



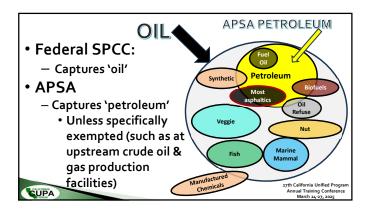
'Weird' Oils?

- Maybe not...weird; maybe just misunderstood
 - 'Oil' vs 'Petroleum' vs neither



- Statutory and regulatory definitions
 Not always an easy determination
- May take some research and <u>still</u> be unclear

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Common Misunderstanding

- APSA and the SPCC rule agree on the definition of 'petroleum oil'. Not true!
- Under the SPCC rule, an oil that is a petroleum oil is not limited to the APSA definition (liquid at 60°F and 14.7 psi)



Why the Distinction Matters

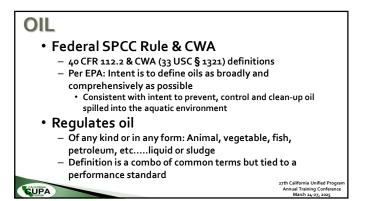
- Federal SPCC Plan applicability

 And US EPA SPCC inspector
 jurisdiction
- APSA applicability – And CUPA APSA inspector jurisdiction
- Qualified Facility applicability
- Some spill reporting nuances

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OIL

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- CWA (aka FWPCA) Section 311(a)(1):
 - "oil" means oil of any kind or in any form, including, <u>but not limited to</u>, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil. (Emphasis added)
- FWPCA statutory objective (§ 101(a)):

 To restore and maintain the chemical, physical and biological integrity of the Nation's water

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Definition vs the Sheen Rule

We'll discuss 'oil' next, but 'sheen'?
CWA statutory objective (§ 101(a)):



CWA §311(b)(3) prohibits (unpermitted):

 The discharge of oil...(i) into or upon the navigable waters of the United States, adjoining shorelines, or into or upon

the waters of the contiguous zone, or (ii) in connection with activities under the Outer Continental Shelf Lands Act.... in such quantities as may be harmful

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What "May be Harmful" per §311(b)?

• 40 CFR 110.3

....discharges of oil in such quantities that the Administrator has determined may be harmful to the public health or welfare or the environment of the United States include discharges of oil that:

(a) Violate applicable water quality standards; or

(b) Cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

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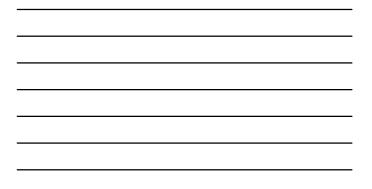


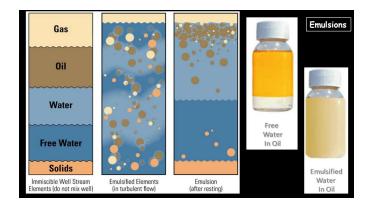






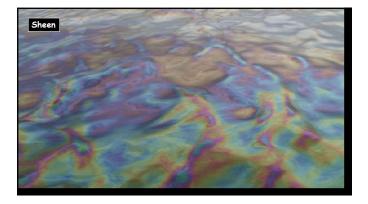












But What IS a Sheen?

- Sheens are very thin layers (usually < 1 μ) of floating oil that may appear silver/grey (S; 0.07 μ), rainbow (R; 0.15 μ), or metallic (M; 1.0 μ m) colored, depending on their thickness
- Sheens are formed by oil spreading and thinning after it's released at the water's surface Also can be from
- natural (e.g. fish, amphibians, etc.)

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Consider that when reviewing a SDS for `oil' (<0.1%?) or when considering some wastewaters

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"oil" means oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed

40 CFR 112.2 Definition:

with wastes other than dredged spoil

Recall: CWA Section 311(a)(1):

- "oil of any kind or in any form, including, but not limited to: fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or kernels; and, other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil

'Oil' vs 'Hazardous Substance'?

- Clean Water Act and other federal environmental Acts regulate differing lists, types or categories of materials (chemicals, substances, compounds, molecules, stuff, etc.)
 - Some are the same...some are different
 - Some are exclusive to a particular statute/reg... most are not (same chemical on multiple lists) Many of these 'lists' were divvied up based on a number of
- factors including agency department workload 'Hazardous Substances' are NOT 'Oils'
- Regardless of the source

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'Hazardous Substance'?

- The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) defines "hazardous substance" by reference to the following authorities:
 - Clean Water Act (CWA) section 311 ("CWA Hazardous Substances"),
 - CWA section 307(a) ("CWA Toxic Pollutants"),
 - Clean Air Act (CAA) section 112 ("CAA Hazardous Air Pollutants (HAPs)"),
 - Resource Conservation and Recovery Act (RCRA) section 3001 ("RCRA Hazardous Wastes"), and
 - Emergency Planning & Community Right to Know (EPCRA)

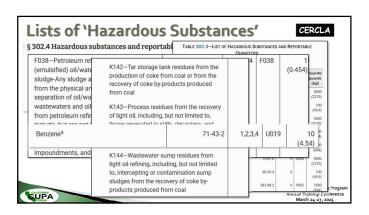
section 302.4 EPCRA "Hazardous Substances" CUPA

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TABLE 302.4—LIST OF HAZA Q [ALL COMMENTS/NOTES ARE	UANTITIES			
Hazardous substance	CASRNI	Statutory code ^{II}	RCRA waste No.	Final RC [pounds (kg)]
A2213	30558-43-1	4	J394	5000 (2270)
Acenaphthene	83-32-9	2		100 (45.4)
Acenaphthylene	208-96-8	2		5000 (2270)
Acetaldehyde	75-07-0	1,3,4	U001	1000 (454)

 _
 _
—
 _



4.					ction 311(b)(2)(A) of charges of substanc		
Benzene			7143	32 Cyclo	hexatriene, benzol		These three are
	1.8	Comm	on name	CAS No.	Synonyms	Isomers	generated as part the crude refining
WPCA		Acetaldehyde	e	75070	Ethanal, ethyl aldehyde, acetic aldehyde		process, but are lis
Toluene			108883		ethylbenzene, ethane, Methacide		as hazardous substancestheref
		Acetic anhyd	ride	108247	Acetic oxide, acetyl oxide		are NOT 'oil'
Xylene (mix	ed)		1330207	Dimethy	Ibenzene	m-	108383
				Xylol		0-	95476



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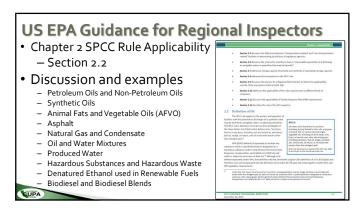
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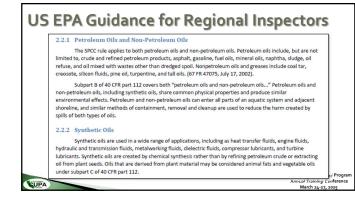
Mixtures of Oil and Hazardous Substances?

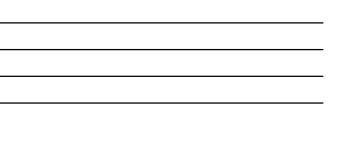
• Per the USEPA SPCC Inspector Guidance (emphasis added and slightly edited):

- Hazardous substances or hazardous wastes that are <u>neither</u> oils <u>nor mixed</u> with oils <u>are not subject to SPCC rule requirements</u>
- For purposes of 40 CFR 112, the CWA §311(b)(2) hazardous
 - substances as identified under 40 CFR 116 <u>are not considered oils</u>
 However, <u>an oil mixture</u> that includes a CWA hazardous substance is <u>subject to 40 CFR 112</u> when it meets the definition of oil in the regulation.
 - For example, benzene is a CWA hazardous substance and therefore does not meet the definition of oil in §112.2; however, benzene is a constituent of gasoline which is a mixture that includes other oils. Gasoline is an oil as defined under 40 CFR 112.2.

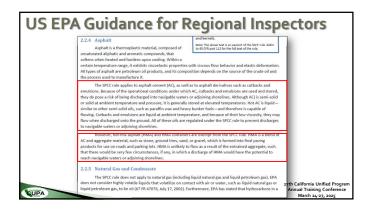
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	gaseous phase under ambient pressure and temperature, such facilities are not regulated under the SPCC rule (73 FR 74271, D		
	However, natural gas liquid condensate (often referred subject to the SPCC rule. Condensate can accumulate in tanks, of determining SPCC applicability, containers with 55 galons or included in a natural gas facility's total oil storage capacity calc	containers, or other equipment. For the purposes more in capacity storing condensate must be	
	More information on specific types of facilities handlin regulated under the SPCC rule can be found in Section 2.4.7.	g both natural gas and oil and how they are	
	2.2.6 Oil and Water Mixtures		
	Oil and water mixture containers are subject to the SPN under the statutory and regulatory definition of the term (33 U discharge of wastewater containing oil to navigable waters or CFR part 110) is prohibited (see July 17, 2002, 67 FR 47069). Or produced water.	.5.C. 1321(a)(1) and 40 CFR 110.2 and 112.2). A idjoining shorelines in a "harmful quantity" (40	
	2.2.7 Produced Water		
	The SPCC rule applies to produced water from an oil	§112.2	
	well. Produced water is the oil and water mixture resulting, from the separation of crude oil or gas from the fluids or gases extracted from the oil/gas reservoir, prior to disposal, subsequent use (e.g., re-injection or beneficial reuse), or further treatment. Produced water's chemical and physical characteristics vary considerably depending on the geologic		
	formation, usually being commingled with oil and gas at the	to 40 CFR part 112 for the full text of the rule.	
SUPA	wellhead, and changing in composition as the oil or natural gas fraction is separated and sent to market.		27th California Unified Progr Annual Training Conference
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U.S. Coast Guard

 USCG maintains a separate list of substances it considers oil for its regulatory purposes
 List available on USCG web site



- May be used <u>as a guide</u> when determining if a particular substance is an oil
 - For purposes of EPA's regulations, the USCG list is not comprehensive and does not include all oils that are subject to 40 CFR part 112

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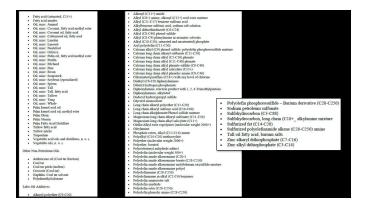
List of Petroleum and Non-petroleum Oils

This list of oils is organized alphabetically into several subgroups. Crude oil and refined petroleum products are among the most familiar types of oils. Petroleum and fuel oil are specifically named in the Clean Water Act (CWA) definition of oil. Edible animal and vegetable oils and other oils of animal or vegetable origin have historically been considered CWA oils. Other non-petroleum oils are substances that have the properties and behavior of traditional oils and have historically been considered to be oils. Lube-oil additives are included in the list of oils because they may be shipped or stored in an oil medium. Some substances that have not been considered oils historically may be added to this list in the future if they are determined to have oil-like characteristics. If you have a question about whether a commodity that does not appear on this list is regulated as an oil, please call **Mr. Patrick Keffler, CG-ENG-5, at (202) 372-1424.**

Crude Oil and Refined Petroleum Products

- Alkanes (C6-C9)
- n-Alkanes (C10+)
- iso- & cyclo-Alkanes (C10-C11)
- Alkylbenzenes (C9+)

	 Jet foel: Jet B 	 Pentene (all isomers)
Crude Oil and Refined Petroleum Products	 Jet fuel: JP-4 	 1-Phenyl-1-xylyl ethane
Ciuce On and Renned Penoleum Products	 Jet fuel: JP-5 (Kerosene, heavy) 	 iso-Propylcyclohexane
	 Jet fuel: JP-8 	 Tetrahydronaphthalene
 Alkanes (C6-C9) 	Kerosene Methylowiokexane	 White spirit (low (15-20%) aromatic)
 n-Alkanes (C10+) 	 Methylcyclohexane Mineral spirits 	Edible Animal and Vegetable Oils
 iso- & cyclo-Alkanes (C10-C11) 	Naphtha Heavy	Land Annua and Adjenter Out
 Alkvibenzenes (C9+) 	 Naphtha Paraffinic 	 Oil, edible: Beechnut
 Alkylbenzene, Alkylindane, Alkylindene mixture (each C12-C17) 	 Naphtha Petroleum 	 Oil, edible: Castor
	 Naphtha: Solvent 	 Oil, edible: Cocoa butter
Asphalt	 Naphtha: Stoddard solvent 	 Oil, edible: Coconnt
 Asphalt: cutback 	 Naphtha: VM & P (75% Naphtha) Nonane (all isomers) 	 Oil, edible: Cod liver Oil, edible: Com (maize)
 Asphalt: emulsion 	 Nonvibenzene 	 Oil, edible: Com (maize) Oil, edible: Cottonseed
 Asphalt blending stocks: Roofers flux 	Octane (all isomers)	Oil, edible: Fish
 Asphalt blending stocks: Straight run residue 	 Oil, fael: No. 1 	 Oil, edible: Groundaut
	 Oil, fael: No. 1-D 	 Oil, edible: Hazelaut
 Aviation alkylates 	Oil, fael: No. 2 Oil fael: No. 2-D	 Oil, edible: Lard
 Cobalt naphthenate in Solvent naphtha 	 Oil, fiel: No. 2-D Oil, fael: No. 4 	 Oil, edible: Nutmeg butter
 p-Cymene 	Oil fael No 5	 Oil, edible: Olive Oil, edible: Palm
 Diisopropyl naphthalene 	 Oil, fael: No. 6 	 Oil, edible: Palm Oil, edible: Palm kernel
 Distillates: Flashed feed stocks 	 Oil, mise: Aliphatic 	• Oil edible: Peant
 Distillates: Straight run 	 Oil, mise: Aromatic 	 Oil edible: Peel
	Oil, mise: Clarified Oil mise: Coal	 Oil, edible: Poppy
 Ethyl cyclohexane 	Out, mise: Coal Out, mise: Coal	 Oil, edible: Poppy seed
Gas oil: Cracked	Oil mise Diesel	 Oil, edible: Raisin seed
 Gasoline: Automotive (not over 4.23g Pb/gal) 	 Oil, misc: Gas, low pour 	Oil, edible: Rapeseed Oil, edible: Rice bun
 Gasoline: Aviation (not over 4.86g Pb/gal) 	 Oil, misc: Gas, low sulfar 	 Oil, edible: Rice bran Oil edible: Safflower
 Gasoline: Casinghead (natural) 	 Oil, misc: Heartcut distillate 	Oil edible Salad
Gasoline: Polymer	Oil, misc: Lubricating Oil misc: Mineral	Oil edible Seame
	 Oil, misc. Mineral seal Oil misc. Mineral seal 	 Oil, edible: Soya bean
 Gasoline: Straight run 	Oil mise: Motor	 Oil, edible: Sunflower seed
 Gasoline blending stocks: Alkylates 	 Oil, misc: Penetrating 	 Oil, edible: Tucum
 Gasoline blending stocks: Reformates 	 Oil, misc: Residual 	 Oil, edible: Vegetable Oil, edible: Walmut
 Heptane (all isomers) 	 Oil, misc. Road 	 Oil, edible: Walmit
 Heptene (all isomers) 	Oil, misc: Seal Oil, misc: Spindle	Other Oils of Azimal or Vesetable Origin
Hexane (all isomers)	Oil mise Transformer	
	 Oil, misc: Turbine 	 Animal and Fish eils, n. o. s.
 Hexene (all isomers) 	 Olefin mixtures (C5-C7) 	 Animal and fish acids oils and distillates, n. o. s.
Jet fuel: Jet A-1	 alpha-Olefins (C6-C18) mixtures 	 Camphor col
 Jet fuel: Jet A 	 Olefins (C13+) 	 Cashew nut shell oil (untreated)







APSA-Regulated Tank Facilities



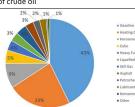
• HSC 25270.3 establishes tank facility applicability based on total **<u>petroleum</u>** storage capacity in aboveground storage tank (AST) or containers with 55 gallons or more capacity:

- For ASTs or tank facilities not excluded per HSC 25270.2 (a) (1)-(8)

- The tank facility is APSA regulated if:
 Tank facility is subject to the Federal SPCC rule, OR Total <u>petroleum</u> capacity is 1,320 gallons or more, OR
 - Less than 1,320 gallons total petroleum capacity, but has one or more tanks in an underground area (TIUGA) meeting HSC 25270.2 (0) (1) conditions, excluding TIUGAs per HSC 25270.3 (c)(3)

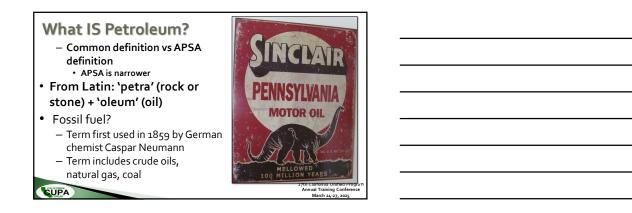
What is APSA Petroleum?

- HSC 25270.2 (h) Petroleum means:
 - Physical state is liquid at normal sea level atmospheric pressure (14.7 pounds per square inch absolute, psi) and 60 degrees Fahrenheit (60 $^\circ\text{F})$ temperature - Derived from crude oil or fraction of crude oil
- Fraction refers to other petroleum products refined (converted) from crude oil utilizing chemical processes such as fractional distillation, catalytic cracking, alkylation, reforming, etc.

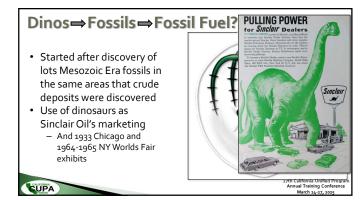












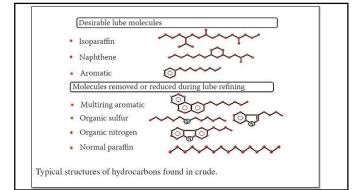


Crude?

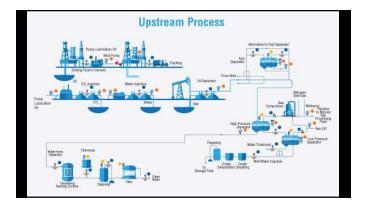
- Needs a loooooong time with heat, compression, rock trap, and a lack of oxygen
- Hydrocarbons of various chain lengths and structures

 Paraffins, naphthene,
 - aromatics
 - May be 'light' or 'heavy'
 - May be 'sweet' or 'sour'



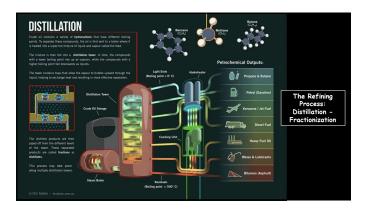


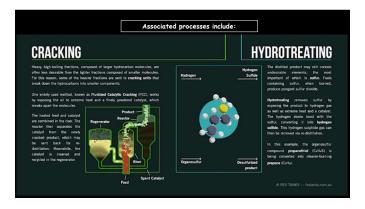




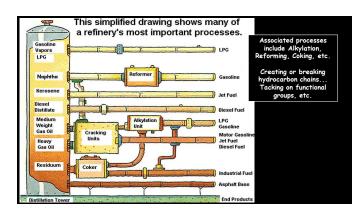






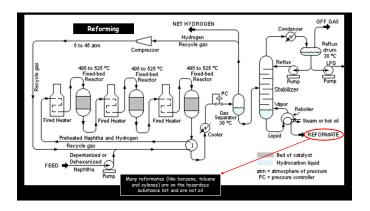


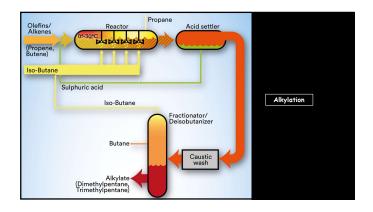




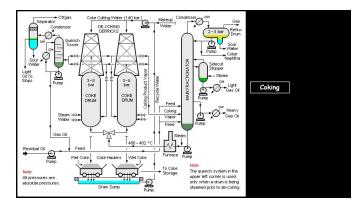






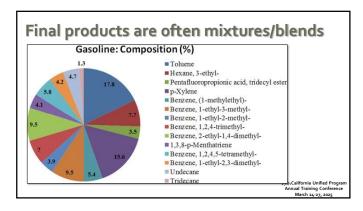


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Main Difference: APSA Petroleum

vs `non-APSA' Petroleum

HSC 25270.2 (h) Petroleum means derived from crude oil or

- Physical state is <u>liquid</u> at normal sea level atmospheric pressure (14.7 pounds per square inch absolute, psi) and 60 degrees Fahrenheit (60°F) temperature
- e.g.: Asphalt is a petroleum (derived) product
 - <u>Bitumen</u> is a viscous liquid binder produced in crude refining
 <u>Asphalt (or asphalt cement)</u> is a thermoplastic material, composed of unsaturated aliphatic and aromatic compounds, that softens when heated and hardens upon cooling...it shows viscous flow behavior and for the soften soften and the soften soften are soften as the soften as the soften are soften as the soften are soften as the soften as the soften as the soften are soften as the soften are soften as the soften as the
 - elastic deformation depending upon temperature (SPCC regulated)
 Hot mix asphat (HMA) is a blend of AC and aggregate material (stone, ground tires, sand, gravel, etc.) that is heated so it can be more easily spread/applied (SPCC-exempt)
- <u>Asphalt emulsion</u> is a liquid made of asphalt, water, and an emulsifying agent (SPCC regulated)





- Petroleum or crude oil fractions in solid, semi-solid or gaseous form (not liquid) at 60°F and 14.7 psi, such as: — Propane, liquified petroleum gas and
- Propane, liquified petroleum gas and liquified natural gas (all are gases at 14.7 psi and 60°F but can be pressurized to >14.7 psi and become liquefied fuel sources)
- Petroleum greases and waxes -which are 'semi-solid' (too viscous to flow as a liquid) at 14.7 psi and 60°F.
- Hot mix asphalts, which are 'solid' (too viscous to flow as a liquid) at 14.7 psi and 60°F.
- Some very heavy fuel oils (too viscous to flow as a liquid) at 14.7 psi and 60°F.

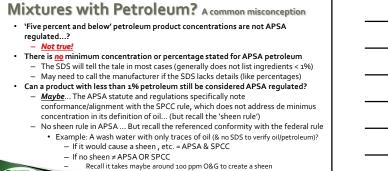
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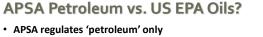


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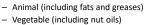


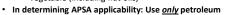
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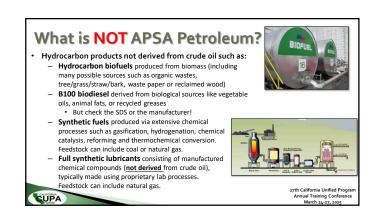
Crude oil, distillates and its fractions... if liquid @ 60°F

- US EPA regulates all types of oils
 - Petroleum
 - Synthetic
 - Any type of mineral oil



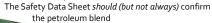


 In determining 40 CFR 112.6 'qualified facility' applicability: Use <u>all</u> oils (because QF is a federal criteria)





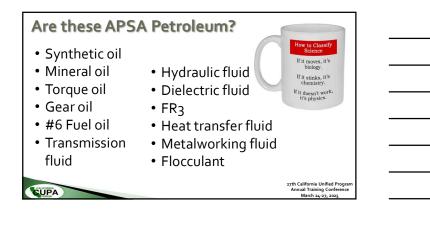
Can Get Sketchy...These ARE APSA Petroleum Non-petroleum oil products blended with petroleum: Biodiesel blends that are mixtures of Baoo biodiesel (non-petroleum) with petroleum diesel (e.g. Bao fuel contains 20% biodiesel and 80% petroleum diesel (Bg) is gg% bio + 1% petroleum [for road tax relief])...may be a bit < 1% Synthetic oil blends (semi-synthetic) that are mixtures of full synthetic (non-petroleum) oil and petroleum-based oil. Commonly found in the marketplace, due to the high cost of a0% full synthetic oil Metalworking fluids may contain some petroleum oil content (may even be <1%) The Sefart. Data Shart cheuld (but and plurge) experime

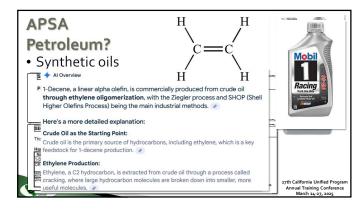


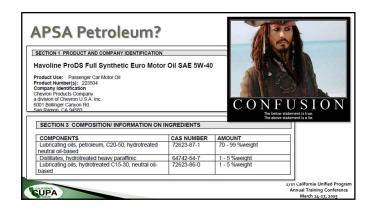
	Petroleum?		
	Sinclar	Safety Data Sheet Biodiesel	1
	SEC	TION 1 IDENTIFICATION	
	Product Name: Biodiesel Synonyms: Biodiesel from soybean oil, B100, m methyl tallowate, fatty acid methyl esters, fatty ac	cid alky; esters	
	SECTION 3 COMPOS	ITION / INFORMATION ON INGR	EDIENTS
	Chemical name	CAS No.	Concentration
	Methyl Esters (Soybean Oil)	67784-80-9	0-100%
	Methyl Esters (Rapeseed Oil)	73891-99-3	0-100%
CALFORNIA	Methyl Esters (Tallow)	61788-61-2	0-100%
CUPA	Methyl Esters, Fatty Acids C12-C18	68937-84-8	0-100%

Petroleum?	Safety Data She		
	Section 1: Identification		
• Texon Biodiesel	Product Identifier: Other means of identification: Section 3: Composition/In	Biodiesel - Biod - Diso - Pathy Acid Methyl Estens - Pathy Acid Alays Estens - Nathyn Soyate - Bayesed Bodresel - Tarlow Bodresel - Carola Bodresel - Carola Bodresel - Carola Bodresel Formation on Ingredients	
	Chemical Name	CASRN	Concentration ¹
	Soybean Oil Methyl Esters	67784-80-9	0-100%
	Rapeseed Oil Methyl Esters	73891-99-3	0-100%
	Tallow Methyl Esters	61788-61-2	0-100%
	Biodiesel (Canola Derived)	129828-16-6	0-100%
	Biodiesel (Fatty Acid, Methyl Ester)	68937-84-8	0-100%
	ULSD (Ultra Low Sulfur Diesel)	68476-30-2	< 1%



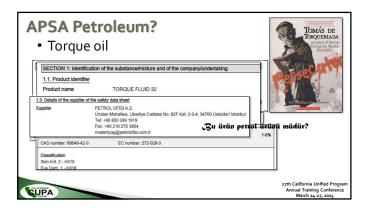




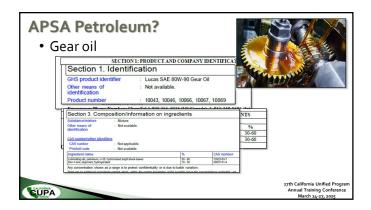




• Mineral oil	n?	
1. PRODUCT AND COMPANY IDENTIFICATION		AL AN
Product Name : LIGHT MINERAL OIL (Mineral oi Chemical Family: Petroleum Hydrocarbon. MANUFACTURER ADDRESS:	Al Overview The CAS number 8042-47-5 is for white mineral oil, a petroleum-based product. It's a colorless, clear liquid that's	
CAS Number: 8020-83-5 COMPOSITION/INFORMATION ON INGREDIE Ingredients C Several hydro treated petroleum oil	made from a complex combination of hydrocarbons.	
3. HAZARDS IDENTIFICATION	Used to prepare beads embedded with Psuedomonas aeruginosa	
 MDL Number: MFCD00131611 	 Used to dilute benzaldehyde and 3-octanol 	
EC No	Used in short-term memory experiments	
UPA	Properties White mineral oil is a highly refined petroleum mineral oil White mineral oil is a highly refined petroleum mineral oil second because or on the intensive treatment of a petroleum fraction w and oleum, or by hydrogenation is	ր California Unified Progra հլ)սal Training Conference March 24-27, 2025









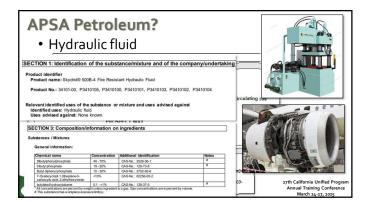
APSA Petroleum?



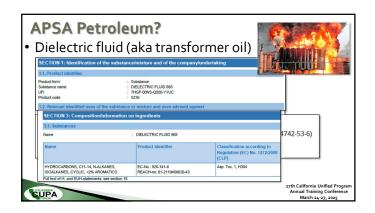
- Comes out the lower end of the distillation process
- Highly viscous
- Is it a liquid at 60°F?
- What's a 'liquid'?
 'semi-solid'?

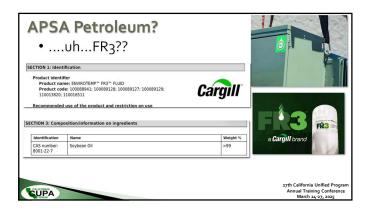


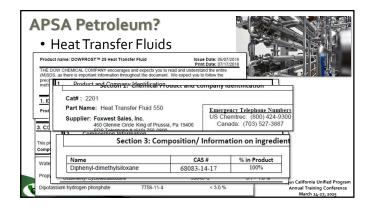
Ident SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS CAS COMPONENTS CAS NUMBER AMOUNT CAS COMPONENTS CAS NUMBER 70 - 99 %W	
	inht
CA	
Ingredient name %	CAS number
Diphenylamine 0.1 - 1	(alifornia Unified Program







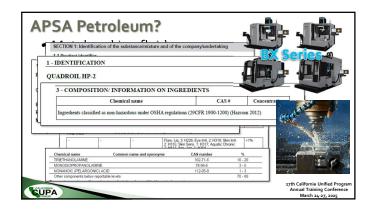






ESC

ENVIROSERVICES, INC.



	Petroleun	Hazardous components		Iter flocculation	before flocculation
50	DLECIIS.				19
SAFET	Y DATA SHEET		Revision Da	- AND	
				: 24.12.2022 r: R1201062	
™ Tradem registered 931710 Suppiler:	165 FLOCCULANT ark, Solenis or its subsidiaries or a SECTION 3: Composition/i	· · · ·			eater than 20.5 m
ABN: Street Add	3.2 Mixtures Components				2, Eye Di
G	Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)	1
	adipic acid	124-04-9 204-673-3 01-2119457561-38-	Eye Irrit. 2; H319	>= 2,5 - < 5	, Asp. To



