



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Revision date 18-May-2020

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Revision Number 5

1. IDENTIFICATION

Product identifier

Product Name Fyrol A710

Other means of identification

Product Code(s) 7021

UN/ID no. UN3082

Chemical Family Aryl phosphate

Recommended use of the chemical and restrictions on use

Recommended use Flame retardant

Supplier's details

Manufacturer

ICL-IP America Inc.
ICL
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 number

Emergency Telephone Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 2

GHS Label elements, including precautionary statements



Signal word

Warning

Hazard statements

Very toxic to aquatic life
Toxic to aquatic life with long lasting effects

Precautionary Statements

P273 - Avoid release to the environment
P391 - Collect spillage

P501 - Dispose of contents/ container to an approved waste disposal plant

Other hazards which do not result in classification

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Chemical name	CAS No.	Weight-%
Proprietary Phosphate Esters	-	90-100

4. FIRST AID MEASURES

Description of necessary first aid measures

Inhalation	Remove to fresh air.
Skin contact	Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
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/effects, acute and delayed

Symptoms No information available.

Indication of immediate medical attention and special treatment needed, if necessary

Note to physicians Treat symptomatically and supportively.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific hazards arising from the chemical

Specific hazards arising from the chemical May emit toxic fumes under fire conditions.

Hazardous combustion products Carbon monoxide, carbon dioxide (CO₂), and phosphorus oxides.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

Environmental precautions

Environmental precautions Should not be released into the environment. See Section 12 for additional Ecological

Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Soak up with sand or other suitable absorbant and dispose of as solid waste. Collect in suitable and properly labeled containers. Ventilate area and wash spill site after material pickup is complete.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Crystallizes at temperatures below 4.4°C (40°F). Maximum recommended storage temperature of 65°C (149°F).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure guidelines

Chemical name	ACGIH TLV	OSHA PEL	European Union	China
Proprietary Phosphate Esters	-	-	-	-

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical safety goggles.

Hand protection Protective gloves

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. In case of insufficient ventilation, wear suitable respiratory equipment.

Skin and body protection Wear suitable protective clothing.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Liquid
Appearance Clear, transparent liquid
Odor None

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	no data available	None known
Melting point / freezing point	-21°C / -5.8 °F	
Boiling point / boiling range	>400 °C / 752 °F	750 mmHg
Flash point	>80 °C / 201.2 °F	CC (closed cup)
Evaporation rate	no data available	None known
Flammability (solid, gas)	Not flammable .	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	no data available	
Lower flammability or explosive limits	no data available	
Vapor pressure	1.08x10 ⁻³ Pa (20°C)	
Vapor density	no data available	None known
Relative density	1.176 g/mL (25°C)	
Water solubility	3.2mg/l at 25°C	
Solubility in other solvents	no data available	None known
Partition coefficient	Log Pow : 4.85	None known
Autoignition temperature	. Not self-ignitable	
Decomposition temperature	>234°C	
Kinematic viscosity	no data available	None known
Dynamic viscosity	63.6 cP (25°C)	
<u>Other information</u>		
Fire point	No information available	
Oxidizing properties	The structure indicates non oxidizing properties.	
Explosive properties	There are no chemical groups associated with explosive properties present in the molecule.	
Molecular weight	No information available	
Liquid Density	No information available	
Bulk density	No information available	

10. STABILITY AND REACTIVITY

Reactivity	It hydrolyzes slowly at normal temperatures in acidic or alkaline aqueous solutions.
Stability	Stable under normal conditions.
Possibility of Hazardous Reactions	None under normal processing.
Conditions to avoid	None known based on information supplied.
Incompatible materials	Strong oxidizers, strong acids and strong alkalis.
Hazardous decomposition products	Carbon dioxide and carbon monoxide. Phosphorus oxides.

11. TOXICOLOGICAL INFORMATION

Information on the likely routes of exposure

Product Information

Symptoms No information available. .

Numerical measures of toxicity

Acute toxicity

Component information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Proprietary Phosphate Esters	> 5000 mg/kg	> 2000 mg/kg	> 0.4 mg/l

Delayed and immediate effects and also chronic effects from short and long term exposure

Skin corrosion/irritation	Not irritant.
Serious eye damage/irritation	Not irritant.
Respiratory or skin sensitization	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.
Germ cell mutagenicity	No evidence of genotoxic or mutagenic activity was noted in Ames tests, the mouse lymphoma and chromosome aberration tests.
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	IARC	ACGIH	NTP
Proprietary Phosphate Esters	-	-	-

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.
STOT - single exposure	Based on available data, the classification criteria are not met.
STOT - repeated exposure	Based on available data, the classification criteria are not met. NOAEL 107.5 mg/kg bw /day (90 days oral, male rat) NOAEL 124.8 mg/kg bw/day (90 days oral, female rat).
Neurological effects	No signs of acute delayed neurotoxicity when administered orally to hens at 23 g/kg.
Aspiration hazard	Not expected.

12. ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity	Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.
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Component information

Chemical name	Algae/aquatic plants	Fish	Crustacea	Toxicity to microorganisms
Proprietary Phosphate Esters	EC50: 1.4 mg/L NOEC: 0.05 mg/L (Pseudokirchneriella subcapitata, 72 h)	LC50: 0.8 mg/l (Ictalurus punctatus, 96 h) NOEC: 0.093 mg/L (90 days)	EC50: 202 µg/L (48 h, Daphnia magna) NOEC: 0.0399 mg/L(21 days, Daphnia magna)	-

Persistence and degradability

READILY BIODEGRADABLE.

Bioaccumulative potential

The wholefish BCF was found to be 1850.

Chemical name	Partition coefficient
Proprietary Phosphate Esters	4.85

Mobility

Not applicable,. Readily biodegradable.

Other adverse effects

no data available.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues/unused products

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

Contaminated packaging

Empty containers should be disposed of in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

Note:

Materials carried under UN3082 or UN3077 in either single or inner packaging of ≤5L (liquids) or ≤5kg (solids) may be transported as non-dangerous goods, provided they are packed in good quality packaging and adhere to the corresponding general packaging provisions of the above transport legislation.

IMDG

UN number UN3082
UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Transport hazard class(es) 9
Packing group III
Description: UN3082, Environmentally hazardous substance, liquid, n.o.s.(triphenyl phosphate), 9, III
Marine pollutant Yes
Special precautions None
EmS-No. F-A, S-F
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information available

ADR/RID/ADN

UN number UN3082
UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Transport hazard class(es) 9
Labels 9
Packing group III
Description: UN3082, Environmentally hazardous substance, liquid, n.o.s.(triphenyl phosphate), 9, III
Environmental hazards Yes
Special precautions None
Classification code M6

IATA

UN number UN3082
UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Transport hazard class(es) 9

Packing group	III
Description:	UN3082, Environmentally hazardous substance, liquid, n.o.s.(triphenyl phosphate), 9, III
Environmental hazards	Yes
Special precautions	None

DOT

UN/ID no.	UN3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Description:	UN3082, Environmentally hazardous substance, liquid, n.o.s.(triphenyl phosphate), 9, III
Hazard class	9
Packing group	III
Marine pollutant	Yes.

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not Applicable

The Stockholm Convention on Persistent Organic Pollutants Not Applicable

The Rotterdam Convention Not Applicable

International Inventories

GHS hazardous component CAS registry numbers appearing in section 3 may differ from substances appearing in section 15 due to country or regional chemical inventory coverage requirements, however, remain in compliance with the inventory

TSCA	Listed or exempted
DSL	Listed or exempted
ENCS	Listed or exempted
IECSC	Listed or exempted
KECL	Listed or exempted
PICCS	Listed or exempted
AICS	Listed or exempted
NZIoC	Listed or exempted
TCSI	Listed or exempted
NCI	Listed or exempted
TECI	Not Listed
NSQ	Not Listed

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals
TCSI - Taiwan Chemical Substance Inventory
NCI - Vietnam National Chemicals Inventory
TECI - Thailand Inventory FDA Existing Chemicals
NSQ - Mexico National Inventory of Chemical Substances

16. OTHER INFORMATION

Revision date 18-May-2020

Revision Note The symbol (*) in the margin of this SDS indicates that this line has been revised.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

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End of Safety Data Sheet