



Material Safety Data Sheet

Synthetic 5th Wheel & Open Gear Compound

Date : 09/15/2013
Version : 4

Section 1. Product and company identification

Product name

Synthetic 5th Wheel & Open Gear Compound

Material uses

Lubricating Fluid.

Supplier/Manufacturer

AMSOIL INC.
925 Tower Avenue
Superior, WI 54880

Code

GFW

MSDS authored by

AMSOIL INC.

In case of emergency

CHEMTREC, U.S. : 1-800-424-9300
International: +1-703-527-3887

Section 2. Hazards identification

Emergency overview

Color : White.

Physical state : Liquid. [Viscous Spray.]

Odor : Mild hydrocarbon.

Signal word : WARNING!

Hazard statements : EXTREMELY FLAMMABLE. CONTENTS UNDER PRESSURE. CAUSES EYE AND SKIN IRRITATION. MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Precautions : Do not ingest. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation : No known significant effects or critical hazards.

Ingestion : May be harmful if swallowed.

Skin : Irritating to skin.

Eyes : Irritating to eyes.

Potential chronic health effects

Chronic effects : Contains material that can cause target organ damage.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Target organs : Contains material which may cause damage to the following organs: kidneys, lungs, the nervous system, the reproductive system, liver, heart, peripheral nervous system, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

Over-exposure signs/symptoms

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Ingestion : No specific data.

Skin : Adverse symptoms may include the following:
irritation
redness

Eyes : Adverse symptoms may include the following:
pain or irritation
watering
redness

Medical conditions aggravated by overexposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

Section 3. Composition/information on ingredients

United States

Name	CAS number	%
n-Hexane	110-54-3	10 - 30
Propane	74-98-6	10 - 30
Isobutane	75-28-5	10 - 30
Zinc oxide	1314-13-2	1 - 5
Toluene	108-88-3	0.1 - 1

Canada

Name	CAS number	%
n-Hexane	110-54-3	10 - 30
Propane	74-98-6	10 - 30
Isobutane	75-28-5	10 - 30
Zinc oxide	1314-13-2	1 - 5
Toluene	108-88-3	0.1 - 1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 4. First aid measures

Eye contact : Immediately flush eyes with plenty of water for at least 20 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 20 minutes. Get medical attention if symptoms occur.

Inhalation : Move exposed person to fresh air. Get medical attention if symptoms occur.

- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Call medical doctor or poison control center immediately.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Section 5. Fire-fighting measures

- Flammability of the product** : Extremely flammable. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may create fire or explosion hazard.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Hazardous decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

- Personal precautions** : In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Hazardous to aquatic environment. May cause long-term adverse effects in the aquatic environment. Prevent leaking substances from running into the aquatic environment or the sewage system.
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose via a licensed waste disposal contractor.
- Large spill** : Immediately contact emergency personnel. Stop leak if without risk. Prevent entry into sewers, water courses, basements or confined areas. Use spark-proof tools and explosion-proof equipment. Dispose via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Empty containers retain product residue and can be hazardous. Keep away from heat, sparks and flame.
- Storage** : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

United States

Ingredient	Exposure limits
n-Hexane	<p>ACGIH TLV (United States, 3/2012). Absorbed through skin. TWA: 50 ppm 8 hours.</p> <p>NIOSH REL (United States, 6/2009). TWA: 180 mg/m³ 10 hours. TWA: 50 ppm 10 hours.</p> <p>OSHA PEL (United States, 6/2010). TWA: 1800 mg/m³ 8 hours. TWA: 500 ppm 8 hours.</p>
Propane	<p>ACGIH TLV (United States, 3/2012). TWA: 1000 ppm 8 hours.</p> <p>NIOSH REL (United States, 6/2009). TWA: 1800 mg/m³ 10 hours. TWA: 1000 ppm 10 hours.</p> <p>OSHA PEL (United States, 6/2010). TWA: 1800 mg/m³ 8 hours. TWA: 1000 ppm 8 hours.</p>
Isobutane	<p>ACGIH TLV (United States, 3/2012). TWA: 1000 ppm 8 hours.</p> <p>NIOSH REL (United States, 6/2009). TWA: 1900 mg/m³ 10 hours. TWA: 800 ppm 10 hours.</p>
Zinc oxide	<p>NIOSH REL (United States, 6/2009). CEIL: 15 mg/m³ Form: Dust TWA: 5 mg/m³ 10 hours. Form: Dust and fumes STEL: 10 mg/m³ 15 minutes. Form: Fume</p> <p>OSHA PEL (United States, 6/2010). TWA: 5 mg/m³ 8 hours. Form: Fume TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust</p> <p>ACGIH TLV (United States, 3/2012). STEL: 10 mg/m³ 15 minutes. Form: Respirable fraction</p>

Toluene	<p>TWA: 2 mg/m³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 6/2009). STEL: 560 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 375 mg/m³ 10 hours. TWA: 100 ppm 10 hours. OSHA PEL Z2 (United States, 11/2006). AMP: 500 ppm 10 minutes. CEIL: 300 ppm TWA: 200 ppm 8 hours. ACGIH TLV (United States, 3/2012). TWA: 20 ppm 8 hours.</p>
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Canada

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredient	List name	ppm	mg/m ³	Other	ppm	mg/m ³	Other	ppm	mg/m ³	Other	Notations
n-Hexane	US ACGIH 3/2012	50	-	-	-	-	-	-	-	-	[1]
	AB 4/2009	50	176	-	-	-	-	-	-	-	[1]
	BC 4/2012	20	-	-	-	-	-	-	-	-	[1]
	ON 7/2010	50	-	-	-	-	-	-	-	-	[1]
	QC 9/2011	50	176	-	-	-	-	-	-	-	[1]
Propane	US ACGIH 3/2012	1000	-	-	-	-	-	-	-	-	
	AB 4/2009	1000	-	-	-	-	-	-	-	-	
	BC 4/2012	1000	-	-	-	-	-	-	-	-	
	ON 7/2010	1000	-	-	-	-	-	-	-	-	
	QC 9/2011	1000	1800	-	-	-	-	-	-	-	
Isobutane	US ACGIH 3/2012	1000	-	-	-	-	-	-	-	-	
	AB 4/2009	1000	-	-	-	-	-	-	-	-	
	BC 4/2012	1000	-	-	-	-	-	-	-	-	
	ON 7/2010	800	-	-	-	-	-	-	-	-	
Zinc oxide	US ACGIH 3/2012	-	2	-	-	10	-	-	-	-	[a]
	AB 4/2009	-	2	-	-	10	-	-	-	-	[b]
	BC 4/2012	-	2	-	-	10	-	-	-	-	[b]
	ON 7/2010	-	2	-	-	10	-	-	-	-	[a]
	QC 9/2011	-	5	-	-	10	-	-	-	-	[c]
Toluene	US ACGIH 3/2012	20	-	-	-	-	-	-	-	-	
	AB 4/2009	50	188	-	-	-	-	-	-	-	[1]
	BC 4/2012	20	-	-	-	-	-	-	-	-	
	ON 7/2010	20	-	-	-	-	-	-	-	-	
	QC 9/2011	50	188	-	-	-	-	-	-	-	[1]

[1]Absorbed through skin.

Form: [a]Respirable fraction [b]Respirable [c]Fume

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Use explosion-proof ventilation equipment.

Hygiene measures : Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

Respiratory	: Not required under normal conditions of use. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Ensure a MSHA/NIOSH-approved respirator or equivalent is used.
Hands	: Use gloves appropriate for work or task being performed. Recommended: Natural rubber (latex).
Eyes	: Safety eyewear should be used when there is a likelihood of exposure. Recommended: Safety glasses with side shields.
Skin	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. No special protective clothing is required. Recommended: Coveralls.
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Section 9. Physical and chemical properties

Physical state	: Liquid. [Viscous Spray.]	Odor	: Mild hydrocarbon.
Color	: White.	pH	: Not available.
Flash point	: Closed cup: -97°C (-142.6°F) [Pensky-Martens.]	Auto-ignition temperature	: 240°C (464°F)
Flammable limits	: Lower: 1.2% Upper: 10.9%	Melting point/ Pour point	: Not available.
Boiling point	: Not available.	Vapor pressure	: 8.3 kPa (62.25 mm Hg) [20°C]
Relative density	: Not available.	Vapor density	: Not available.
Volatility	: Not available.	Evaporation rate	: Not available.
Viscosity	: Kinematic: 6.7 cm ² /s (670 cSt) (100°C) Kinematic: 265 cm ² /s (26500 cSt) (40°C)	Solubility	: Not miscible or difficult to mix.

Section 10. Stability and reactivity

Chemical stability	: The product is stable.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame).
Materials to avoid	: Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
n-Hexane	LC50 Inhalation Gas. LD50 Oral	Rat Rat	48000 ppm 15840 mg/kg	4 hours -
Isobutane	LC50 Inhalation Vapor	Rat	658000 mg/m ³	4 hours
Toluene	LC50 Inhalation Vapor LD50 Oral	Rat Rat	49 g/m ³ 636 mg/kg	4 hours -

Chronic toxicity

There is no data available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
n-Hexane	Eyes - Mild irritant	Rabbit	-	10 mg	-
Zinc oxide	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Toluene	Eyes - Mild irritant	Rabbit	-	0.5 minutes 100 mg	-
	Eyes - Mild irritant	Rabbit	-	870 µg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 mg	-
	Skin - Mild irritant	Pig	-	24 hours 250 µL	-
	Skin - Mild irritant	Rabbit	-	435 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-

Sensitizer

Skin : There is no data available.

Respiratory : There is no data available.

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Isobutane	-	-	-	None.	-	-
Toluene	A4	3	-	-	-	-

Mutagenicity

There is no data available.

Teratogenicity

There is no data available.

Reproductive toxicity

There is no data available.

Section 12. Ecological information

Ecotoxicity : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
n-Hexane Zinc oxide	Acute LC50 113000 µg/l Fresh water	Fish - Oreochromis mossambicus	96 hours
	Acute EC50 0.042 mg/L Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
Toluene	Acute LC50 98 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 320 ppm Fresh water	Fish - Lepomis macrochirus	96 hours
	Chronic NOEC 0.017 mg/L Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	Acute EC50 433 ppm Marine water	Algae - Skeletonema costatum	96 hours
	Acute EC50 12500 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 6000 µg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 5500 µg/l Fresh water	Fish - Oncorhynchus kisutch - Fry	96 hours
Chronic NOEC 500000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours	
Chronic NOEC 1000 µg/l Fresh water	Daphnia - Daphnia magna	21 days	

Persistence/degradability

There is no data available.

Section 13. Disposal considerations







Waste disposal : The generation of waste should be avoided or minimized wherever possible. This material and its container must be disposed of in a safe way. Do not puncture or incinerate container. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

North America

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	UN1950	Aerosols, flammable (each not exceeding 1 L capacity)	2.1	-		-
TDG Classification	UN1950	Aerosols, flammable (each not exceeding 1 L capacity)	2.1	-		-
IMDG Class	UN1950	Aerosols, flammable (each not exceeding 1 L capacity). Marine pollutant (Zinc oxide)	2.1	-	 	Emergency schedules (EmS) F-D, S-U
IATA-DGR Class	UN1950	Aerosols, flammable (each not exceeding 1 L capacity)	2.1	-	 	-

PG* : Packing group

Exemption to the above classification may apply.

AERG : 126

Section 15. Regulatory information

United States

HCS Classification : Flammable aerosol
Irritating material
Target organ effects

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.
SARA 302/304: No products were found.
SARA 311/312 Hazards identification: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard
Clean Water Act (CWA) 307: Zinc oxide; Toluene
Clean Water Act (CWA) 311: Toluene
Clean Air Act (CAA) 112 regulated flammable substances: Propane; Isobutane

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Listed

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	n-Hexane Zinc oxide Toluene	110-54-3 1314-13-2 108-88-3	10 - 30 1 - 5 0.1 - 1
Supplier notification	n-Hexane Zinc oxide Toluene	110-54-3 1314-13-2 108-88-3	10 - 30 1 - 5 0.1 - 1

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: n-Hexane; Propane; Isobutane; Zinc oxide; Toluene

New York : The following components are listed: n-Hexane; Toluene

New Jersey : The following components are listed: n-Hexane; Propane; Isobutane; Zinc oxide; Toluene

Pennsylvania : The following components are listed: n-Hexane; Propane; Isobutane; Zinc oxide; Toluene

California Prop. 65

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

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Toluene	No.	Yes.	No.	7000 µg/day (ingestion) 13000 µg/day (inhalation)

Canada

WHMIS (Canada) : Class A: Compressed gas.
Class B-5: Flammable aerosol.
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

Canadian lists

Canadian NPRI : The following components are listed: n-Hexane; Propane; Isobutane; Zinc oxide; Toluene

CEPA Toxic substances : None of the components are listed.

Canada inventory : All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16. Other information

United States

Label requirements : EXTREMELY FLAMMABLE. CONTENTS UNDER PRESSURE. CAUSES EYE AND SKIN IRRITATION. MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

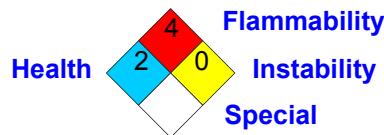
Hazardous Material Information System (U.S.A.) :

Health	*	2
Flammability		4
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) :



Date of issue : 09/15/2013
Date of previous issue : 08/15/2012
Version : 4

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.