

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29 CFR 1910.1200 (GHS)
According to Canada WHMIS 2015

Product name	SYN-O-AD 9578	
Product id	7111	
Revision date	27/07/2017	Revision: 7
Supersedes	05/07/2017	

1. Identification of the substance & the company

Product identifier	SYN-O-AD 9578
Chemical name	Isopropylphenyl diphenyl phosphate mixture
Synonym(s)	Phenol, isopropylated, phosphate (3:1), IpTPP.
Chemical family	Aryl phosphate
Type of product and use	Phosphorus Lubricant Additive and Aviation Fluid Base Stock
Supplier	ICL-IP America Inc. 622 Emerson Road - Suite 500 St Louis, Missouri 63141, USA Tel:(314)983-7884 Fax:(314)983-7607 e-mail:msdsinfo@icl-group.com
Emergency Telephone	Chemtrec: (800) 424-9300 Medical: PROSAR 1-888-875-1685 (24HRS)

2. Hazards identification

GHS classification	Skin Sens. 1, H317 May cause an allergic skin reaction Rep. 2 H361 - Suspected of damaging fertility or the unborn child STOT RE 2, H373 - May cause damage to ovary/oviduct, adrenal gland, liver, epididymides through prolonged or repeated exposure Aquatic Chronic 1, H410 - Very toxic to aquatic life with long lasting effects
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Signal Word	WARNING
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Hazard statements	H317 - May cause an allergic skin reaction H361 - Suspected of damaging fertility or the unborn child H373 - May cause damage to ovary/oviduct, adrenal gland, liver, epididymides through prolonged or repeated exposure H410 - Very toxic to aquatic life with long lasting effects
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Precautionary statements

P261 - Avoid breathing fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off all contaminated clothing and wash it before reuse
P391 - Collect spillage

P202 - Do not handle until all safety precautions have been read and understood
P272 - Contaminated work clothing should not be allowed out of the workplace
P273 - Avoid release to the environment
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P405 - Store locked up
P501 - Dispose of contents/container in accordance with national and international regulations

NFPA Ratings (Scale 0-4) Health = 2, Fire = 1, Reactivity = 0.

HMIS Ratings (Scale 0-4) Health = 2*, Fire =1, Reactivity = 0.

3. Composition / information on ingredients

Components	CAS No.	Weight %
Propylated triphenyl phosphate	68937-41-7	81-87
Triphenyl phosphate	115-86-6	13-19

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4. First-aid measures

Eye contact	Holding the eyelids apart, flush eyes promptly with copious flowing water for at least 20 minutes. Get medical attention immediately.
Skin contact	Remove contaminated clothing. Wash skin thoroughly with mild soap and plenty of water for at least 15 minutes. Wash clothing before reuse. Get medical attention if irritation occurs.
Inhalation	In case of inhalation, remove person to fresh air. Keep him quiet and warm. Apply artificial respiration if necessary and get medical attention immediately.
Ingestion	If swallowed, wash mouth thoroughly with plenty of water. Get medical attention immediately. ----- NOTE: Never give an unconscious person anything to drink -----

Most important symptoms and effects, acute or delayed

May cause an allergic skin reaction
Suspected of damaging fertility or the unborn child.
May cause damage to ovary/oviduct, adrenal gland, liver, epididymides through prolonged or repeated exposure

Notes to the physician Treat symptomatically and supportively.

5. Fire - fighting measures

Suitable extinguishing media	Material is not combustible. Use extinguishing media appropriate to surrounding fire conditions.
Unusual fire and explosion hazards	When heated to decomposition, may release poisonous and corrosive fumes of carbon dioxide, carbon monoxide and phosphorus oxides.
Fire fighting procedure	Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA). Contain runoff to prevent entry into water or drainage systems.

6. Accidental release measures

Personal precautions	Wear appropriate safety clothing and eye/face protection (see Section 8).
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Methods for cleaning up Soak up with sand or other suitable absorbent and dispose of as solid waste. Collect in suitable and properly labeled containers. Ventilate area and wash spill site after material pickup is complete.

Environmental precautions Prevent product from entering drains, ditches and rivers.

7. Handling and storage

Handling Avoid bodily contact. Keep containers tightly closed.

Storage Store in a dry, cool, well-ventilated area away from incompatible materials (see "materials to avoid"). Maximum recommended storage temperature of 65°C (149°F) Crystallizes at temperatures below 4.4°C (40°F).

8. Exposure controls / personal protection

Exposure Limits :

Components	ACGIH-TLV Data	Korea OEL	OSHA (PEL) Data
Propylated triphenyl phosphate 68937-41-7	Not determined	Not determined	Not determined
Triphenyl phosphate 115-86-6	3 mg/m ³	Not determined	3 mg/m ³

Ventilation requirements Ventilation must be sufficient to maintain atmospheric concentration below recommended exposure limit.

Personal protective equipment:

- **Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment.
- **Hand protection** Neoprene gloves
- **Eye protection** Chemical safety goggles
- **Skin and body protection** Body covering clothes and boots

Hygiene measures Do not eat, smoke or drink where material is handled, processed or stored. Wash hands thoroughly after handling and before eating or smoking. Safety shower and eye bath should be provided.

9. Physical and chemical properties

Appearance Clear colorless liquid
Odor None.
Melting point/range < -20°C
Boiling point/range 410°C (770°F)
Pour point -20.55°C (-5 °F)

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Flash point	>225°C (>437°F) (open cup)
Flammable/Explosion limits	Not flammable/Not explosive
Vapor pressure	2.74x10 ⁽⁻⁴⁾ Pa (20°C)
Density	1.168 (20°C)
Solubility:	
- Solubility in water	0.330-0.367mg/l at 20°C
Partition coefficient (n-octanol/water)	Hydrolyses Log Pow : 4.92-5.17
Auto-ignition temperature	Not self-ignitable
Viscosity	96.3 mPa*sec (dynamic) (20°C)
Explosive properties	There are no chemical groups associated with explosive properties present in the molecule
Oxidising properties	The structure indicates non oxidizing properties

10. Stability and reactivity

Stability	Stable under normal conditions
Conditions to avoid	Exposure to moisture.
Materials to avoid	Strong oxidizers, strong acids and strong alkalis. It hydrolyzes slowly at normal temperatures in acidic or alkaline aqueous solutions.
Hazardous decomposition products	Carbon dioxide and carbon monoxide. Phosphorus oxides.

11. Toxicological information

Acute toxicity:	
- Rat oral LD50	> 2000 mg/kg
- Rabbit dermal LD50	> 2000 mg/kg
- Rat inhalation LC50	200 mg/m ³ air
Skin corrosion/irritation	Mild irritant
Serious eye damage/ irritation	Not irritant
Respiratory or skin sensitisation	Skin sensitiser (study done on the product including additives)

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Chronic toxicity	No data available
Mutagenicity	Tests on mammalian cell cultures with and without metabolic activation did not show mutagenic effects. Not mutagenic by the Ames Test. Weak mutagenic activity in cell forward mutagen assay in mouse lymphoma with metabolic activation.
Carcinogenicity	Not classified by IARC Not included in NTP 14th Report on Carcinogens Not classified as a carcinogen by USA OSHA
Reproductive toxicity	In a reproductive toxicity study, rats received daily oral doses of 25, 100 or 400 mg/kg/day for two weeks. The animals were mated and their reproductive organs were microscopically examined. Decreased fertility was observed in the mid and high dose animals. Adverse effects on the reproductive organs were observed at all dose levels. The results of this study indicated that isopropylated triphenylphosphate is a reproductive toxin.
Specific Target Organ Toxicity (STOT) - Single exposure	No effects on specific target organs have been identified during acute toxicity studies
Specific Target Organ Toxicity (STOT) - Repeat exposure	At dose levels of 25 mg/kg/day and above, parental toxicity was evidenced by increased ovary/oviduct, adrenal gland (males and females) and liver (males only) weights and decreased epididymal weights.
Neurotoxicity	Neurotoxicity only takes place at high dose levels. No classification assigned

12. Ecological information

Aquatic toxicity :

- 96 Hour-LC50, Fish	10.8 mg/l (Pimephales promelas) 1.6 mg/l (Oncorhynchus mykiss)
- 48 hour-LC50, Daphnia magna	1.5 mg/l
- 96 Hour - EC50, Algae	>2.5 mg/L
Chronic toxicity	NOEC = 3.1 ug/L (Freshwater fish)
Invertebrate toxicity	NOEC = 41.5 ug/L
Persistence and degradability	Not readily biodegradable

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Bioaccumulative potential The calculated bioconcentration factor (BCF) is lower than 2000. As such, the substance does not fulfil the requirement of Annex XIII, Para 1.2 and cannot be considered to be "B" or "vB".

Mobility in soil Log Koc: 3.43-3.93 indicating a moderate adsorption potential.

Note: Not considered to be PBT or vPvB

13. Disposal considerations

Waste disposal Observe all federal, state and local environmental regulations when disposing of this material

Disposal of Packaging Dispose of in a safe manner in accordance with local/national regulations.

14. Transportation information

UN No. 3082

DOT Proper shipping name: Environmentally hazardous substances, liquid , n.o.s (contains Triphenyl phosphate & Triaryl phosphates, isopropylated)
Class: 9 - Miscellaneous Hazardous Materials
Labels: 9
Packing Group: III

Not regulated for surface and air transport in non-bulk (<119 gallons) packagings. (contains Triphenyl phosphate & Triaryl phosphates, isopropylated which are Marine Pollutants per 49CFR 172.101 Appendix B)

IMDG Proper shipping name: Environmentally hazardous substance, liquid, n.o.s (contains Triphenyl phosphate & Triaryl phosphates, isopropylated)
Class: 9 - Miscellaneous Dangerous Substances and Articles
Packing Group: III
Labels: 9
Mark: MARINE POLLUTANT

ICAO/IATA Proper shipping name: Environmentally hazardous substance, liquid , n.o.s (contains Triphenyl phosphate & Triaryl phosphates, isopropylated)
Class: 9
Packing group: III
Hazard label(s): Miscellaneous
Marking: Environmentally hazardous substance

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15. Regulatory information

USA	Reported in the EPA TSCA Inventory.
- SARA 313	This product does not contain a chemical listed at or above de minimis concentrations
- California-Prop 65	This product does not contain any ingredient known to the State of California to cause cancer or reproductive toxicity as listed under the State drinking Water and Toxic Enforcement Act of 1986.
- Waste Classifications	This material does not meet RCRA`s characteristic definition of ignitability, corrosivity, or reactivity, and is not listed in 40CFR 261.33.
Canada	Listed in DSL
EU	Reported in EINECS
Australia	Listed in AICS
China	
- China inventory	Listed in IECSC
Japan	Listed in ENCS
Korea	Listed in ECL
New Zealand Inventory	Listed in NZIoC
Philippines	Listed in PICCS
Taiwan	Listed (TCSI)
Thailand	Listed

16. Other information

This data sheet contains changes from the previous version in section(s)
1, 2, 12, 15

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Health, Safety & Environment Policy

We will strive to ensure that our operations and products meet the needs of the present global community without compromising the ability of future generations to meet their needs. We accept that the success of our business is dependent on the supply of products and services that will benefit society whilst ensuring human safety and protection of the environment and natural resources. Within the framework of our commitment to the Responsible Care program, we will provide a healthy and safe work environment for employees and will responsibly manage our products at all stages of their life cycle in order to protect human health and the environment whilst maintaining high production standards of operation.

TO MEET THIS COMMITMENT WE WILL: Comply with or exceed applicable national and international regulatory requirements and other requirements to which we subscribe. Communicate openly and actively encourage dialogue with employees, customers and community concerning our products and operations. Implement documented management systems consistent with and for promotion of the Responsible Care ethics.

Develop and supply products that can be manufactured, transported, used and disposed of safely whilst best meeting the needs of our customers. Regularly assess, continually improve and responsibly manage health, safety and environmental risks associated with products and processes throughout their life-cycles. Share knowledge and expertise with others and seek to learn from and incorporate improved practices into our own operations.

Educate and train employees, contractors and customers to improve their HSE performance. Communicate up-to-date information to enable our workers, customers and other interested parties to handle our products in a safe and environmentally responsible manner. Endeavor to work with customers, suppliers, distributors and contractors to foster the safe use, transport and disposal of our chemicals. Support Product Stewardship programs in cooperation with customers, distributors and transporters.

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ICL-IP America Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its safety and suitability for their purposes prior to use. In no event will ICL-IP America Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE, ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH THE INFORMATION REFERS.

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End of safety data sheet