



SEPARATION SYSTEMS, INC.

Experts in Gas Chromatography

100 Nightingale Lane  
Gulf Breeze, Florida 32561

US Sales: (850) 932-1433

Fax: (850) 934-8642

www.separationsystems.com

## SAFETY DATA SHEET

Creation Date 08-Mar-2007

Revision Date 17-Oct-2016

Revision 2.1

### 1. Identification

**Product Name:** Solventless RT Standard for D2887

**Product Part Number:** SD-SS3E-02-NS

**Synonyms** Retention Time Standard; Solventless Retention Time (RT) Standard for D2887; Paraffin Hydrocarbon Mixture

**Recommended Use** Analytical Chemistry

**Uses advised against** No Information available

#### Details of the supplier of the safety data sheet

##### Company

Separation Systems, Inc.  
100 Nightingale Lane  
Gulf Breeze, FL 32561  
Tel: (850) 932-1433

##### Emergency Telephone Number

Call CHEMTREC, day or night:  
Domestic North America 800-424-9300  
International (703) 527-3887 (collect calls accepted)

### 2. Hazard(s) identification

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200):

Flammable liquids	Category 2
Aspiration Hazard	Category 1
Skin Corrosion/Irritation	Category 2
Reproductive Toxicity	Category 2
Specific target organ toxicity (single exposure), narcotic effect	Category 3
Specific target organ toxicity – (repeated exposure)	Category 2
Hazardous to the aquatic environment, long-term hazard	Category 2

#### Label Elements

##### Signal Word

Danger

##### Hazard Statements

Highly flammable liquid and vapor  
May be fatal if swallowed and enters airways  
Causes skin irritation  
May cause drowsiness or dizziness  
Suspected of damaging fertility or unborn child  
Causes damage to organs through prolonged or repeated exposure  
Toxic to aquatic life with long lasting effects



#### Precautionary Statements

##### Prevention

## Retention Time Standard

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Do not breathe dust/gas/fume/mist/vapors/spray.

Wash hands/skin thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Avoid release to the environment.

Wear protective gloves/protective clothing/eye protection/face protection.

Do NOT induce vomiting.

Collect spillage. Hazardous to aquatic environment.

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

### Response

IF exposed or concerned: Get medical attention/advice

### Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON Center or doctor/physician if you feel unwell.

### Skin

If skin irritation occurs: Get medical advice/attention.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Wash contaminated clothing before reuse.

### Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

### Fire

In case of fire: Use dry sand, dry chemical, or alcohol-resistant foam for extinction.

### Storage

Store locked up.

Store in a well-ventilated place. Keep container tightly closed. Keep cool.

### Disposal

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

### Hazards not otherwise classified (HNOC)

None identified

### Other hazards

None identified

## 3. Composition / information on ingredients

Product Information:				
Substance Name		CAS #	Percent	SARA 313
Retention Time Standard Mix		NONE	100	YES
Component Information:				
Ingredient Name		CAS #	Percent	SARA 313
n-Pentane	C <sub>5</sub> H <sub>12</sub>	109-66-0	0.0 – 5.0	NO
n-Hexane	C <sub>6</sub> H <sub>14</sub>	110-54-3	0.0 – 5.0	YES
n-Heptane	C <sub>7</sub> H <sub>16</sub>	142-82-5	0.0 – 5.0	NO
n-Octane	C <sub>8</sub> H <sub>18</sub>	111-65-9	0.0 – 5.0	NO
n-Nonane	C <sub>9</sub> H <sub>20</sub>	111-84-2	0.0 – 5.0	NO
n-Decane	C <sub>10</sub> H <sub>22</sub>	124-18-5	0.01 – 5.0	NO
n-Undecane	C <sub>11</sub> H <sub>24</sub>	1120-21-4	0.01 – 5.0	NO
n-Dodecane	C <sub>12</sub> H <sub>26</sub>	112-40-3	0.01 – 5.0	NO
n-Tridecane	C <sub>13</sub> H <sub>28</sub>	629-50-5	0.01 – 5.0	NO
n-Tetradecane	C <sub>14</sub> H <sub>30</sub>	629-59-4	0.01 – 5.0	NO
n-Pentadecane	C <sub>15</sub> H <sub>32</sub>	629-62-9	0.01 – 5.0	NO

## Retention Time Standard

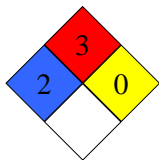
n-Hexadecane	C <sub>16</sub> H <sub>34</sub>	544-76-3	0.01 – 5.0	NO
n-Heptadecane	C <sub>17</sub> H <sub>36</sub>	629-78-7	0.01 – 5.0	NO
n-Octadecane	C <sub>18</sub> H <sub>38</sub>	593-45-3	0.01 – 5.0	NO
n-Nonadecane	C <sub>19</sub> H <sub>40</sub>	629-92-5	0.0 – 5.0	NO
n-Eicosane	C <sub>20</sub> H <sub>42</sub>	112-95-8	0.01 – 5.0	NO
n-Tetracosane	C <sub>24</sub> H <sub>50</sub>	646-31-1	0.01 – 5.0	NO
n-Octacosane	C <sub>28</sub> H <sub>58</sub>	630-02-4	0.01 – 5.0	NO
n-Dotriacontane	C <sub>32</sub> H <sub>66</sub>	544-85-4	0.01 – 5.0	NO
n-Hexatriacontane	C <sub>36</sub> H <sub>74</sub>	630-06-8	0.01 – 5.0	NO
n-Tetracontane crystalline	C <sub>40</sub> H <sub>82</sub>	4181-95-7	0.01 – 5.0	NO
Polywax 655	N/A	9002-88-4	0.0 – 0.3	NO
n-Tetratetracontane	C <sub>44</sub> H <sub>90</sub>	7098-22-8	0.01 – 5.0	NO
N/A = not available				

## 4. First-aid measures

<b>General Advice</b>	Consult a physician. Show this safety data sheet to the doctor in attendance.
<b>Eye Contact</b>	Flush eyes with water as a precaution. Gently remove contacts while flushing.
<b>Skin Contact</b>	Wash off with soap and plenty of water. Consult a physician.
<b>Inhalation</b>	If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
<b>Ingestion</b>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
<b>Most important symptoms/effects</b>	May be fatal if swallowed and enters airways. May cause drowsiness or dizziness. Causes skin irritation.
<b>Indication of immediate medical attention and special treatment needed</b>	No data available.

## 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	CO <sub>2</sub> , dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water spray. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.
<b>Unsuitable Extinguishing Media</b>	Water may be ineffective.
<b>Auto-ignition Temperature</b>	100 °C / 212 °F
<b>Explosion Limits (% in Air)</b>	
<b>Upper</b>	50% vol
<b>Lower</b>	1.3% vol
<b>Specific Hazards Arising from the Chemical</b>	Flammable liquid. Emits toxic fumes under fire conditions. Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions. Forms explosive mixtures in air. May explode when heated.
<b>Hazardous Combustion Products</b>	Carbon oxides
<b>Protective Equipment and Precautions for Firefighters</b>	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

**NFPA****Health**  
2**Flammability**  
3**Instability**  
0**Physical hazards**  
N/A

## 6. Accidental release measures

**Personal Precautions**

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Remove all sources of ignition. Beware of vapors accumulating in low areas and forming explosive concentrations. Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves. Wear appropriate personal protective equipment when cleaning up spills.

**Environmental Precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Avoid discharge into the environment.

**Methods for Containment and Clean Up**

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

## 7. Handling and storage

**Handling**

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition – No smoking. Take measures to prevent the buildup of electrostatic discharge.

**Storage**

Keep containers tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Incompatible with azides or active metals such as sodium, potassium, zinc, etc. – may cause fires and explosions.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

EXPOSURE LIMITS			
Country	Source	Type	Value
USA	ACGIH	TWA	10 ppm
Remarks: Skin			
USA	MSHA Standard-Air	TWA	20 ppm (60 mg/m <sup>3</sup> ) (skin)
USA	OSHA	PEL	8h TWA 20 ppm; Cl 30 ppm; PK100
New Zealand	OEL		
Remarks: Check ACGIH TLV			
USA	NIOSH	TWA	1 ppm (SK)
		STEL	10 ppm (SK)
Poland		NDS	18 mg/m <sup>3</sup>
Poland		ND S Ch	30 mg/m <sup>3</sup>

## Retention Time Standard

Poland		N D S P	-
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<b>Engineering Measures</b>	Safety shower and eye bath. Use non-sparking tools. Use only in a chemical fume hood.
<b>Personal Protective Equipment</b>	
<b>Eye/face Protection</b>	Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH or EN 166.
<b>Skin and body protection</b>	Wear impervious, flame retardant antistatic protective clothing. Handle with gloves. Gloves must be inspected prior to use.
<b>Respiratory Protection</b>	Where risk assessment shows air-purifying respirators are appropriate use full-face respirator with multi-purpose combination or type AXBEK respirator cartridges as backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH or CEN.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of shift.

## 9. Physical and chemical properties

<b>Physical State</b>	Liquid
<b>Appearance</b>	Colorless
<b>Odor</b>	Stench
<b>Odor Threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting Point/Range</b>	-112.0 °C to -111.0 °C
<b>Boiling Point/Range</b>	46 °C / 114.8 °F @ 760 mmHg
<b>Flash Point</b>	-30 °C / -22 °F Method: Closed cup
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid, gas)</b>	Not available
<b>Flammability or explosive limits (% in Air)</b>	
Upper	50 vol %
Lower	1.3 vol %
<b>Vapor Pressure</b>	296.241 mmHg @ 20 °C
<b>Vapor Density</b>	2.67 (Air = 1.0)
<b>Relative Density</b>	1.266 g/cm <sup>3</sup>
<b>Solubility (in water)</b>	Very slightly soluble in cold water
<b>Partition coefficient; n-octanol/water</b>	Log Kow: 2.16
<b>Auto-ignition Temperature</b>	100 °C / 212 °F
<b>Decomposition Temperature</b>	No information available
<b>Viscosity</b>	<0.001 Pas at 20 °C

## 10. Stability and reactivity

<b>Reactive Hazard</b>	None known, based on information available.
<b>Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Heat, flames, and sparks
<b>Incompatible Materials</b>	Alkali metals, zinc, amines, azides, oxidizing agents
<b>Hazardous Decomposition Products</b>	Carbon oxides
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	None under normal processing.

## 11. Toxicological information

**Route of Exposure****Skin Contact:** Causes skin irritation.**Skin Absorption:** May be harmful if absorbed through the skin. Readily absorbed through skin. May be harmful if absorbed through the skin.**Target Organ(s) or System(s)**Liver. Kidneys. Cardiovascular system. Male reproductive system. Female reproductive system. Heart. Nerves. Eyes. **SIGNS AND SYMPTOMS OF EXPOSURE.** Damage to the kidneys. Damage to the liver. Damage to the heart. May cause convulsions.**TOXICITY DATA**

Route of Application	Species	Dose	Type
Inhalation	Human	4,000 ppm	LCLO
Inhalation	Human	2,000 ppm	LCLO
Oral	Rat	1200 mg/kg	LD50
Inhalation	Rat	25,000 mg/m <sup>3</sup>	LC50
Oral	Mouse	2,780 mg/kg	LD50
Inhalation	Mouse	10,000 mg/m <sup>3</sup>	LC50
Oral	Rabbit	2,550 mg/kg	LD50
Oral	Guinea Pig	2,125 mg/kg	LD50

**CHRONIC EXPOSURE**

Species	Dose	Route of Application	Exposure Time	Result
Rat	2 g/kg	Oral	(6-15D PREG)	Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus)
Rat	10 mg/m <sup>3</sup> /8h	Inhalation	(1-22D PREG)	Specific Developmental Abnormalities: Eye, ear. Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive).
Rat	100 mg/m <sup>3</sup> /8h	Inhalation	(1-21D PREG)	Effects on Embryo or Fetus: Fetal death. Specific Developmental Abnormalities: Craniofacial (including nose and tongue). Homeostasis
Rabbit	2100 mg/kg	Oral	(6-19D PREG)	Specific Developmental Abnormalities: Other developmental abnormalities

**CHRONIC EXPOSURE – MUTAGEN**

Result: Laboratory experiments have shown mutagenic effects.

Species	Dose	Cell Type	Mutation test
Human	8 mg/L	Lymphocyte	Sister chromatid exchange
Human	10200 ug/L	Lymphocyte	Sister chromatid exchange

**CHRONIC EXPOSURE – Reproductive Hazard**

Species	Dose	Route of Application	Exposure Time	Result
Man	40 mg/m <sup>3</sup>	Inhalation	(91W MALE)	<i>Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count)</i>
Rat	200 mg/m <sup>3</sup> /24h	Inhalation	(1-21D PREG)	<i>Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea)</i>
Rat	100 mg/m <sup>3</sup> /8h	Inhalation	(1-22D PREG)	<i>Effects on Newborn: Growth statistics (e.g., reduced weight gain)</i>
Rat	30 ug/m <sup>3</sup> /8h	Inhalation	(1-22D PREG)	<i>Effects on Newborn: Behavioral</i>
Rat	600 ppm/6h	Inhalation	(50D MALE)	<i>Paternal Effects: Prostate, seminal vesicle, Cowper's gland, accessory glands. Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).</i>
Mouse	2000 mg/m <sup>3</sup> /2h	Inhalation	(1-21D PREG)	<i>Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Fertility: Litter size (e.g., # fetuses per litter; measured before birth)</i>
Rabbit	350 mg/kg	Oral	(6-19D PREG)	<i>Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).</i>

## 12. Ecological information

### Ecotoxicity

#### ACUTE ECOTOXICITY TEST

Test Type	LC50 Fish
Species	Other fish
Time	96 h
Value	162 mg/L

**Persistence and Degradability** No information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** No information available.

## 13. Disposal considerations

**Product Disposal** Burn in a chemical incinerator equipped with an afterburner and scrubber, but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated Packaging** Dispose of non-refillable packaging/containers as unused product.

## 14. Transport information

**DOT / IATA / TDG / IMDG:** Not regulated.

**Remarks:** De minimis quantities.

## 15. Regulatory information

### UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes

DE MINIMIS: 1 %

NOTES: This product is subject to SARA section 313 reporting requirements.

TSCA INVENTORY ITEM: Yes

#### **CALIFORNIA PROP - 65**

California Prop - 65: This product is or contains chemical(s) known to the state of California to cause developmental toxicity.

US CLASSIFICATION AND LABEL TEXT	
Indication of Danger:	Flammable (USA) Highly Flammable (EU). Toxic.
R:	11-36/38-48/23-62-63
Risk Statements:	Irritating to eyes and skin. Toxic: danger of serious damage to health by prolonged exposure through inhalation. Possible risk of impaired fertility. Possible risk of harm to the unborn child.
Safety Statements:	Keep away from sources of ignition – no smoking. Take precautionary measures against static discharges. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
US Statements	Readily absorbed through skin. Stench. Target organ(s): Eyes. Nerves. Calif. Prop. 65 developmental hazard.

EU DIRECTIVES CLASSIFICATION	
Symbol of Danger:	F-T
Indication of Danger:	Highly Flammable. Toxic.
R:	11-36/38-48/23-62-63
Risk Statements:	Highly flammable. Irritating to eyes and skin. Toxic: danger of serious damage to health by prolonged exposure through inhalation. Possible risk of impaired fertility. Possible risk of harm to the unborn child.
S:	16-33-36/37-45

<b>Safety Statements:</b>	Keep away from sources of ignition – no smoking. Take precautionary measures against static discharges. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
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**CANADA REGULATORY INFORMATION**

Workplace Hazardous Materials Information System (WHMIS) Classification:

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

**16. Other information**

**References:** Not Available

**Creation Date** 08-Mar-2007

**Revision Date** 17-Oct-2016

**Version:** 2.1

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