Developmental Toxicity/Teratogenicity

vanillin — no embryotoxic or teratogenic effects have been observed, Published data

STOT

STOT - single exposure

vanillin — The substance or mixture is not classified as specific target organ toxicant, single exposure according to GHS criteria.

STOT - repeated exposure

vanillin — The substance or mixture is not classified as specific target organ toxicant, repeated exposure according to GHS criteria.

vanillin — Oral exposure 6 Months - Rat , male
NOAEL: 650 mg/kg
Unpublished internal reports

Experience with human exposure — No data available

Aspiration toxicity

vanillin — Not applicable

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish

vanillin — LC50 - 96 h : 57 mg/l - Pimephales promelas (fathead minnow)
flow-through test
Analytical monitoring: yes

Measured concentration.
Published data

Harmful to fish.

Acute toxicity to daphnia and other aquatic invertebrates

vanillin	EC50 - 48 h : 36.8 mg/l - Daphnia magna (Water flea) static test Analytical monitoring: yes Method: OECD Test Guideline 202 Measured concentration. Unpublished internal reports Harmful to aquatic invertebrates.

Toxicity to aquatic plants

vanillin	ErC50 - 72 h : 120 mg/l - Pseudokirchneriella subcapitata (green algae) static test Analytical monitoring: yes End point: Growth rate Method: OECD Test Guideline 201 Measured concentration. Unpublished internal reports Not harmful to algae (EC/EL50 > 100 mg/L) NOEC - 72 h : 47 mg/l - Pseudokirchneriella subcapitata (green algae) static test Analytical monitoring: yes End point: Growth rate Method: OECD Test Guideline 201 Unpublished internal reports No adverse chronic effect observed up to and including the threshold of 1 mg/L.

Toxicity to microorganisms

vanillin	NOEC : 100 mg/l Respiration inhibition Method: OECD Test Guideline 301C Published data

Chronic toxicity to fish No data available

Chronic toxicity to daphnia and other aquatic invertebrates

vanillin	NOEC: 5.9 mg/l - 21 Days - Daphnia magna (Water flea) semi-static test Analytical monitoring: yes Method: OECD Test Guideline 212 Unpublished reports No adverse chronic effect observed up to and including the threshold of 1 mg/L.

M-Factor

vanillin	(Not applicable)

12.2 Persistence and degradability

Abiotic degradation No data available

Physical- and photo-chemical elimination No data available

Biodegradation

Biodegradability

vanillin	Ready biodegradability study: Method: OECD Test Guideline 301C 97 - 100 % - 14 Days The substance fulfills the criteria for ultimate aerobic biodegradability and ready biodegradability Inoculum: activated sludge Published data

Degradability assessment

vanillin	The product is considered to be rapidly degradable in the environment

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

vanillin	Not potentially bioaccumulable Published data

Bioconcentration factor (BCF)	No data available

12.4 Mobility in soil

Adsorption potential (Koc)

vanillin	Adsorption/Soil Koc: 4898 Published data

Known distribution to environmental compartments

vanillin	Ultimate destination of the product : Water

12.5 Results of PBT and vPvB assessment	This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

Ecotoxicity assessment

Acute aquatic toxicity

vanillin	Harmful to aquatic life.

Chronic aquatic toxicity

vanillin	No adverse chronic effect observed up to and including the threshold of 1 mg/L.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

Prohibition

- Avoid release to the environment.
- Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.

Advice on cleaning and disposal of packaging

- Cleaning is not required prior to disposal.
- Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.

- Dispose of in accordance with local regulations.

SECTION 14: Transport information

ADR
not regulated

RID
not regulated

IMDG
not regulated

IATA
not regulated

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transport regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Local regulations

No data available

Notification status

Inventory Information	Status
United States TSCA Inventory	- Listed on Inventory
Canadian Domestic Substances List (DSL)	- Listed on Inventory
Australia Inventory of Chemical Substances (AICS)	- Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- Listed on Inventory
Mexico INSQ (INSQ)	- Listed on Inventory
New Zealand. Inventory of Chemical Substances	- Listed on Inventory
Taiwan. Chemical Substance Inventory (TCSI)	- Listed on Inventory
EU. European Registration, Evaluation, Authorisation and Restriction of Chemical (REACH)	- When purchased from a European Solvay legal entity, this product is compliant with the registration provisions of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt, pre-registered and/or registered. When purchased from a legal entity outside of Europe, please contact your local representative for additional information.

SECTION 16: Other information

Full text of H-Statements

- H303 May be harmful if swallowed.
- H319 Causes serious eye irritation.
- H402 Harmful to aquatic life.

Further information

- This sheet was updated (refer to the date at the top of this page). Subheadings and text which have been modified since the previous version are indicated with two vertical bars.
- Update
- See section 3
- Distribute new edition to clients

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.