

USED COOKING OIL

TYPICAL ANALYSIS

Moisture	0.60%
Total Fatty Acids	90.00%
Free Fatty Acids	15.00%
Impurities (I)	0.25%
Unsaponifiabiles (U)	0.75%
Total MIU	1.60%
Viscosity	27.0 CST @ 120°F
Weight	7.44 lb/gal
Unsaturated to Saturated Ratio	3.44:1
Iodine Value	104
Titre	27.40°C
Metabolizable Energy	4,000 Kcal/lb=8,818 Kcal/kg

FATTY ACID PROFILE

C8	Caprylic Acid	--
C10	Capric Acid	--
C12	Lauric Acid	0.11%
C12:1	Lauroleic Acid	--
C13	Tridecanoic Acid	--
C14	Myristic Acid	0.64%
C14:1	Myristoleic Acid	0.11%
C15	Pentadecanoic Acid	0.08%
C16	Palmitic Acid	14.83%
C16:1	Palmitoleic Acid	0.94%
C16:2	Hexadecadienoic Acid	--
C17	Margaric Acid	--
C18	Stearic Acid	6.22%
C18:1	Oleic Acid	37.80%
C18:2	Linoleic Acid	34.75%
C18:3	Linolenic Acid	4.15%
C20	Archidic Acid	0.37%
C20:1	Eiscosenoic	--
C22	Behenic Acid	0.25%
C22:1	Erucic Acid	--
C24	Lignoceric Acid	--
C24:1	Tetracosenoic Acid	--

Analysis are updated periodically and may vary slightly from previous versions.

Approved plant of:

- Animal Protein Producers Institute (APPI) Code of Practice Voluntary Salmonella Reduction Program
- Food & Drug Administration (FDA) Registered

darpro-ingredients.com

Transforming sustainable resources into
functional and nutritional solutions

DAR PRO
INGREDIENTS

DARLING
INGREDIENTS INC.

1. Identification

Material name

UCO (used cooking oil)

Recommended Use:

Feed/Pet Food ingredient, raw material for the manufacture of Chemicals/Biofuels

Restrictions:

None Known

Version #

03

Revision Date

8/18/2015

CAS #

68475-81-0

Manufacturer

Darling Ingredients Inc.
251 O'Connor Ridge Blvd.
Suite 300
Irving, TX
75038
United States

**Telephone numbers - 24 hour
emergency assistance**

1-800-800-4841

**Telephone numbers - General
assistance**

1-800-800-4841

E-mail

info@darlingii.com



Warning
Irritant (skin and eyes)

2. Hazards Identification

Emergency overview

BROWN LIQUID WITH CHARACTERISTIC ODOR

HEALTH HAZARDS

PRACTICALLY NON-TOXIC

FLAMMABILITY HAZARDS

NOT A FLAMMABLE OR COMUSTIBLE MATERIAL PER OSHA 29 CFR 1910.1200©

REACTIVITY HAZARDS

STABLE

Potential health effects

Routes of exposure

Inhalation, ingestion, skin and eye contact

Eyes

If irritation should occur, it is expected to be transient

Skin

Prolonged or excessive skin contact with this product may cause mild skin irritation. May cause an allergic reaction in some individuals.

Inhalation

Under normal condition, inhalation is not expected to be a problem. However, respirator tract irritation may occur if exposed to fumes or mists.

Ingestion

Ingestion of large amounts may cause gastrointestinal disturbances. May cause allergic reactions in some individuals.

3. Composition/information on ingredients

Components	CAS#	Percent
UCO/RCO - Mix of animal and vegetable oils	N/A	100%
Impurities	CAS#	Percent
FREE FATTY ACIDS	Mixture	<20
UNSATURATED	Mixture	<1.0
WATER	7732-18-5	<1
INSOLUBLE IMPURITIES	Mixture	<0.5
Synonyms:	RCO (Recycled Cooking Oil), Restaurant Grease, Kitchen Grease	

Composition comments

Values do not reflect absolute minimums and maximums: these values are typical which may vary from time to time.

This Safety Data Sheet is intended to communicate potential health hazards and potential physical hazards associated with the product(s) covered by this sheet, and is not intended to communicate product specification information. For product specification information, contact your DarPro representative.

Additives:

May contain anti-oxidant (Stabilizer). See attached Anti-Oxidant SDS if anti-oxidant is present.

Hazardous concentration range:

N/A

4. First aid measures

First aid procedures

Eye contact

Flush eyes immediately with large amounts of water. Get medical attention if irritation persists.

Skin contact

Under normal transport conditions, liquid may be hot enough to burn exposed skin. Wash area thoroughly with soap and water. Get medical attention if irritation develops or persists.

Inhalation

Not expected to be an inhalation hazard.

Ingestion

For larger amounts, do not induce vomiting, but give one or two glasses of water to drink and get medical attention. Never give anything by mouth to an unconscious.

Notes to physician

Treat symptomatically.

5. Fire-fighting measures

Flammable properties

Material will burn in a fire.

Extinguishing media

Suitable extinguishing media

Use dry chemical, carbon dioxide or fire-fighting foam for Class B fires to extinguish fire. Water may be ineffective on fire. Material floats on water.

Protection of firefighters

Specific hazards arising from the chemical

Combustion may produce COx and other decomposition products in the case of incomplete combustion.

Fire fighting equipment/instructions

Evacuate area and fight fire from a safe distance.

Use water spray to cool adjacent structures and to protect personnel. Stay away from storage tank ends. Withdraw immediately in case of rising sound from venting safety device or any discoloration of storage tank due to fire.

Firefighters must wear NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

6. Accidental release measures

Environmental precautions

If material is released to the environment, take immediate steps to stop and contain release. Caution should be exercised regarding personnel safety and exposure to the released material. Notify local authorities and the National Response Center, if required. Material may plug water intakes.

Waste Disposal Method - Rendering (reprocessing), not to be landfilled. Do not flush to sewer.

Other Information

Spills can be very slippery. Liquid may be mopped-up, soaked-up with inert absorbents, or pumped. Material may solidify at ambient temperature and can be removed with a shovel or front end loader. Wash floors with soap and hot water and rinse with hot water.

Absorb spill with inert material (e.g. dry sand or earth) then place in a chemical waste container. Large Spills: Dike far ahead of liquid spill for later disposal. Solidified material may be removed with a shovel.

Stop leak when safe to do so.

See Exposure Controls. Personal Protection (Section 8)

Emergency action

Keep unnecessary people away; isolate hazard area and deny entry. IF TANK, RALCAR OR TANK TRUCK IS INVOLVED IN A FIRE, isolate for 800 meters (1/2 mile) in all directions. Evacuate area endangered by release as required. (See Exposure Controls/Personal Protection, Section 8) Stay upwind.

7. Handling and storage

Handling

Standard precautions appropriate for handling hot liquids

Good personal hygiene practices such as properly handling contaminated clothing, using wash facilities before entering public areas and restricting eating, drinking and smoking to designated areas are essential for preventing personal chemical contamination. do not breathe fumes or vapor. Avoid contact with skin or eyes.

Storage

Store in tightly closed containers in a cool, dry isolated, well-ventilated area away from heat, sources of ignition and incompatibles. Avoid contact with strong oxidizers.

Empty containers may contain material residue. Do not reuse without adequate precautions.

Do not eat, drink or smoke in areas of use or storage.

8. Exposure controls/personal protection

Occupational exposure limits	Not available
Engineering controls	Ventilation and other forms of engineering controls are the preferred means for controlling exposures.
Personal protective equipment	
Eye / face protection	Keep away from eyes. Eye contact can be avoided by using chemical safety glasses, goggles and/or face shield. Have eye washing facilities readily available where eye contact can occur.
Skin protection	Avoid skin contact with this material. Use appropriate chemical protective gloves when handling. Additional protective clothing may be necessary. Material may be HOT.
Respiratory protection	A NIOSH approved air purifying respirator with an appropriate cartridge or canister, such as an organic vapor cartridge, may be used in circumstances where airborne organic vapor concentrations may exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or an other circumstances where air purifying respirators may not provide adequate protection. See OSHA 29 CFR 1910.134 for more information regarding respiratory protection and Assigned Protection Factors (APFs).

9. Physical and chemical properties

Physical State Form	Liquid
Color	Brown
Odor	Characteristic
Odor threshold	Characteristic
Physical State Form	Not available
Vapor Pressure	Not available
Vapor density	Exceeds 1.0
Boiling Point	N/D
Melting point/freezing point	50° to 105° F (15° – 40° C)
Solubility (water)	Insoluble
Specific gravity	0.89 @ 140° F (60° C)
Relative density	Not available
Flash point	> 500° F (260° C)
Flammability limits in air, upper, % by volume	Not available
Flammability limits in air, lower, % by volume	Not available
Auto-ignition temperature	Not available
VOC	Not available
Evaporation rate	Not available
Viscosity	Not available
Percent volatile	Not available
Partition coefficient (n-octanol/water)	Not available
Pour point	28 °F (-2.2 C)
Molecular weight	Not available
Molecular formula	Not available
Other Data	
Chemical family	Triglycerides
Density	0.92 g/ml at 60 F (15.6)

Electrostatic properties

Conductivity Not available

Cloud point Not available

10. Stability and reactivity

Chemical stability Material is stable under normal conditions.

Conditions to avoid Avoid unventilated areas, excessive heat, open flames, sparks and ungrounded electrical equipment.

Incompatible materials None

Hazardous decomposition products Not anticipated under normal conditions.

Possibility of hazardous reactions Not anticipated under normal conditions.

11. Toxicological information

Routes of exposure Inhalation, ingestion, skin and eye contact

Numerical measures of toxicity N/A

Eye contact Get medical attention if eye irritation persists.

Skin contact Get medical attention if skin irritation develops or persists.

Inhalation If breathing difficulty occurs, get medical attention .

Ingestion Routine use of this product is not expected to cause any situation which could lead to ingestion.

12. Ecological information

Ecotoxicity Material not classified as harmful to aquatic organisms. However, secondary effects such as lowered dissolved oxygen when introduced to surface water can be toxic to aquatic life.

Persistence and degradability Readily biodegradable in the environment

**Bioaccumulation/
Accumulation** This material is not expected to bio accumulate in aquatic animals.

Mobility in environmental media Not classified in terms of mobility in air, soil and water.

13. Disposal considerations

Disposal instruction This material, as supplied, when discarded or disposed of, is not a hazardous waste according to Federal Regulations (40 CFR 261). Under the Resource Conservation and Recovery Act. (RCRA), it is the responsibility of the user of the material to characterize and determine, at the time of disposal, whether the material is a hazardous waste subject to RCRA.

For additional handling information and protection of employees, see Section 7 (Handling and Storage) and Section 8 (Exposure Controls/Personal Protection).

14. Transport information

General BILL OF LADING - BULK (U.S. DOT): Non-regulated by DOT
BILL OF LADING - NON-BULK (U.S. DOT): Non-regulated by DOT

UN number (United Nations hazardous material #) Not a hazardous material

15. Regulatory information

US federal regulations

All ingredients are on the TSCA inventory, or are not required to be listed on the TSCA inventory.

This material does not contain toxic chemicals (in excess of the applicable de minimis concentration) that are subject to the annual toxic chemical release reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 313 (40 CFR 372).

Check local, regional or state/provincial regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Failure to report may result in substantial civil and criminal penalties.

State regulations

Based on available information this product does not contain any components or chemicals currently known to the State of California to cause cancer, birth defects or reproductive harm at levels which would be subject to Proposition 65. Reformulation, use or processing of this material may affect its composition and require re-evaluation.

16. Other information

NFPA ratings

Health: 0

Flammability: 1

Instability: 0

Disclaimer

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet. Adequate training and instruction should be given by you or your employees and affected personnel. Appropriate warnings and safe handling procedures should be provided by you to handlers and users. Appropriate warnings and safe handling procedures should be provided by you to handlers and users. Additionally, the user should review this information, satisfy itself as to its suitability and completeness, and pass on the information to its employees or customers in accordance with the applicable federal, state, provincial or local hazard communication requirements. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, vendor neither assumes nor retains any responsibility for any damage or injury resulting from abnormal use, from any failure to adhere to appropriate practices, or from any hazards inherent in the nature of the material. Moreover, unless an employee or a customer accesses or receives an SDS directly from the company, there is no assurance that a document obtained from alternate sources is the most currently available SDS.

Issuer date

11/13/2014

This data sheet contains changes from the previous version in section(s):

Handling and storage: Handling

Exposure controls/personal protection: Skin Protection

Physical & Chemical Properties: Multiple Properties

Completed by

Darling Ingredients Inc. - Research, Technology and Governmental Affairs