Suite 450
One North Shore Center
12 Federal Street
Pittsburgh, PA 15212

Safety Data Sheet

KR-64L

1. IDENTIFICATION

Product name	KR-64L
Description	Proprietary aqueous solution
Product class	Boiler Water
Supplier address	Suite 450 One North Shore Center 12 Federal Street Pittsburgh, PA 15212
Telephone numbers	
Company Phone Number	(412) 321-9800
Emergency Telephone	CHEMTREC 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

Skin Irritation, Category 2
Serious Eye Damage, Category 1
Germ Cell Mutagenicity, Category 2
Specific Organ Toxicity, Chronic Exposure, Category 1
Aquatic Environment Toxicity: Acute, Category 3

Signal word

Danger

Hazard statements

Causes skin irritation.
Causes serious eye damage.
Suspected of causing genetic defects.
Causes damage to organs through prolonged or repeated exposure.
Harmful to aquatic life.

Pictograms of related hazards

Precautionary statements

Prevention

Wash skin thoroughly after handling.
Wear protective gloves, protective clothing, eye protection, and face protection.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not eat, drink, or smoke when using this product.
Avoid release to the environment.

Response

Get medical attention if you feel unwell.
IF ON SKIN: Wash with soap and water.
If skin irritation occurs: Get medical attention.
Take off contaminated clothing and wash it before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately contact a POISON CENTER or health care provider.
IF exposed or concerned: Get medical attention.

Storage

Store locked up.

Disposal

Dispose of contents and container in accordance with local, state, and federal regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %
Diethylhydroxylamine (DEHA)	3710-84-7	20–30
Hydroquinone	123-31-9	1–10
Non-hazardous substances	Proprietary	>60

4. FIRST-AID MEASURES

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally to ensure complete rinsing. Remove contact lenses if present and easy to do, then resume rinsing. Get medical attention immediately.

Skin contact Immediately remove all contaminated clothing. Rinse with copious amounts of water; use an emergency shower if available. Wash contaminated clothing before reuse.

Ingestion If swallowed, DO NOT induce vomiting. Rinse mouth and get emergency medical attention. Do not give anything by mouth unless instructed to do so by a poison center or health care provider.

Inhalation If inhaled, move victim to fresh air. Seek emergency medical attention if breathing is difficult; perform artificial respiration if breathing stops.

Note to health care provider Contains hydroquinone; prolonged exposure inhibits melanin synthesis.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media Water spray, foam, dry chemical, carbon dioxide

Unsuitable extinguishing media No information available

Protective equipment and precautions for firefighters Stay upwind of the fire. Full protective equipment including self-contained breathing apparatus should be used. Use water to cool closed containers. Contain water runoff if possible.

Specific hazards	Explosive vapor-air mixtures may form at temperatures above the flash point. Vapors may flow to distant ignition sources leading to flashback. Dense vapors may collect near the ground.
Hazardous combustion products	Carbon oxides, nitrogen oxides, ammonia

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Evacuate the area of all non-essential personnel. Do not touch spilled material without proper protective equipment. Ventilate the area and mitigate further release if it is safe to do so. Avoid contact with eyes.
Methods for clean-up	
Small spills	Contain spill and soak up with an inert absorbent material and place residues in a properly labeled container for disposal. Avoid discharge into sewer or surface water.
Large spills	Contain spill using trenches, diking, or absorption with an inert material (i.e. sand or earth). Reclaim spilled material into recovery or salvage drums or tank truck for proper disposal.

7. HANDLING AND STORAGE

Advice on safe handling	Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Wash hands thoroughly after handling.
Storage conditions	Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.
Suitable materials of construction	No information available
Unsuitable materials of construction	No information available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye/face protection	Chemical splash goggles
Skin protection	Chemical-resistant gloves and body-covering clothing
Respiratory protection	Observe published airborne exposure limits. NIOSH approved respirator should be used in accordance with OSHA respiratory protection requirements (29 CFR 1910.134).
Engineering controls	Adequate ventilation, eye-wash station, and emergency shower
General hygiene considerations	Do not eat, drink, or smoke while handling this product.

Chemical Name	OSHA PEL	ACGIH TLV
Diethylhydroxylamine (DEHA)	None established	None established
Hydroquinone	2 mg/m³	1 mg/m³
Non-hazardous substances	None established	None established

9. PHYSICAL AND CHEMICAL PROPERTIES

pH	8.0-9.0
Appearance	Clear tan to brown liquid
Odor	Amine
Odor Threshold	No information available
Melting/freezing point	No information available
Initial boiling point/boiling range	No information available
Flash point	~122°F (50°C)
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Upper/lower flammability or explosive limits	No information available
Vapor pressure	No information available
Vapor density	No information available
VOC content	No information available
Specific gravity	0.980-1.020
Solubility	No information available
Partition coefficient n-octanol/water	No information available
Auto-ignition temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available

10. STABILITY AND REACTIVITY

Chemical stability	Stable under normal conditions of storage and handling.
Hazardous polymerization	Polymerization will not occur.
Conditions to avoid	Light exposure, air exposure, extreme temperatures, incompatibilities
Incompatibilities	Strong oxidizers, acids
Hazardous decomposition products	Reaction with acids may yield highly toxic nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure Skin, eyes, ingestion

Acute toxicity

Diethylhydroxylamine (DEHA)

Parameter	Result
LD_{Lo}, Oral (rat)	1,600 mg/kg
LD_{Lo}, Dermal (rabbit)	2,000 mg/kg

Hydroquinone

Parameter	Result
LD_{50}, Oral (rat)	302 mg/kg
LD_{Lo}, Oral (human)	29 mg/kg
Percutaneous absorption rate (human)	0.522 µg/cm²/hr
Mammalian Chromosome Aberration Test	Mutagenic (with metabolic activation)
Micronucleus test, Oral (mouse)	Weakly genotoxic
Micronucleus test, Intraperitoneal (mouse)	Genotoxic

Acute symptoms and effects

Eye Eye irritation with or without pain, burning, itching, redness, discharge, and serious eye damage.

Skin Skin irritation with or without pain, burning, itching, redness, and swelling. Symptoms may be exacerbated by open wounds, excoriations, rashes, or other skin breaches.

Ingestion Ingestion of hydroquinone may lead to exogenous ochronosis; a condition characterized by dark blue skin discoloration. Ingestion may also cause acute gastrointestinal distress with or without nausea, vomiting, abdominal pain, and diarrhea.

Inhalation Upper respiratory irritation with or without cough, watering of the eyes, and postnasal drip.

Reproductive effects No information available

Teratogenicity No information available

Mutagenicity Hydroquinone was found to have mutagenic effects in animal laboratory studies. Relevance to human mutagenicity is unknown.

Embryotoxicity No information available

Sensitization to product No information available

Synergistic products No information available

Carcinogenicity Hydroquinone has been evaluated by the IARC and categorized as "not classifiable as to carcinogenicity in humans" (group 3).

Chronic Repeat exposure to hydroquinone induces skin discoloration and hypopigmentation.

12. ECOLOGICAL INFORMATION

Aquatic toxicity

Diethylhydroxylamine (DEHA)

Parameter	Result
48 hr EC_{50}, Daphnia magna	8.2 mg/L

Hydroquinone

Parameter	Result
96 hr LC_{50}, Fathead minnow	>0.4 mg/L
96 hr LC_{50}, Zebra danio	0.17 mg/L

Persistence No information available

Bioaccumulative potential Readily biodegradable

Mobility No information available

13. DISPOSAL CONSIDERATIONS

Disposal Dispose of in accordance with federal, state, and local regulations. Do not discharge into sewer or surface water.

RCRA status Discarded product, as sold, would not be considered a RCRA Hazardous Waste. Consult state and local regulations for restrictions on the disposal of hydroquinone.

14. TRANSPORT INFORMATION

US Department of Transportation (DOT) Not regulated for domestic shipments of containers less than 119 gallons.

UN Number NA1993

Proper shipping name Combustible liquid, n.o.s. (contains diethylhydroxylamine)

Primary hazard class/division 3

Secondary hazard None

Packing group III

Label

15. REGULATORY INFORMATION

OSHA Hazard Communication Status
Skin Irritation, Category 2
Serious Eye Damage, Category 1
Germ Cell Mutagenicity, Category 2
Specific Organ Toxicity, Chronic Exposure, Category 1
Aquatic Environment Toxicity: Acute, Category 3

EPA Registration Number Not applicable

TSCA The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CERCLA

EPA Hazardous Substances (40 CFR 302)

Chemical Name	Reportable Quantity (RQ)
Diethylhydroxylamine (DEHA)	None
Hydroquinone	100 lb
Non-hazardous substances	None
Product (Notify the EPA of spills exceeding this amount.)	1,000 lb

SARA Title III (Sections 302, 311, 312, and 313)

Section 302 Extremely Hazardous Substances (40 CFR 355)

Chemical Name	CAS#	RQ	TPQ
Hydroquinone	123-31-9	100 lb	500/10,000 lb

Section 311 and 312 Health and Physical Hazards

Immediate	Delayed	Fire	Pressure	Reactivity
Yes	No	Yes	No	No

Section 313 Toxic Chemicals (40 CFR 372)

Chemical Name	CAS Number	Percent by Weight
Hydroquinone	123-31-9	1–10

16. OTHER INFORMATION

HMIS Ratings Health—1; Flammability—2; Reactivity—0

NFPA Ratings Health—1; Flammability—2; Reactivity—0

HMIS/NFPA Rating Scale Minimal—0; Slight—1; Moderate—2; Serious—3; Severe—4

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