

**SEPARATION SYSTEMS, INC.***Experts in Gas Chromatography*100 Nightingale Lane
Gulf Breeze, Florida 32561

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SAFETY DATA SHEET

Creation Date 02-June-2009

Revision Date 10-Oct-2016

Revision 2.1

1. Identification

Product Name: ASTM D7096 Response Factor (RF) Standard**Product Part Number:** SD-060-05**Synonyms** Hydrocarbon Standard**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 1
Skin Corrosion/irritation	Category 2
Acute Toxicity, Inhalation	Category 4
Eye Irritation	Category 2A
Reproductive Toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Aspiration Hazard	Category 1
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

Label Elements**Signal Word**

Danger

Hazard StatementsHighly flammable liquid and vapor
May be fatal if swallowed and enters airways
Causes skin irritation
Suspected of damaging fertility or the unborn child
May cause respiratory irritation
May cause drowsiness or dizziness
Very toxic to aquatic life with long lasting effects
Harmful if inhaled
Causes damage to organs through prolonged or repeated exposure
Causes serious eye irritation



Precautionary Statements

Prevention

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.
 Keep container tightly closed.
 Ground/bond container and receiving equipment.
 Use explosion-proof electrical/ventilating/lighting/equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Wear protective gloves/protective clothing/eye protection/face protection.
 Use personal protection equipment as required.
 Avoid breathing dust/fume/gas/mist/vapors/spray.
 Use only outdoors or in a well-ventilated area.
 Wash hands/skin thoroughly after handling.
 Take off contaminated clothing and wash before reuse.
 Avoid release to the environment.

Response

IF exposed or concerned: Get medical advice/attention.
 Call a POISON CENTER or doctor/physician if you feel unwell.
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 IF SKIN irritation occurs: Get medical advice/attention.
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 Do NOT induce vomiting.
 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.
 In case of fire: Use dry sand, dry chemical, or alcohol-resistant foam for extinction.
 Collect spillage. Hazardous to aquatic environment.

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)

Repeated exposure may cause skin dryness or cracking.

3. Composition / information on ingredients

Product Information:		
Substance Name	CAS #	Percent
ASTM D7096 Response Factor (RF) Standard	None	100
Component Information:		
Ingredient Name	CAS #	Percent
Propane	74-98-6	0.32
Isobutane	75-28-5	0.15
Butane	106-97-8	0.23
Isopentane	78-78-4	7.0
Pentane	109-66-0	6.2
2-Methylpentane	107-83-5	4.8
n-Hexane	110-54-3	5.0
2,4-Dimethylpentane	108-08-7	5.1
n-Heptane	142-82-5	9.2

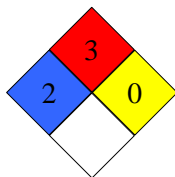
Toluene	108-88-3	13.0
n-Octane	111-65-9	5.8
p-Xylene	106-42-3	14.5
n-Propylbenzene	103-65-1	6.2
n-Decane	124-18-5	3.5
n-Butylbenzene	104-51-8	4.5
n-Dodecane	112-40-3	3.6
n-Tridecane	629-50-5	2.3
n-Tetradecane	629-59-4	2.2
n-Pentadecane	629-62-9	2.2
n-Hexadecane	544-76-3	2.2

4. First-aid measures

General Advice	Consult a physician. Show this Safety Data Sheet to the doctor in attendance. Move out of dangerous area.
Eye Contact	Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Gently remove contacts while flushing. Consult a physician.
Skin Contact	Wash off with soap and plenty of water. Consult a physician.
Inhalation	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Ingestion	Do NOT induce vomiting because of danger of aspirating liquid into lungs, causing serious damage and chemical pneumonitis. If spontaneous vomiting occurs, keep head below hips, or if patient is lying down, turn body and head to side to prevent aspiration and monitor for breathing difficulty. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Most important symptoms/effects	Acute: Headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Delayed: Dry skin and possible irritation with repeated or prolonged exposure.
Indication of immediate medical attention and special treatment needed	No data available.

5. Fire-fighting measures

Suitable Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.
Unsuitable Extinguishing Media	Do not use straight water streams to avoid spreading fire.
Specific Hazards Arising from the Chemical	Carbon oxides.
Protective Equipment and Precautions for Firefighters	Wear self-contained breathing apparatus for firefighting if necessary.
Further Information	Use water spray to cool unopened containers.

NFPAHealth
2Flammability
3Instability
0Physical hazards
N/A

6. Accidental release measures

Personal Precautions

Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating in low areas to form explosive concentrations.

Environmental Precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for Containment and Clean Up

Contain spillage and collect with an electrically protected vacuum or by wet-brushing and place in a container for disposal according to local regulations.

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 charge.

Storage

Keep container tightly closed in a cool, dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Incompatible Materials

Strong oxidizing agents

8. Exposure controls / personal protection

Exposure Guidelines

ACGIH Threshold Limit Values

Component	CAS No.	TWA (ppm)	Notes
Propane	74-98-6	1000	Central nervous system impairment; Cardiac sensitization
Isobutane	75-28-5	1000	Central nervous system impairment; Cardiac sensitization
Butane	106-97-8	1000	Central nervous system impairment
Isopentane	78-78-4	600	Peripheral neuropathy
		1000	Narcosis; Respiratory tract irritation
Pentane	109-66-0	600	Peripheral neuropathy
		1000	Narcosis; Respiratory tract irritation
2-Methylpentane	107-54-3	500	Central nervous system impairment; Upper respiratory tract infection
n-Hexane	110-54-3	50	Central nervous system impairment; Eye irritation; Peripheral neuropathy; Danger of cutaneous absorption
2,4-Dimethylpentane	108-08-7	400	Central nervous system impairment; Upper respiratory tract infection
n-Heptane	142-82-5	400	Central nervous system impairment; Upper respiratory tract irritation
Toluene	108-88-3	20	Visual impairment; Female reproductive; Pregnancy loss
n-Octane	111-65-9	300	Upper respiratory tract irritation
p-Xylene	106-42-3	100	Central nervous system impairment; Upper respiratory tract irritation; Eye irritation
n-Propylbenzene	103-65-1	N/A	-

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n-Decane	124-18-5	N/A	-
n-Butylbenzene	104-51-8	N/A	-
n-Dodecane	112-40-3	N/A	-
n-Tridecane	629-50-5	N/A	-
n-Tetradecane	629-59-4	N/A	-
n-Pentadecane	629-62-9	N/A	-
n-Hexadecane	544-76-3	N/A	-

Engineering Measures Safety shower and eye bath. Use non-sparking tools. Use only in a chemical fume hood. Local exhaust ventilation is recommended when generating excessive levels of vapors from handling or thermal processing.

Personal Protective Equipment

Eye/face Protection Face shield and safety glasses are recommended. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin and body protection Handle with gloves. Gloves must be inspected prior to use. Wear flame retardant antistatic protective clothing.

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. Avoid contact with skin, eyes and clothing. Wash hands before eating, drinking or smoking.

9. Physical and chemical properties

Physical State	Clear Liquid
Appearance	Colorless
Odor	Gasoline-like
Odor Threshold	No available data
pH	No available data
Melting Point/Range	No available data
Boiling Point/Range	No available data
Flash Point	-73.3 °C / -99.9 °F
Evaporation Rate	No available data
Flammability (solid, gas)	No available data
Flammability Limit in Air (%)	
Upper	No available data
Lower	No available data
Vapor Pressure	No available data
Vapor Density	No available data
Relative Density	No available data
Solubility	No available data
Partition coefficient; n-octanol/water	No available data
Auto-ignition Temperature	No available data
Decomposition Temperature	No available data
Viscosity	No available data
VOC Content (%)	No available data
Density	No available data

10. Stability and reactivity

Reactivity	No data available.
Stability	Stable under recommended storage conditions.
Conditions to Avoid	Heat, flames and sparks.
Incompatible Materials	Oxidizing agents, strong oxidizing agents, strong acids.

Hazardous Decomposition Products Hazardous decomposition products formed under fire conditions – carbon oxides.

Hazardous Polymerization Will not occur.

Hazardous Reactions Vapors may form explosive mixture with air.

11. Toxicological information

Acute Toxicity No data available

Inhalation No data available

Dermal No data available

Skin corrosion/irritation No data available

Serious eye damage/eye irritation No data available

Respiratory or skin sensitization No data available

Germ cell mutagenicity No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probably, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity No data available

Specific target organ toxicity – single exposure No data available

Specific target organ toxicity – repeated exposure No data available

Aspiration hazard May be fatal if swallowed and enters airways.

Additional Information

Central nervous system depression; Abdominal pain; Exposure can cause numbness, tingling, and weakness in extremities; Cyanosis; Pulmonary edema. Effects may be delayed.

12. Ecological information

Ecotoxicity No data available.

Persistence and Degradability No data available.

Bioaccumulation No data available.

Mobility in soil No data available.

Other adverse effects An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

13. Disposal considerations

Description of Waste Residues This material may be a flammable liquid waste.

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Safe Handling of Wastes Handle in accordance with applicable local, state, and federal regulations. Use personal protection measures as required.

Disposal of Wastes/Methods Of 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.

Methods of Contaminated Packaging Disposal Dispose of as unused product.

14. Transport information

Transport Information This material when transported via US commerce would be regulated by DOT Regulations.

DOT

UN No.	UN1203
Proper Shipping Name	Gasoline
Hazard Class	3
Packing Group	II
Reportable Quantity (RQ)	556 lbs.

IATA

UN No.	UN1203
Proper Shipping Name	Gasoline
Hazard Class	3
Packing Group	II

IMDG

UN No.	UN1203
Proper Shipping Name	Gasoline
Hazard Class	3
Packing Group	II
EMS-No	F-E, S-E

TDG (Canada)

UN No.	UN1203
Proper Shipping Name	Gasoline
Hazard Class	3
Packing Group	II

15. Regulatory information

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

SARA 311/312 Hazards: The following EPA hazard categories apply to this product:

Acute Health Hazard
Chronic Health Hazard
Fire Hazard

SARA Section 313: The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS No.
n-Hexane	110-54-3
Toluene	108-88-3
p-Xylene	106-42-3

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Massachusetts Right to Know Components

	CAS No.	Revision Date
p-Xylene	106-42-3	2007-07-01
Toluene	108-88-3	2007-07-01
Heptane	142-82-5	1993-04-24
n-Pentane	109-66-0	1993-04-24
Isopentane	78-78-4	2007-03-01
Butane	106-97-8	1994-04-01
n-Hexane	110-54-3	2007-07-01
Propylbenzene	103-65-1	1993-04-24
Butylbenzene	104-51-8	1993-04-24
Octane	111-65-9	1993-04-24
2-Methylpentane	107-83-5	1993-04-24
2,4-Dimethylpentane	108-08-7	1993-04-24
Propane	74-98-6	1993-04-24
Isobutane	75-28-5	1993-04-24

Pennsylvania Right to Know Components

	CAS No.	Revision Date
p-Xylene	106-42-3	2007-07-01
Toluene	108-88-3	2007-07-01
Heptane	142-82-5	1993-04-24
n-Pentane	109-66-0	1993-04-24
Isopentane	78-78-4	2007-03-01
Butane	106-97-8	1994-04-01
n-Hexane	110-54-3	2007-07-01
Propylbenzene	103-65-1	1993-04-24
Butylbenzene	104-51-8	1993-04-24
Octane	111-65-9	1993-04-24
2-Methylpentane	107-83-5	1993-04-24
2,4-Dimethylpentane	108-08-7	1993-04-24
Propane	74-98-6	1993-04-24
Decane	124-18-5	2007-03-01
Dodecane	112-40-3	
Pentadecane	629-62-9	
Tridecane	629-50-5	
Tetradecane	629-59-4	
Isobutane	75-28-5	1993-04-24

New Jersey Right to Know Components

	CAS No.	Revision Date
p-Xylene	106-42-3	2007-07-01
Toluene	108-88-3	2007-07-01
Heptane	142-82-5	1993-04-24
n-Pentane	109-66-0	1993-04-24
Isopentane	78-78-4	2007-03-01
Butane	106-97-8	1994-04-01
n-Hexane	110-54-3	2007-07-01
Propylbenzene	103-65-1	1993-04-24
Butylbenzene	104-51-8	1993-04-24
Octane	111-65-9	1993-04-24
2-Methylpentane	107-83-5	1993-04-24
2,4-Dimethylpentane	108-08-7	1993-04-24
Propane	74-98-6	1993-04-24
Decane	124-18-5	2007-03-01
Isobutane	75-28-5	1993-04-24

California Prop. 65 Components

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

	CAS No.	Revision Date
Toluene	108-88-3	2009-02-01

16. Other information

References:	Not Available
Creation Date	02-June-2009
Revision Date	10-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.