SAFETY DATA SHEET
per OSHA HazCom 2012

Revised Date: June 9, 2021

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

Product name:	Quadricyclane
Product Number:	22100
Product use:	TSCA: For R&D Use Only
Restrictions on use:	Not for drug or household use
Safety Sheet Supplier:	Oakley, Inc. 4000 Luxottica Place Mason, OH 45040 USA
Telephone:	(614) 492-5610
Emergency Phone:	(614) 674-4846
E-mail address:	info.exciton@luxotticaretail.com

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Acute toxicity, Inhalation (Category 2), H330

GHS Label elements
Pictogram

Signal word: Danger

Hazard statement(s)

H225	Highly flammable liquid and vapor
H330	Fatal if inhaled

Precautionary statement(s)

P210	Keep away from heat/sparks/open flames/ hot surfaces. – No smoking
P233	Keep container tightly closed
P240	Ground/bond container and receiving equipment
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment
P242	Use only non-sparking tools
P243	Take precautionary measures against static discharge
P260	Do not breathe fumes/ gas/ mist/ vapors/ spray.
P271	Use only outdoors or in a well-ventilated area
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284	Wear respiratory protection
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310	Immediately call a POISON CENTER or doctor/physician
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.

P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up
P501	Dispose of contents/ container to an approved waste disposal plant

Hazards not otherwise classified or not covered by GHS
None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms:	Tetracyclo [2.2.1.$0^{2,7}$.$0^{4,6}$]heptane
Formula:	C7 H8
Molecular Weight:	92.14 gm/mol
CAS-No.:	278-06-8
EC-No.:	205-994-1

Hazardous components

Component	Classification	Concentration
Tetracyclo [2.2.1.$0^{2,7}$.$0^{4,6}$]heptane	Flam. Liq. 2; Acute Tox. 2; H225, H330	<= 100%

4. FIRST AID MEASURES,6

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take immediately to a hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed
No further relevant information available – See Section 2.

Indication of any immediate medical attention and special treatment needed
No further relevant information available

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture
Carbon oxides

Special protective equipment for fire-fighters
Wear self-contained breathing apparatus for fire-fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions
Prevent further leakage of spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build-up of electrostatic charge.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters
No reported exposure limit values.

Appropriate engineering controls
Use only in an area equipped with explosion proof exhaust ventilation.

Hygiene measures and engineering controls
Adequate ventilation and/or containment in accordance with good laboratory practices.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with impermeable gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye / face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Body protection
Complete suit protecting against chemicals. Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

a)	Appearance	Form: liquid
b)	Odor	No data available
c)	Odor Threshold	No data available
d)	pH	No data available
e)	Melting point	No data available
f)	Initial boiling point and boiling range	108 °C at 740 mmHg
g)	Flash point	11 °C – closed cup
h)	Evaporation rate	No data available
i)	Flammability	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapor pressure	No data available
l)	Vapor density	No data available
m)	Relative density	0.982 g/cm3
n)	Solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available

10. STABILITY AND REACTIVITY

a)	Reactivity	No data available
b)	Chemical stability	Stable under recommended storage conditions
c)	Possibility of hazardous reactions	Vapors may form explosive mixtures with air
d)	Conditions to avoid (e.g. static discharge)	Heat, flames, and sparks. Extremes of temperature and Direct sunlight
e)	Incompatible materials	Strong oxidizing agents
f)	Hazardous decomposition products	See Section 5.

11. TOXICOLOGICAL INFORMATION

Acute toxicity
No data available

LC50 Inhalation – rat – 4 h – 0.78 mg/l

Dermal: no data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a

known or anticipated carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

Routes of Exposure: Inhalation, Eye contact, Ingestion, Skin contact.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: XB7436000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

Toxicity
No data available

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

PBT and vPvB assessment
No data available

Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3384 Class 6.1 (3) Packing Group I
Proper shipping name: Toxic by inhalation liquid, flammable, n.o.s. (Tetracyclo [2.2.1.$0^{2,7}$.$0^{4,6}$]heptane

Reportable Quantity (RQ): Marine pollutant: No Poison inhalation hazard: Hazard zone B

IMDG
UN number: 3384 Class 6.1 (3) Packing Group I EMS-No: F-E, S-D
Proper shipping name: Toxic by inhalation liquid, flammable, n.o.s. (Tetracyclo [2.2.1.$0^{2,7}$.$0^{4,6}$]heptane
Marine pollutant: No

IATA
UN number: 3384 Class 6.1 (3)
Proper shipping name: Toxic by inhalation liquid, flammable, n.o.s. (Tetracyclo [2.2.1.$0^{2,7}$.$0^{4,6}$]heptane
IATA Passenger: Not permitted for transport
IATA Cargo: not permitted for transport

15. REGULATORY INFORMATION

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (de Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components
No components are subject to Massachusetts Right to Know Act

Pennsylvania Right To Know Components
Tetracyclo [2.2.1.$0^{2,7}$.$0^{4,6}$]heptane CAS-No.: 278-06-8

New Jersey Right To Know Components
Tetracyclo [2.2.1.$0^{2,7}$.$0^{4,6}$]heptane CAS-No.: 278-06-8

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Toxic Substance Control Act (TSCA 8b.): This product is NOT on the EPA Toxic Substances Control Act (TSCA) inventory. The following notices are required by 40 CFR 720.36 (C) for those products not on the inventory list:

(i) These products are supplied solely for use in research and development by or under the supervision of a technically qualified individual as defined in 40 CFR 720.0 et sec.

(ii) The health risks of these products have not been fully determined. Any information that is or becomes available will be supplied on the SDS.

16. OTHER INFORMATION

HMIS Rating

Health hazard:	3
Chronic Health Hazard:	
Flammability:	3
Physical Hazard:	0

NFPA Rating

Health hazard:	3
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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