

SAFETY DATA SHEET

SN 160

Section 1. Identification

Product name: SN 160
Synonyms: Not available

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

Product use: Base Oil
Manufacturer: HollyFrontier Refining & Marketing LLC
1700 South Union Avenue
Tulsa, OK 74107
USA
Customer Service: (800) 456-4786
Emergency telephone number: CHEMTREC® (800) 424-9300
CCN 201319

Section 2. Hazards identification

Classification of the substance or mixture: Not classified

GHS label elements

Hazardous pictogram: None
Signal word: No signal word.
Hazard statements: No known significant effects or critical hazards.
Precautionary statements
Prevention: Not applicable.
Response: Not applicable.
Storage: Not applicable.
Disposal: Dispose of contents/container in accordance with all local, regional, national and international regulations.

Supplemental label elements: Avoid contact with skin and clothing. Wash thoroughly after handling. Prolonged or repeated contact may dry skin and cause irritation. Defatting to the skin. Heated material may cause thermal burns.

Hazards not otherwise classified: This substance/mixture does not meet the PBT/vPvB criteria for REACH, Annex XIII.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

CAS number/other identifiers

CAS number: Not applicable.
 Product code: 4841-00

Ingredient name	%	CAS number
Distillates (petroleum), solvent-dewaxed heavy paraffinic	90 - 100	64742-65-0
Distillates (petroleum), hydrotreated heavy paraffinic	0 - 10	64742-54-7

Total sulfur: < 0.1 wt%

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Based on our knowledge of our products, there are no additional ingredients present that are classified as hazardous to health or to the environment, which require reporting in this section. As applicable, see Section 8 for Occupational Exposure Limits.

Section 4. First aid measures**Description of necessary first aid measures**

Eye contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Remove contact lenses. If eye irritation persists, obtain medical treatment. For contact with heated product, flush immediately with plenty of cool water for at least 15 minutes. Get medical attention.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and continue monitoring by trained personnel. Get immediate medical attention if victim is unconscious. Seek medical attention if cough or other symptoms develop.

Skin contact: Wash with soap and water. Get medical attention if irritation develops or persists. Remove contaminated clothing and wash before reuse. For contact with heated product, flush immediately with plenty of cool water for at least 15 minutes.

Ingestion: If large amounts are swallowed, contact a physician or Poison Control Center. Never give anything by mouth to an intoxicated, unconscious or convulsing person. Get medical attention immediately.

Most important symptoms/effects, acute and delayed

Eye contact: Slightly irritating to the eyes. May cause tearing, burning sensation and redness. Contact with product at elevated temperatures may result in thermal burns.

Inhalation: Vapors and/or mists which may be formed at elevated temperatures may be irritating to eyes, nose, throat, upper respiratory tract and lungs.

Skin contact: May cause skin dryness, irritation and defatting of the skin. Contact with product at elevated temperatures may result in thermal burns.

Ingestion: Gastrointestinal tract irritation with possible nausea, vomiting and diarrhea.

See toxicological information (Section 11).

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Treat symptomatically. Contact physician or poison control center immediately if ingested or if large quantities have been inhaled.

Specific treatments: No specific treatment.

Protection of medical responders: Do not attempt to take action without suitable protective equipment. See Section 8 for additional information on protection measures. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media: In case of fire, use water spray (fog), regular foam, dry chemical or carbon dioxide. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Unsuitable extinguishing media: Do not direct solid streams into the hot burning liquid.

Specific hazards arising from the chemical: Use water spray or fog to cool exposed containers. Closed containers of this material may explode when subjected to heat from surrounding fire.

Hazardous thermal decomposition products: Decomposition products may include the following materials: carbon dioxide, carbon monoxide and other asphyxiants.

Oxides of nitrogen and sulfur may also be formed.

Special protective actions for fire-fighters: Fight fire from a safe distance and protected location. Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers.

Special protective equipment for fire-fighters: Wear structural firefighting gear. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel:** Remove ignition sources. Ensure adequate ventilation. Do not attempt to take action without suitable protective equipment. See Section 8 for additional information on protection measures.
- For emergency responders:** Remove ignition sources. Ensure adequate ventilation. Do not attempt to take action without suitable protective equipment. See Section 8 for additional information on protection measures.
- Environmental precautions:** Do not allow spilled material to runoff and contact soil, waterways, drains and sewers.

Methods and materials used for containment and clean-up

- Small spill:** Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Use appropriate personal protective equipment as stated in Section 8. Advise the Environmental Protection Agency (EPA) and appropriate state agencies, if required. Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Vacuum or sweep up material and place in a disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill:** Stop leak if possible without risk. Approach release from upwind. Prevent entry of release material into sewers, waterways, basements or confined areas. Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Use appropriate personal protective equipment as stated in Section 8. Advise the Environmental Protection Agency (EPA) and appropriate state agencies, if required. Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Vacuum or sweep up material and place in a disposal container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures:	Wear appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation or wear appropriate respirator. High pressure skin injection is a medical emergency. The injury will not appear serious at first but within a few hours, the affected tissue will appear swollen, discolored and extremely painful. Follow all SDS/label precautions even after container is emptied because it may contain product residue.
Advice on general hygiene practices:	Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Remove contaminated clothing and protective equipment prior to entering eating areas.
Conditions for safe storage, including any incompatibilities:	NFPA Class IIIB storage. Combustible liquid. Flash point is greater than 200° F (93.3° C). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Oil mist, mineral	OSHA PEL TWA: 5 mg/m ³
	ACGIH TLV TWA: 5 mg/m ³ Form: Inhalable fraction
	NIOSH REL (United States, 1/2013). TWA: 5 mg/m ³ 10 hours. Form: Mist STEL: 10 mg/m ³ 15 minutes. Form: Mist

Appropriate engineering controls:	Use with adequate ventilation. Local exhaust ventilation may be necessary when handling or using this product to keep exposure to airborne contaminants below the exposure limit.
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Personal protective measures

Personal hygiene measures:	Wash thoroughly after handling. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye and face protection:	Safety glasses with side shields or splash proof chemical

goggles are recommended to protect against the splash of product.

Skin protection

Hand protection:

Protective gloves are recommended to protect against contact with product. The gloves listed may provide protection against permeation: neoprene, nitrile, Viton®. Gloves of other chemically resistant materials may not provide adequate protection.

Other body protection:

Where splashing is possible, fully chemical resistant protective clothing (e.g. acid suit) and boots are recommended. Wear insulated impervious protective gear to protect against the splash of product. The following materials are acceptable for use as protective clothing: neoprene; nitrile; Viton®. Wear appropriate footwear.

Respiratory protection:

Concentration in air determines the level of respiratory protection needed. Use only NIOSH certified respiratory equipment. Respiratory protection is not usually needed unless product is heated or misted. Half-mask air purifying respirator with dust / mist filters or HEPA filter cartridges is acceptable for exposures to ten (10) times the exposure limit. Full-face air purifying respirator with dust / mist filters or HEPA filter cartridges is acceptable for exposures to fifty (50) times the exposure limit. Protection by air purifying respirators is limited. Use a positive pressure-demand full-face supplied air respirator or SCBA for exposures greater than fifty (50) times the exposure limit. If exposure is above the IDLH (Immediately Dangerous to Life and Health) or there is the possibility of an uncontrolled release, or exposure levels are unknown, then use a positive pressure-demand full-face supplied air respirator with escape bottle or SCBA. Wear a NIOSH-approved (or equivalent) full-face-piece airline respirator in the positive pressure mode with emergency escape provisions.

Section 9. Physical and chemical properties

Appearance

Physical state:	Liquid [viscous]
Color:	Colorless
Odor:	Slight
Odor threshold:	Not available
pH:	Not applicable
Melting point:	Pour point [ASTM D5950]: -15°C (5°F)
Boiling point:	303 to 556°C (577 to 1033°F) [ASTM D2887]
Flash point:	Open cup: 201°C (394°F) [ASTM D92]
Evaporation rate:	Not available
Flammability (solid, gas):	Not available

Lower and upper explosive (flammable) limits:	Not available
Vapor pressure:	<0.000013 kPa (<0.0001 mm Hg) 20°C (68°F)
Vapor density:	Not available
Specific gravity:	0.87 [16°C (60°F)] [ASTM D1298] Bulk density: 7.2 lbs/gal [ASTM D1250]
Solubility:	Insoluble in the following materials: cold water and hot water
Partition coefficient:	
n-octanol/water:	2 to >6
Auto-ignition temperature:	357°C (675°F) [ASTM D2155]
Decomposition temperature:	Not available
Viscosity:	Kinematic (40°C (104°F)): 0.32 cm ² /s (32 cSt) [ASTM D445] Kinematic (100°F): 165 SUS [ASTM D2161] Kinematic (100°C (212°F)): 0.053 cm ² /s (5.3 cSt) [ASTM D445]
Molecular weight:	400 g/mole [ASTM D2502]
Physical/chemical properties comments:	Volatility (%): Nil [ASTM D2369]

Section 10. Stability and reactivity

Reactivity:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability:	The product is stable.
Possibility of hazardous reactions:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid:	Extended exposure to high temperatures can cause decomposition. Avoid all possible sources of ignition.
Incompatible materials:	Reactive or incompatible with the following materials: strong oxidizing materials and strong reducing agents.
Hazardous decomposition products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Likely Routes of Exposure: Routes of entry anticipated: Oral, Dermal, Inhalation.

Symptoms related to the physical, chemical and toxicological characteristics:

Eye contact:	Slightly irritating to the eyes. May cause tearing, burning sensation and redness. Contact with product at elevated temperatures may result in thermal burns.
Inhalation:	Vapors and/or mists which may be formed at elevated temperatures may be irritating to eyes, nose, throat, upper

	respiratory tract and lungs.
Skin contact:	May cause skin dryness, irritation and defatting of the skin. Contact with product at elevated temperatures may result in thermal burns.
Ingestion:	Gastrointestinal tract irritation with possible nausea, vomiting, and diarrhea.

Information on toxicological effects

Basis for Assessment: Product has not been tested. Information given is based on data on individual components or similar materials. Samples of similar paraffinic oils have been tested in acute oral, dermal and inhalation studies.

Acute Toxicity: Not classified as acutely toxic.

Distillates (petroleum), solvent-dewaxed heavy paraffinic

Acute Inhalation Toxicity:	Rat, LC50>5.53 mg/L, 4 hours
Acute Dermal Toxicity:	Rabbit, LD50>2000 mg/kg
Acute Oral Toxicity:	Rat, LD50>5000 mg/kg

Distillates (petroleum), hydrotreated heavy paraffinic

Acute Inhalation Toxicity:	Rat, LC50>5.53 mg/L, 4 hours
Acute Dermal Toxicity:	Rabbit, LD50>2000 mg/kg
Acute Oral Toxicity:	Rat, LD50>5000 mg/kg

Skin Corrosion/Irritation:	Non-irritating to the skin. Heated material can cause thermal burns.
Eye irritation:	Non-irritating to the eyes. Heated material can cause thermal burns.
Skin Sensitization:	No evidence of skin sensitization.
Respiratory Sensitization:	No data available.
Mutagenicity:	Not considered to be a germ cell mutagen.
Carcinogenicity:	The mineral oils in the product contain <3% DMSO extract (IP 346). Not considered to be carcinogenic.
Reproductive Toxicity:	Not considered to be toxic to the reproductive system.
Teratogenicity:	No teratogenic effects observed.
Aspiration Hazard:	Not expected to be an aspiration hazard.
Specific target organ toxicity (single exposure):	Acute exposure studies show no evidence of systemic toxicity.
Specific target organ toxicity (repeated exposure):	Repeat dose toxicity data shows no evidence of target organ toxicity.

Section 12. Ecological information

Basis for Assessment: Product has not been tested. Information given is based on data on individual components or similar materials. Samples of similar paraffinic oils have been tested in fish, invertebrates and algae.

Distillates (petroleum), solvent-dewaxed heavy paraffinic

Acute EC50 >100 mg/L, Algae, 72 hours

Acute EC50 >100 mg/L, Daphnia, 48 hours

Acute EC50 >100 mg/L, Fish, 96 hours

Distillates (Petroleum), hydrotreated heavy paraffinic

Acute EC50 >100 mg/L, Algae, 72 hours

Acute EC50 >100 mg/L, Daphnia, 48 hours

Acute EC50 >100 mg/L, Fish, 96 hours

Persistence and degradability:

Considered to be inherently biodegradable.

Bioaccumulative potential:

Constituents of other lubricant base oils show measured or predicted values for log K_{ow} from 2 to ≥ 6 and are considered potentially bioaccumulative.

Mobility in soil:

Not available.

Other adverse effects:

No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods: Follow federal, state and local regulations. This material is not a RCRA hazardous waste, if not contaminated. If material has been "used", RCRA criteria (ignitability, reactivity, corrosivity and toxicity) must be determined.

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe manner. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers may retain some product residue. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated	Not regulated	Not regulated	Not regulated
UN proper shipping name	—	—	—	—	—	—
Transport hazard class(es)	—	—	—	—	—	—
Packing group	—	—	—	—	—	—
Environmental hazards	No	No	No	No	No	No
Additional information	—	—	—	—	—	—

Special precautions for user: **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal Regulations

United States Toxic Substance Control Act (TSCA)

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) Inventory.

TSCA Exempt

(R&D, LVE, Polymer Exemption, Other) Not regulated

TSCA Section 4 Not regulated

TSCA Section 5 Not regulated

TSCA Section 5(a)2 Not regulated

TSCA Section 6 Not regulated

TSCA Section 12[b] Not regulated

Superfund Amendments and Reauthorization Act (SARA)

EPCRA (SARA) Title III Section 313 Toxic Chemical Release Inventory (TRI) This product does not contain any chemicals in excess of the applicable *de minimis* concentration that are subject to the reporting requirements of Section 313.

EPCRA (SARA) Title III Section 302 Extremely Hazardous Substances Reporting Quantities This product does not contain any chemicals listed under Section 302.

EPCRA (SARA) Title III Section 311
Hazardous Classes

Distillate (petroleum), solvent-dewaxed heavy paraffinic	
Immediate (acute) health hazard	Yes
Delayed (chronic) health hazard	No
Fire Hazard	No
Sudden release of pressure	No
Reactive Hazard	No

Distillate (petroleum), hydrotreated heavy paraffinic	
Immediate (acute) health hazard	Yes
Delayed (chronic) health hazard	No
Fire Hazard	No
Sudden release of pressure	No
Reactive Hazard	No

Other federal regulations

Chemical Facility Anti-terrorism Standards (6 CFR 27), Appendix A, Chemicals of Interest: Not Listed

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) 40 CFR 302.4: Not Regulated.

RCRA (Resource Conservation and Recovery Act) 40 CFR Part 261: Not Listed as RCRA hazardous waste as shipped.

State regulations

Illinois	None of the components are listed.
Louisiana	None of the components are listed.
Massachusetts	None of the components are listed.
Michigan	None of the components are listed.
New York	None of the components are listed.
New Jersey	None of the components are listed.
Pennsylvania	None of the components are listed.
California (Proposition 65)	This material does not contain any chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

International regulations

International lists

Australia Inventory (AICS)	The components are listed or exempted.
Canadian Domestic Substance List (DSL)	The components are listed or exempted.
Canadian Non-domestic Substances List (NDSL)	The components are not listed.
China Inventory (IECSC)	The components are listed or exempted.
European EINECS Inventory	The components are listed or exempted.

European ELINCS Inventory	The components are not listed.
Japan Existing & New Chemical Substances (ENCS)	The components are listed or exempted.
Korea Existing Chemical Inventory (KECI)	The components are listed or exempted.
Korea Toxic Chemicals Control Law	The components are not listed.
Malaysia Inventory (EHS Register)	Not determined.
New Zealand Inventory of Chemicals (NZIoC)	The components are listed or exempted.
Philippines Inventory (PICCS)	The components are listed or exempted.
Taiwan Inventory (CSNN)	Not determined.
Turkey Inventory and Control of Chemicals (CICR)	Not determined.

Section 16. Other information

Hazard Ratings:

Key: 0 = least; 1 = slight; 2 = moderate; 3 = high; 4 = extreme

HMIS Rating: Health = 1; Fire = 1; Reactivity = 0

NFPA Rating: Health = 1; Fire = 1; Reactivity = 0

Date of issue/Date of revision:	05/11/2015
Date of previous issue:	03/18/2015
Version:	2
Key to abbreviations:	ATE = Acute Toxicity Estimate
	BCF = Bioconcentration Factor
	GHS = Globally Harmonized System of Classification and Labelling of Chemicals
	IATA = International Air Transport Association
	IMDG = International Maritime Dangerous Goods
	LogP _{ow} = logarithm of the octanol/water partition coefficient
	PBT = Persistent, Bioaccumulative and Toxic
	UN = United Nations
	vPvB = Very Persistent and very Bioaccumulative

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