



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 D7213

Product Part Number: SD-SS3E-03-NS

Synonyms Retention Time Standard, Solventless Retention Time (RT) Standard for D7213, 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 ₅ H ₁₂	109-66-0	0.0 – 5.0	NO
n-Hexane	C ₆ H ₁₄	110-54-3	0.0 – 5.0	YES
n-Heptane	C ₇ H ₁₆	142-82-5	0.0 – 5.0	NO
n-Octane	C ₈ H ₁₈	111-65-9	0.0 – 5.0	NO
n-Nonane	C ₉ H ₂₀	111-84-2	0.0 – 5.0	NO
n-Decane	C ₁₀ H ₂₂	124-18-5	0.01 – 5.0	NO
n-Undecane	C ₁₁ H ₂₄	1120-21-4	0.01 – 5.0	NO
n-Dodecane	C ₁₂ H ₂₆	112-40-3	0.01 – 5.0	NO
n-Tridecane	C ₁₃ H ₂₈	629-50-5	0.01 – 5.0	NO
n-Tetradecane	C ₁₄ H ₃₀	629-59-4	0.01 – 5.0	NO
n-Pentadecane	C ₁₅ H ₃₂	629-62-9	0.01 – 5.0	NO

Retention Time Standard

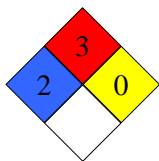
n-Hexadecane	C ₁₆ H ₃₄	544-76-3	0.01 – 5.0	NO
n-Heptadecane	C ₁₇ H ₃₆	629-78-7	0.01 – 5.0	NO
n-Octadecane	C ₁₈ H ₃₈	593-45-3	0.01 – 5.0	NO
n-Nonadecane	C ₁₉ H ₄₀	629-92-5	0.0 – 5.0	NO
n-Eicosane	C ₂₀ H ₄₂	112-95-8	0.01 – 5.0	NO
n-Tetracosane	C ₂₄ H ₅₀	646-31-1	0.01 – 5.0	NO
n-Octacosane	C ₂₈ H ₅₈	630-02-4	0.01 – 5.0	NO
n-Dotriacontane	C ₃₂ H ₆₆	544-85-4	0.01 – 5.0	NO
n-Hexatriacontane	C ₃₆ H ₇₄	630-06-8	0.01 – 5.0	NO
n-Tetracontane crystalline	C ₄₀ H ₈₂	4181-95-7	0.01 – 5.0	NO
Polywax 500	N/A	9002-88-4	0.0 – 0.3	NO
n-Tetratetracontane	C ₄₄ H ₉₀	7098-22-8	0.01 – 5.0	NO
n-Pentacosane	C ₅₀ H ₁₀₂	6596-40-3	0.01-5.0	NO
N/A = not available				

4. First-aid measures

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

5. Fire-fighting measures

Suitable Extinguishing Media	CO ₂ , 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.
Unsuitable Extinguishing Media	Water may be ineffective
Auto-ignition Temperature	100 °C / 212 °F
Explosion Limits (% in Air)	
Upper	50% vol
Lower	1.3% vol
Specific Hazards Arising from the Chemical	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.
Hazardous Combustion Products	Carbon oxides
Protective Equipment and Precautions for Firefighters	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 measure 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 ³) (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 ³

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Poland		ND S Ch	30 mg/m ³
Poland		N D S P	-

Engineering Measures	Safety shower and eye bath. Use non-sparking tools. Use only in a chemical fume hood.
<u>Personal Protective Equipment</u>	
Eye/face Protection	Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH or EN 166.
Skin and body protection	Wear impervious, flame retardant antistatic protective clothing. Handle with gloves. Gloves must be inspected prior to use.
Respiratory Protection	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.
Hygiene Measures	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

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

10. Stability and reactivity

Reactive Hazard	None known, based on information available.
Stability	Stable under normal conditions.
Conditions to Avoid	Heat, flames, and sparks
Incompatible Materials	Alkali metals, zinc, amines, azides, oxidizing agents
Hazardous Decomposition Products	Carbon oxides
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	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 ³	LC50
Oral	Mouse	2,780 mg/kg	LD50
Inhalation	Mouse	10,000 mg/m ³	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 ³ /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 ³ /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 ³	Inhalation	(91W MALE)	<i>Paternal Effects:</i> Spermatogenesis (including genetic material, sperm morphology, motility, and count)
Rat	200 mg/m ³ /24h	Inhalation	(1-21D PREG)	<i>Effects on Fertility:</i> Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea)
Rat	100 mg/m ³ /8h	Inhalation	(1-22D PREG)	<i>Effects on Newborn:</i> Growth statistics (e.g., reduced weight gain)
Rat	30 ug/m ³ /8h	Inhalation	(1-22D PREG)	<i>Effects on Newborn:</i> Behavioral
Rat	600 ppm/6h	Inhalation	(50D MALE)	<i>Paternal Effects: Prostate, seminal vesicle, Cowper's gland, accessory glands.</i> <i>Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).</i>
Mouse	2000 mg/m ³ /2h	Inhalation	(1-21D PREG)	<i>Effects on Fertility:</i> Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). <i>Effects on Fertility:</i> Litter size (e.g., # fetuses per litter; measured before birth)

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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>
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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

Retention Time Standard

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
Safety Statements:	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).

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

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Separation Systems, Inc. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Separation Systems Inc. has been advised of the possibility of such damages.