



SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29 CFR 1910.1200 (HAZCOM 2012 - GHS)
According to Canada Hazardous Products Regulation (WHMIS 2015)

Product name SYN-O-AD 8485
Product id 7064
Revision date 26/11/2017 **Revision:** 5
Supersedes 11/09/2014

1. Identification of the substance & the company

Product identifier Phenol, isobutylenated, phosphate (3:1)
Chemical name Reaction mass of 4-tert-butylphenyl diphenyl phosphate and bis(4-tert-butylphenyl) phenyl phosphate and triphenyl phosphate
Chemical family Aryl phosphate
Type of product and use Lubricant Additive
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

OSHA HAZARDS No OSHA hazards
Labels and other form of warning
NFPA Ratings (Scale 0-4) Health = 1, Fire = 1, Reactivity = 0
HMIS Ratings (Scale 0-4) Health = 1, Fire =1, Reactivity = 0.

3. Composition / information on ingredients

Components	CAS No.	Weight %
t-Butylphenyl diphenyl phosphate	56803-37-3	40 - 46
Bis(t-butylphenyl)phenyl phosphate	65652-41-7	12 - 18
Tri(t-butylphenyl) phosphate	78-33-1	1 - 3
Triphenyl phosphate	115-86-6	42 - 48

Butylated triphenyl phosphate is multi constituent substance can also be described as: (CAS No. 68937-40-6)
Phenol, isobutylenated, phosphate (3:1)



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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 persists.
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

None known

Notes to the physician	Treat symptomatically and supportively. No specific antidote.
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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. The material is not sensitive to ignition from static discharge.
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.



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6. Accidental release measures

Personal precautions Wear appropriate safety clothing and eye/face protection (see Section 8).

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).

8. Exposure controls / personal protection

Exposure Limits :

Components	ACGIH-TLV Data	Korea OEL	OSHA (PEL) Data
t-Butylphenyl diphenyl phosphate 56803-37-3	Not determined	Not determined	Not determined
Bis(t-butylphenyl)phenyl phosphate 65652-41-7	Not determined	Not determined	Not determined
Tri(t-butylphenyl) phosphate 78-33-1	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** Chemical safety gloves
- **Eye protection** Chemical splash goggles and/or face shield if splash hazard exists
- **Skin and body protection** Body covering clothes and boots

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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, transparent liquid
Odor	None.
Melting point/range	-21°C
Boiling point/range	>400°C (762mmHg)
Pour point	-26.11°C (-15 °F)
Flash point	>80°C (closed cup)
Flammable/Explosion limits	Not flammable/Not explosive
Vapor pressure	1.08x10 ⁽⁻³⁾ Pa (20°C)
Density	1.176 g/mL (25°C)
Solubility:	
- Solubility in water	3.2 mg/l at 20°C
Auto-ignition temperature	Not self-ignitable
Decomposition temperature	>234°C
Viscosity	63.6 cP (25°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	> 5000 mg/kg
- Rabbit dermal LD50	> 2000 mg/kg
- Rat inhalation LC50	> 0.4 mg/l



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Skin corrosion/irritation Not irritant

Serious eye damage/ irritation Not irritant

Respiratory or skin sensitisation Sensitiser (Local lymph node assay in the mouse).
Based on the favourable outcome of the Human Patch test and the epidemiological information that no incidences of sensitization are known at the production facility for many years related to the use and production of the substance, it was decided not to classify for sensitization.

Sub-chronic toxicity:

- NOEL 100 ppm (13 weeks oral rat)

Chronic toxicity No data available

Mutagenicity No evidence of genotoxic or mutagenic activity was noted in Ames tests, the mouse lymphoma and chromosome aberration tests.

Carcinogenicity Not classified by IARC
Not included in NTP 14th Report on Carcinogens
Not classified as a carcinogen by USA OSHA

Reproductive toxicity Butylated triphenyl phosphate did not demonstrate reproductive toxicity. In a rat reproduction study, male and female animals received either 50, 250 or 1000 mg/kg/day for several weeks after which they mated. There was no reproductive toxicity observed at any dose level. Diagnostic pathology confirmed no alterations to the reproductive organs. There was no effect on mating index, litter size, survival of the offspring or on any other measured parameter.

Teratogenicity Not teratogenic when administered orally up to 1000 mg/kg

Specific Target Organ Toxicity (STOT) - Repeat exposure NOAEL 107.5 mg/kg bw /day (90 days oral, male rat) NOAEL 124.8 mg/kg bw /day (90 days oral, female rat)

Neurotoxicity No signs of acute delayed neurotoxicity when administered orally to hens at 23 g/kg



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12. Ecological information

Aquatic toxicity :

- 96 Hour-LC50, Fish 0.8 mg/l (Ictalurus punctatus)

- 48 Hour-EC50, Daphnia magna 202 µg/L

Biodegradation Readily biodegradable

Bioaccumulative potential The wholefish BCF was found to be 1850.

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 (triphenyl phosphate, tert-butylated triphenyl phosphate mixtures containing 10% to 48% triphenyl phosphates)
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 which is a Marine Pollutant per 49CFR 172.101 Appendix B)

IMDG Proper shipping name: Environmentally hazardous substance, liquid, n.o.s (triphenyl phosphate, tert-butylated triphenyl phosphate mixtures containing 10% to 48% triphenyl phosphates)
Class: 9 - Miscellaneous Dangerous Substances and Articles
Packing Group: III
Labels: 9
Mark: MARINE POLLUTANT



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ICAO/IATA	Proper shipping name: Environmentally hazardous substance, liquid , n.o.s (triphenyl phosphate, tert-butylated triphenyl phosphate mixtures containing 10% to 48% triphenyl phosphates) 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.
CERCLA/SARA - 302 Extremely Hazardous Substances	No CERCLA RQ is being assigned to the generic or broad class.
- SARA 313	This product does not contain a chemical listed at or above de minimis concentrations
- Massachusetts Right-to-Know Hazardous Substances list	Listed (Triphenyl phosphate)
- New York City, Community Right-to-Know Hazardous Substance List	Listed (Triphenyl phosphate)
- New Jersey Right-to-Know Hazardous Substances list	Listed (Triphenyl phosphate)
- Pennsylvania Right-to-Know Hazardous Substances list	Listed (Triphenyl phosphate)
- Rhode Island Right-to-Know Hazardous Substances list	Listed (Triphenyl phosphate)
- 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.
Canada	Listed in DSL
EU	Reported in EINECS
Australia	Listed in AICS



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China - China inventory	Listed in IECSC
Japan	Listed in ENCS
Korea	listed in KECI
New Zealand Inventory	Listed in NZIoC
Philippines	Listed in PICCS
Taiwan	Listed (TCSI)

16. Other information

This data sheet contains changes from the previous version in section(s)
1, 2 (REACH), 3 (REACH), 7, 10, 13, 15

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



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End of safety data sheet