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

1.1 Product identifier

Trade name : RHODIASOLV RPDE NA

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

Uses of the Substance / Mixture : Specific use(s): Intermediate for the synthesis of organic chemicals, Paint additive, Solvent

1.3 Details of the supplier of the safety data sheet

Company : Solvay USA Inc.,
NOVECARE
8 Cedar Brook Drive
Cranbury, NJ, 08512-7500, US
Telephone number: 800-973-7873

1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

2.1 Classification of the substance or mixture

HCS 2012 (29 CFR 1910.1200)

Acute toxicity, Category 4	H332: Harmful if inhaled.
Eye irritation, Category 2B	H320: Causes eye irritation.

2.2 Label elements

HCS 2012 (29 CFR 1910.1200)

Pictogram :

Signal Word : Warning

Hazard Statements:

H320 Causes eye irritation.
H332 Harmful if inhaled.

Precautionary Statements:

Prevention

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.

Response

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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 or doctor/ physician if you feel unwell.
P337 + P313 If eye irritation persists: Get medical advice/ attention.

2.3 Other hazards which do not result in classification

H402: Harmful to aquatic life.

No specific risk when handled in accordance with good occupational hygiene and safety practice.

SECTION 3: Composition/information on ingredients

3.1 Substance

Not applicable, this product is a mixture.

3.2 Mixture

Hazardous Ingredients and Impurities

Chemical Name	Identification number CAS-No.	Concentration [%]
Dimethyl Glutarate	1119-40-0	59 - 73
Dimethyl Succinate	106-65-0	17 - 25
Dimethyl Adipate	627-93-0	10 - 14
Methanol	67-56-1	0.1 - 0.3

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice	:	Show this material safety data sheet to the doctor in attendance. First responder needs to protect himself. Place affected apparel in a sealed bag for subsequent decontamination.
If inhaled	:	If inhaled, remove to fresh air. Consult a physician if necessary.
Skin contact	:	Wash off immediately with plenty of water for at least 15 minutes. If a person feels unwell or symptoms of skin irritation appear, consult a physician. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse.
Eye contact	:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, consult a physician.
Ingestion	:	If victim is conscious: Rinse mouth with water. Keep at rest. Do not induce vomiting without medical advice. Do not leave the victim unattended. Vomiting may occur spontaneously Risk of product entering the lungs on vomiting after ingestion. Lay victim on side. Seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Risks	:	None known.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	:	All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically. There is no specific antidote available.

SECTION 5: Firefighting measures

Flash point	:	212 °F (100 °C) closed cup Flammability class: Will burn

Autoignition temperature	:	680 °F (360 °C)
Flammability / Explosive limit	:	Lower flammability/explosion limit : 0.80 %(V) Upper flammability/explosion limit : 8.10 %(V)

5.1 Extinguishing media

Suitable extinguishing media	:	Water spray Foam Multipurpose powders Carbon dioxide (CO_2)
Unsuitable extinguishing media	:	High volume water jet (burning material will float)

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting	:	Under fire conditions: Will burn On combustion or on thermal decomposition (pyrolysis), releases: Carbon oxides

5.3 Advice for firefighters

Special protective equipment for fire-fighters	:	Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.
Specific fire fighting methods	:	Cool containers/tanks with water spray.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Standard procedure for chemical fires. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions, protective equipment and emergency procedures	:	Avoid contact with the skin and the eyes. Do not breathe vapor. Do not allow uncontrolled discharge of product into the environment. Wear suitable protective equipment. For further information refer to section 8 "Exposure controls / personal protection." Stop the leak. Turn leaking containers leak-side up to prevent the escape of liquid.

6.2 Environmental precautions

Environmental precautions	:	Do not flush into surface water or sanitary sewer system. Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies

6.3 Methods and materials for containment and cleaning up

Recovery	:	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Sweep up and shovel. Keep in suitable, closed containers for disposal.
	:	Keep in properly labeled containers. Never return spills in original containers for re-use.
Decontamination / cleaning	:	Wash off with plenty of water. Recover the cleaning water for subsequent disposal. Decontaminate tools, equipment and personal protective equipment in a segregated area.
Disposal	:	Dispose of in accordance with local regulations.

6.4 Reference to other sections

Reference to other sections	:	7. HANDLING AND STORAGE 8. EXPOSURE CONTROLS/PERSONAL PROTECTION 13. DISPOSAL CONSIDERATIONS

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures	:	Does not require any specific or particular measures.
Advice on safe handling and usage	:	Handle in accordance with good industrial hygiene and safety practice. Do not breathe vapors or spray mist. Avoid contact with skin and eyes. Avoid splashes.
Hygiene measures	:	Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials: 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored. 2) Wash hands and face carefully before eating, drinking, using tobacco,

applying cosmetics, or using the toilet.
3) Wash exposed skin promptly to remove accidental splashes or contact with material.

Use clean, well maintained personal protection equipment.

7.2 Conditions for safe storage, including any incompatibilities

Technical Measures for storage	:	Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.

Storage conditions

Recommended	:	Keep container tightly closed in a dry and well-ventilated place.
To be avoided	:	Keep away from incompatible materials to be indicated by the manufacturer Keep away from open flames, hot surfaces and sources of ignition. Keep away from direct sunlight.
Incompatible products	:	Strong acids Strong bases Strong oxidizing agents Strong reducing agents.

Storage stability

Storage temperature	:	no data available

7.3 Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

Contains no substances with occupational exposure limit values.

NIOSH IDLH (Immediately Dangerous to Life or Health Concentrations)

Ingredients	CAS-No.	Concentration
Methanol	67-56-1	6000 ppm

8.2 Exposure controls

Control measures

Engineering measures : Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures :

Provide adequate ventilation.
Extract at emission point.

Personal protective equipment

Respiratory protection : When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

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

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
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 : Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

Eye contact should be prevented through the use of:

Safety glasses with side-shields

Skin and body protection : Protective suit

impervious clothing
Footwear protecting against chemicals

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials:
1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
2) Wash hands and face carefully before eating, drinking, using tobacco,

applying cosmetics, or using the toilet.
3) Wash exposed skin promptly to remove accidental splashes or contact with material.

Use clean, well maintained personal protection equipment.

Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.
The protective equipment must be selected in accordance with current local standards and in cooperation with the supplier of the protective equipment.
Emergency equipment immediately accessible, with instructions for use.

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.

SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

9.1 Information on basic physical and chemical properties

Appearance	:	Physical state: liquid Color: colorless
Odor	:	sweet
Odor Threshold	:	no data available
pH	:	5.0 - 7.0 (5 % (m/v)) Aqueous solution
Freezing point	:	-40 °F (-40 °C) (727.56 - 757.56 mmHg (970 - 1,010 hPa))
Boiling point/boiling range	:	383 - 421 °F (195 - 216 °C) (760 mmHg (1,013.25 hPa))
Flash point	:	212 °F (100 °C) closed cup Flammability class: Will burn
Evaporation rate (Butylacetate = 1)	:	no data available
Flammability (solid, gas)	:	no data available
Flammability (liquids)	:	no data available
Flammability / Explosive limit	:	Lower flammability/explosion limit: 0.80 %(V) Upper flammability/explosion limit: 8.10 %(V)

Autoignition temperature	:	680 °F (360 °C) Auto-ignition temperature (liquids and gases)
Vapor pressure	:	< 0.1 mmHg (< 0.13 hPa) (77 °F (25 °C))
Vapor density	:	no data available
Density	:	Relative density : 1.0915 (68 °F (20 °C))
Solubility	:	Water solubility : 26 - 40.5 g/l estimated Solubility in other solvents: common organic solvents :
Partition coefficient: n-octanol/water	:	log Pow: 1.4 estimated
Thermal decomposition	:	no data available
Viscosity	:	Viscosity, dynamic : 2.85 mPa.s (68 °F (20 °C))
Explosive properties	:	no data available
Oxidizing properties	:	Nonoxidizing material according to EC criteria

9.2 Other information

Surface tension	:	67.3 mN/m 1 g/l (68 °F (20 °C))

SECTION 10: Stability and reactivity

10.1 Reactivity

Reactivity	:	Stable at normal ambient temperature and pressure.

10.2 Chemical stability

Chemical stability	:	Stable under normal conditions. Stable under recommended storage conditions. See chapter 7. HANDLING AND STORAGE

10.3 Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

Polymerization	:	Hazardous polymerization does not occur.

10.4 Conditions to avoid

Conditions to avoid	:	Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid	:	Strong bases Strong acids Strong oxidizing agents Strong reducing agents.

10.6 Hazardous decomposition products

Decomposition products	:	On combustion or on thermal decomposition (pyrolysis), releases: (Carbon oxides (CO + CO2)).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity	:	LD50 : > 5,000 mg/kg - Rat , female No mortality observed at this dose. Information given is based on data obtained from similar substances. Unpublished reports
Acute inhalation toxicity	:	LC50 - 4 h : > 11 mg/l - Rat , male and female No mortality observed at this dose. Information given is based on data obtained from similar substances. Unpublished reports
Acute dermal toxicity	:	LD50 : > 2,000 mg/kg - Rat No mortality observed at this dose. Unpublished internal reports
Acute toxicity (other routes of administration)	:	Not applicable

Skin corrosion/irritation

Skin irritation	:	Rabbit No skin irritation Unpublished internal reports

Serious eye damage/eye irritation

Eye irritation	:	Eye irritation According to the data on the components According to the classification criteria for mixtures.

Respiratory or skin sensitization

Sensitization : Local lymph node assay - Mouse
not sensitizing
Unpublished internal reports

Mutagenicity

Genotoxicity in vitro : Product is not considered to be genotoxic

Mutagenicity (Salmonella typhimurium - reverse mutation assay)
with and without metabolic activation
negative
Information given is based on data obtained from similar substances.
Unpublished reports

Mutagenicity (in vitro mammalian cytogenetic test)
Strain: Human lymphocytes
with metabolic activation
positive
Information given is based on data obtained from similar substances.
Unpublished reports

Mutagenicity (in vitro mammalian cytogenetic test)
Strain: Human lymphocytes
without metabolic activation
negative
Information given is based on data obtained from similar substances.
Unpublished reports

Genotoxicity in vivo : Product is not considered to be genotoxic

In vivo micronucleus test - Mouse
Inhalation
negative
Information given is based on data obtained from similar substances.
Unpublished reports

Carcinogenicity

Carcinogenicity :

No information available.

This product does not contain any ingredient designated as probable or suspected human carcinogens by:
NTP
IARC
OSHA
ACGIH

Toxicity for reproduction and development

Toxicity to reproduction / fertility : Fertility study 1 generation - Rat , for males and females
Inhalation
NOAEL parent: 1 mg/l
no impairment of fertility has been observed
No toxicity to reproduction
Information given is based on data obtained from similar substances.
Unpublished reports

Developmental Toxicity/Teratogenicity : Rat
Inhalation
NOAEL teratogenicity: 1 mg/l
NOAEL maternal: < 0.16 mg/l

No effect observed on development
Information given is based on data obtained from similar substances.
Published data

STOT

STOT-single exposure : Toxicology Assessment:
The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure : Toxicology Assessment:
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Oral 14 Days - Rat
NOEL: 980 mg/kg
Information given is based on data obtained from similar substances.
Unpublished reports

Dermal 14 Days - Rat
NOEL: 1000 mg/kg
Information given is based on data obtained from similar substances.
Unpublished reports

Inhalation 90 Days - Rat
NOEC: 0.05 mg/l
Data available only for some components.
Unpublished reports

Experience with human exposure

Experience with human exposure : Inhalation

Methanol	:	Target Organs: Central nervous system Target Organs: optic nerve Symptoms: Inhalation may provoke the following symptoms: Dizziness Nausea acidosis Blurred vision Impairment of vision Published data

Experience with human exposure : Ingestion

Methanol	:	Target Organs: Central nervous system Target Organs: optic nerve Symptoms: Ingestion may provoke the following symptoms: Dizziness Nausea acidosis Abdominal pain Vomiting Central nervous system depression Headache Breathing difficulties Impairment of vision Blurred vision Coma Death May cause respiratory arrest. Poison, may be fatal or cause blindness if swallowed.

Aspiration toxicity

Aspiration toxicity	:	No aspiration toxicity classification

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish	:	LC50 - 96 h : 18 - 24 mg/l - Pimephales promelas (fathead minnow) Unpublished reports
Acute toxicity to daphnia and other aquatic invertebrates.	:	EC50 - 48 h : 112 - 150 mg/l - Daphnia magna (Water flea) Unpublished reports
Toxicity to aquatic plants	:	ErC50 - 72 h : > 85 mg/l - Pseudokirchneriella subcapitata (green algae) Unpublished internal reports

Toxicity to microorganisms

Dimethyl Succinate : static test

EC50 - 3 h : > 1,000 mg/l
semi-static test
Method: OECD Test Guideline 209
The product does not have any known adverse effects on the aquatic organisms tested
Information given is based on data obtained from similar products
Unpublished reports

Methanol : IC50 - 3 h : > 1,000 mg/l - activated sludge
Growth inhibition
Method: OECD Test Guideline 209
Published data

Ecotoxicity assessment

Acute aquatic toxicity : Harmful to aquatic organisms.

Chronic aquatic toxicity : According to the data on the components
Does not have any known long term adverse effects on the aquatic organisms tested
According to the classification criteria for mixtures.

12.2 Persistence and degradability

Biodegradability

Biodegradability : Readily biodegradable.

Ultimate aerobic biodegradability
Method: OECD Test Guideline 301
97 % - 28 d
Unpublished internal reports

Ratio BOD / ThOD

Methanol : no data available

Stability

Photodegradation

Methanol : Degradat. indirect photolysis: 50 %
Degrad. time indirect photolysis: 17.2 d
Published data

Degradability assessment

Degradability assessment

Dimethyl Glutarate	:	The product is considered to be rapidly degradable in the environment
Dimethyl Succinate	:	The product is considered to be rapidly degradable in the environment
Dimethyl Adipate	:	The product is considered to be rapidly degradable in the environment

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water	:	Not potentially bioaccumulable Unpublished reports
Bioconcentration factor (BCF)	:	no data available

12.4 Mobility in soil

Adsorption potential (Koc)

Methanol	:	Koc: 1 Will not adsorb on soil. Structure-activity relationship (SAR)
Known distribution to environmental compartments	:	Ultimate destination of the product: Water Structure-activity relationship (SAR) Ultimate destination of the product: Soil Structure-activity relationship (SAR)

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

Dimethyl Glutarate	:	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).
Dimethyl Succinate	:	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).
Dimethyl Adipate	:	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).
Methanol	:	Not classified as PBT substance., Not classified as vPvB.

12.6 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

Prohibition	:	Should not be released into the environment. Do not let product enter drains.
Advice on Disposal	:	Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

Advice on cleaning and disposal of packaging

Advice	:	Empty the packaging completely prior to disposal. Completely empty the packaging prior to decontamination. Carefully drain and then steam clean. Offer rinsed packaging material to local recycling facilities.
Other data	:	Dispose of in accordance with local regulations.

SECTION 14: Transport information

DOT
not regulated

TDG
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 transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information

15.1 Notification status

United States TSCA Inventory	:	YES (positive listing) On TSCA Inventory
Canadian Domestic Substances List (DSL)	:	YES (positive listing) All components of this product are on the Canadian DSL.
Australia Inventory of Chemical Substances (AICS)	:	YES (positive listing) On the inventory, or in compliance with the inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	:	YES (positive listing) On the inventory, or in compliance with the inventory
Korea. Korean Existing Chemicals Inventory (KECI)	:	YES (positive listing) On the inventory, or in compliance with the inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	:	YES (positive listing) On the inventory, or in compliance with the inventory

15.2 Federal Regulations

SARA 311/312 Hazards

Fire Hazard	no
Reactivity Hazard	no
Sudden Release of Pressure Hazard	no
Acute Health Hazard	yes
Chronic Health Hazard	no

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

Ingredients	CAS-No.	Reportable quantity
Methanol	67-56-1	5000 lb
Sulfuric acid, dimethyl ester	77-78-1	100 lb

SARA 304 Reportable Quantity

Ingredients	CAS-No.	Reportable quantity
Sulfuric acid, dimethyl ester	77-78-1	100 lb

SARA 302 Reportable Quantity

Ingredients	CAS-No.	Reportable quantity
Sulfuric acid, dimethyl ester	77-78-1	100 lb

15.3 State Regulations

California Prop 65 : WARNING! This product contains a chemical known in the State of California to cause cancer.
Sulfuric acid, dimethyl ester

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.
Methanol

SECTION 16: Other information

NFPA-Classification

Health : 2 moderate
Flammability : 1 slight
Instability or Reactivity : 0 minimal

HMIS-Classification

Health : 2 moderate
Flammability : 1 slight
Reactivity : 0 minimal

Further information

Date Prepared : 12/10/2014
Further information : Product classified under the US GHS format.

Key or legend to abbreviations and acronyms used in the safety data sheet

ACGIH	:	American Conference of Governmental Industrial Hygienists
OSHA	:	Occupational Safety and Health Administration
WHMIS	:	Workplace Hazardous Materials Information System
NTP	:	National Toxicology Program
IARC	:	International Agency for Research on Cancer
SAEL	:	Solvay Acceptable Exposure Limit
NIOSH	:	National Institute for Occupational Safety and Health
NFPA	:	National Fire Protection Association
HMIS	:	Hazardous Materials Identification System (Paint & Coating)

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 another 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.