

SAFETY DATA SHEET

Hydrolene H180TN

Section 1. Identification

Product name: Hydrolene H180TN
Synonyms: Not available

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

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

Section 2. Hazards identification

Classification of the substance or mixture: CARCINOGENICITY—Category 1B
TOXIC TO REPRODUCTION (Unborn child)—Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE)
(adrenal, bone marrow, kidneys, liver, lymphatic system, stomach and thymus)—Category 1

GHS label elements

Hazard pictograms:



Signal word: Danger
Hazard statements: May cause cancer.
Suspected of damaging the unborn child.
Causes damage to organs through prolonged or repeated exposure (adrenal, bone marrow, kidneys, liver, lymphatic system, stomach, thymus).

Precautionary statements

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Do not breathe vapors. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response: If exposed or concerned: Get medical advice/attention.
 Storage: Store locked up.
 Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements: Repeated exposure may cause skin dryness or cracking. Defatting to the skin. Heated material can 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 available
 Product code: 1272-00

Ingredient name	%	CAS number
Extracts (petroleum), heavy paraffinic distillate solvent	15-50	64742-04-7
Extracts (petroleum), residual oil solvent	50-85	64742-10-5

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.

Also 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 large quantities have been ingested or 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.

Special protective actions for Fight fire from a safe distance and protected location. Exercise

fire-fighters:	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
Extracts (petroleum), residual oil solvent	ACGIH TLV (United States, 6/2013). TWA: 0.2 mg/m ³ 8 hours
Polycyclic Aromatic Hydrocarbons	OSHA PEL (United States, 6/1993). TWA: 0.2 mg/m ³ . Form: Benzene-soluble ACGIH TLV (United States, 3/2004). TWA: 0.2 mg/m ³ . Form: Benzene-soluble

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.
<u>Skin protection</u>	
Hand protection:	Protective gloves are recommended to protect against contact with product. The gloves listed may provide protection against permeation: neoprene, nitrile, polyvinyl alcohol, 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: polyvinyl alcohol (PVA); 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:	Dark
Odor:	Slight
Odor threshold:	Not available
pH:	Not applicable

Melting point:	Pour point [ASTM D5950]: 20°C (68°F)
Boiling point:	416 to 649°C (780 to 1200°F) [ASTM D2887]
Flash point:	Closed cup [ASTM D92]: 232°C (450°F)
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) (37.8°C (100°F))
Vapor density:	Not available
Specific gravity:	0.97 [16°C (60°F)] [ASTM D1250] Bulk density: 8.0 lbs/gal [ASTM D1250]
Solubility:	Insoluble in the following materials: cold water and hot water
Partition coefficient:	
n-octanol/water:	≥4
Auto-ignition temperature:	399°C (750°F) [ASTM D2155]
Decomposition temperature:	Not available
Viscosity:	Kinematic (60°C (140°F)): 0.294 cm ² /s (29.4 cSt) [ASTM D445] Kinematic (100°C (212°F)): 0.370 cm ² /s (37.0 cSt) [ASTM D445]
Molecular weight:	525 g/mole

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:	Keep away from heat, sparks and flame.
Incompatible materials:	Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition products may include the following materials: Carbon dioxide, Carbon monoxide and other asphyxiants.

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. Heated materials may cause 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 distillate aromatic extracts (DAEs) and residual aromatic extracts (RAEs) have been tested in acute oral, dermal and inhalation studies.

Acute Toxicity: Not classified as acutely toxic.

Extracts (petroleum), heavy paraffinic distillate solvent

Acute Oral Toxicity:	Rat, LD50>5000 mg/kg bodyweight
Acute Dermal Toxicity:	Rabbit, LD50>3000 mg/kg bodyweight
Acute Inhalation Toxicity:	Rat, 4 hr, LC50>5 mg/L

Extracts (petroleum), residual oil solvent

Acute Oral Toxicity:	Rat, LD50>5000 mg/kg bodyweight
Acute Dermal Toxicity:	Rabbit, LD50>2000 mg/kg bodyweight
Acute Inhalation Toxicity:	Rat, 4 hr, LC50>5 mg/L

Skin Corrosion/Irritation:	Mild Irritant. May cause skin dryness or cracking. Heated material can cause thermal burns.
Eye Irritation:	May cause slight transient irritation. Heated material can cause thermal burns.
Skin Sensitization:	No evidence of skin sensitization.
Respiratory Sensitization:	No evidence of respiratory sensitization.
Germ Cell Mutagenicity:	Not considered to be a germ cell mutagen.
Carcinogenicity:	Cancer hazard, based on skin-painting studies using laboratory animals, involving continuous, long-term contact. IARC: Group 1. Risk of cancer depends on duration and level of exposure.
Reproductive Toxicity:	Not considered to be toxic to the reproductive system.
Teratogenicity:	Possible risk of harm to the unborn child. May cause increase in fetal deaths, reduced fetal weight and skeletal malformations.
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):	Target organs: Adrenal, bone marrow, kidneys, liver, lymphatic system, stomach and thymus, potential dermal effects.

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 distillate aromatic extracts (DAEs) and residual aromatic extracts (RAEs) have been tested in fish, invertebrates and algae. These substances are poorly soluble mixtures. Additionally, they may cause physical fouling of aquatic organisms.

Ecotoxicity: Toxic to aquatic organisms, with long lasting effects.

Product/ingredient name	Result	Species	Exposure
Extracts (petroleum), heavy paraffinic distillate solvent	Acute EC50 18.8 mg/L	Algae	96 hours
	Acute EC50 35.9 mg/L	Daphnia	48 hours
	Acute EC50 1000 mg/L	Fish	96 hours
	Chronic NOEL 0.1- 1 mg/l *	Daphnia magna	
Extracts (petroleum), residual oil solvents	Aquatic Hazard (Acute)	Fish/Daphnia	LL50>1000 mg/l
	Aquatic Hazard (Long-term)	Daphnia	EL50(21 Days)>1000 mg/l

* Chronic aquatic toxicity studies on Daphnia magna exposed to samples of DAEs show variable chronic toxicity, with NOEL values between 0.1 and 1 mg/l.



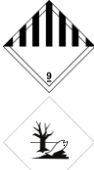

Persistence and degradability:	Not readily biodegradable. Considered to be inherently biodegradable.
Bioaccumulative potential:	Constituents show measured or predicted values for log Kow \geq 4 and are considered potentially bioaccumulative.
Mobility in soil:	Not available.
Other adverse effects:	None identified.

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.	UN3082	UN3082	UN3082	UN3082
UN proper shipping name	—	—	SUBSTANCIA LIQUIDA POTENCIALMENTE PELIGROSAS PARA EL MEDIO AMBIENTE, N.E.P. (Extracts (petroleum), heavy paraffinic distillate solvent)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Extracts (petroleum), heavy paraffinic distillate solvent)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Extracts (petroleum), heavy paraffinic distillate solvent). Marine pollutant (Extracts (petroleum), heavy paraffinic distillate solvent)	Environmentally hazardous substance, liquid, n.o.s. (Extracts (petroleum), heavy paraffinic distillate solvent)
Transport hazard class(es)	—	—	9 	9 	9 	9 
Packing group	—	—	III	III	III	III
Environmental hazards	Yes	Yes	Yes	Yes	Yes	Yes

Additional information	—	—	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. Special provisions 274, 331, 335	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. Hazard identification number 90 Limited quantity 5 L Special provisions 274, 335, 601 Tunnel code (E)	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. Emergency schedules (EmS) F-A, S-F Special provisions 274, 335	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. Passenger and Cargo Aircraft Quantity limitation: 450 L Packaging instructions: 964 Cargo Aircraft Only Quantity limitation: 450 L Packaging instructions: 964 Limited Quantities—Passenger Aircraft Quantity limitation: 30 kg Packaging instructions: Y964 Special provisions A97, A158
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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) Polycyclic aromatic compounds – Conc 0.1%

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	Yes
Fire Hazard	No
Sudden release of pressure	No
Reactive Hazard	No
Extracts (petroleum), residual oil solvents	
Immediate (acute) health hazard	Yes
Delayed (chronic) health hazard	Yes
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	The components of this material are not listed.
Louisiana	The components of this material are not listed.
Massachusetts	Listed as 8012-95-1 (Oil Mist, Mineral).
Michigan	The components of this material are not listed.
Minnesota	Listed as 8012-95-1 (Oil Mist, Mineral). MN cancer designation applies.
New York	The components of this material are not listed.
New Jersey	Listed as Mineral Oil (untreated or mildly treated). Special health hazard substance: carcinogen if $\geq 0.1\%$
Pennsylvania	Listed as Mineral Oil Mist.
California Proposition 65	WARNING: This product contains a chemical known to the State of California to cause cancer. Polycyclic aromatic compounds (Cancer – maximum acceptable dosage level – No).

International regulations**International lists**

Australia Inventory (AICS)	The components of this material are listed or exempted.
Canadian Domestic Substance List (DSL)	The components of this material are listed or exempted.
Canadian Non-domestic Substances List (NDSL)	The components of this material are not listed.
China inventory (IECSC)	The components of this material are listed or exempted.
European EINECS Inventory	The components of this material are listed or exempted.
European ELINCS Inventory	The components of this material are not listed.
Japan Existing & New Chemical Substances (ENCS)	Not determined.
Korea Existing Chemical Inventory (KECI)	The components of this material are listed or exempted.
Korea Toxic Chemicals Control Law	Not determined.
Malaysia Inventory (EHS Register)	Not determined.
New Zealand Inventory of Chemicals (NZIoC)	The components of this material are listed or exempted.
Philippines Inventory (PICCS)	The components of this material are listed or exempted.
Taiwan inventory (CSNN)	The components of this material are listed or exempted.
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 = 2*; Fire = 1; Reactivity = 0 (* Chronic health effects may result from repeated overexposure)

NFPA Rating: Health = 2; Fire = 1; Reactivity = 0

Date of issue/Date of revision:	05/14/2015
Date of previous issue:	No Previous Validation
Version:	1
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

DISCLAIMER: The information and recommendations contained within this document are, to the best of HollyFrontier Refining & Marketing LLC – Tulsa’s knowledge and belief, accurate and reliable as of the date issued. This information and recommendations are offered for the user’s consideration and examination. We extend no warranties and make no representations as to the accuracy or completeness of the information contained herein and assume no responsibility regarding suitability of this information for the users intended purpose or for the consequence of its use. It is the user’s responsibility to satisfy itself that the product is suitable for the intended use and ensure proper health, safety, and other necessary information is followed.