



Safety Data Sheet

1 – PRODUCT IDENTIFICATION

PRODUCT NAME: **5044**

PRODUCT NUMBER: 5044

OTHER MEANS OF IDENTIFICATION: Clear, colorless, basic liquid with a fishy, amine odor similar to ammonia.

RECOMMENDED USE: Steam line neutralizing amine. Ingredients approved for use in boiler water and steam lines in food processing facilities (21 CFR 173.310) except for use in systems in which steam contacts milk or milk products. Not for use in dairies where steam generated contacts milk or milk products. Not for use in drinking water.

RESTRICTIONS ON USE: Use only as directed

COMPANY:..... CHEMTRON SUPPLY CORPORATION
3500 HARRY S. TRUMAN BLVD
ST. CHARLES, MO 63301
(P) 636-940-5445 (MON-FRI 7:30-4:00)
www.chemtroncorporation.com

EMERGENCY PHONE:..... (800) 424-9300 (CHEMTREC)

REVISION DATE: June 11, 2015

2 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Corrosive. Clear, colorless, basic liquid with an amine (ammonia) odor. Product is corrosive to eyes, skin, and respiratory system. Skin absorption, inhalation, or ingestion may also result in toxic effects. May react with acids. Container head space gases may be flammable if exposed to a source of ignition.

CLASSIFICATION 29 CFR 1910.1200: Product is hazardous by OSHA criteria.

Corrosive to skin Category 1, Subcategory 1B

Serious eye damage Category 1

STOT-SE (single target organ toxicity - single exposure), digestive system (ingestion) Category 1

STOT-SE (single target organ toxicity - single exposure), respiratory system (inhalation) Category 2

Skin sensitizer Category 1B

Toxic to Reproduction..... Category 2

Flammable liquid Category 3





Safety Data Sheet

GHS SIGNAL WORD:.....**Danger**

GHS HAZARD STATEMENTS:

- H314: Causes severe skin burns and eye damage
- H312: Harmful in contact with skin.
- H317: May cause an allergic skin reaction.
- H332: Harmful if inhaled.
- H370: Causes damage to organs: causes damage to gastrointestinal system by ingestion.
- H333: May be harmful if inhaled: may cause damage to respiratory system by inhalation (aerosol or mist).
- H361: Suspected of damaging fertility or the unborn child based on oral exposures to rats reported in the literature.
- H226: Flammable liquid and vapor.

GHS PRECAUTIONARY STATEMENTS:

- P262: Do not get in eyes, on skin, or on clothing.
- P280: Wear protective gloves/protective clothing/eye protection/face protection; when conditions warrant use, add face shield, apron, and/or rubber boots.
- P260: Do not breathe dust/fume/gas/mist/vapors/spray.
- P264: Wash ... thoroughly after handling, wash gloves and contaminated surfaces.
- P272: Contaminated work clothing should not be allowed out of the workplace.
- P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
No smoking.
- P233: Keep container tightly closed.
- P234: Keep only in original packaging.
- P370+378: In case of fire: Use whatever extinguishing media is appropriate for extinction.
- P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing for 15 min. call a doctor.
- P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately, call a doctor.
- P332+313: If skin irritation occurs: Get medical advice/attention.
- P363: Wash contaminated clothing before reuse.
- P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P501: Dispose of contents/container in accordance with local state and federal regulations.

HAZARDS NOT OTHERWISE CLASSIFIED: Headspace gases in open units or residual gases in empty units may represent a fire hazard if exposed to a source of ignition. Product contains 5-20% cyclohexylamine. Cyclohexylamine has a flash point of 79 degrees F. The lower explosive limit (LEL) is 1.6% (V). Product contains 5-20% morpholine. Morpholine has a flash point of 98 degrees F. The lower explosive limit (LEL) is 1.4% (V).

POTENTIAL ENVIRONMENTAL EFFECTS: Significant contamination of small bodies of surface water or localized areas at the point of a spill may elevate pH levels above tolerable levels for aquatic organisms or expose organism to toxic effects of amine ingredients.



Safety Data Sheet

3 – COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENT	PERCENT	CAS NUMBER
Cyclohexylamine	15-25	108-91-8
Morpholine	15-25	110-91-8

The exact percent by weight of the ingredients in this formulation is proprietary.

4 – FIRST-AID MEASURES

- INHALATION:**If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a doctor.
- INGESTION:**If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately, call a poison control center or doctor.
- EYES:**If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for 15 minutes. Immediately, call a doctor.
- SKIN:**If on skin (or hair): Immediately, take off all contaminated clothing. Rinse skin with water. Use safety shower if available. Immediately, call a doctor.
- ACUTE SYMPTOMS:**Irritation or burns to eyes, skin, or mucous membranes. Injury may result in permanent damage to eyesight or permanent scars on skin. Symptoms of toxic effects following overexposure by skin contact ingestion, or inhalation include CNS abnormalities, drowsiness, dizziness, cough, pulmonary edema, cyanosis of the extremities, diarrhea, nausea, and vomiting.
- DELAYED EFFECTS:**Repeated dermal exposure to cyclohexylamine ingredient may result in sensitization.
- IMMEDIATE OR SPECIAL TREATMENT REQUIREMENTS:** After contact with product, immediately flush eyes and/or skin with water for 15 minutes. If safety shower or eye wash is plumbed to cold water, it may be necessary to move victim to a locker room shower or elsewhere to obtain a lukewarm water source before the 15 minute flush is complete. After the 15 minute flush, seek medical treatment.
Product contains organic amines that may permeate skin or mucous membranes. Systemic toxicity by dermal absorption, inhalation, and ingestion is possible. Monitor kidney and liver function and observe for symptoms listed above.



Safety Data Sheet

5 – FIRE-FIGHTING MEASURES

- FLASHPOINT:**Product is corrosive to eyes, skin, and respiratory system. Closed containers may rupture (due to buildup of pressure) when exposed to extreme heat. Product contains 5-20% cyclohexylamine. Cyclohexylamine has a flash point of 79 degrees F. The lower explosive limit (LEL) is 1.6% (V). Product contains 5-20% morpholine. Morpholine has a flash point of 98 degrees F. The lower explosive limit (LEL) is 1.4% (V). Headspace gases in open units or residual gases in empty units may represent a fire hazard if exposed to a source of ignition. If containers rupture or if units are open to the air, headspace gases may be released and accumulate at floor level. Gas may spread across a floor to a source of ignition and flash back.
- EXTINGUISHING MEDIA:**.....Use media appropriate for surrounding fire. Water content in product will reduce product's ability to sustain combustion.
- SPECIAL FIRE FIGHTING PROCEDURE:** Wear self-contained breathing apparatus and full turn-out gear. If possible, move containers away from fire. Cool fire exposed containers with water spray. If containers rupture or leak, product may evolve oxides of nitrogen and oxides of carbon.

6 – ACCIDENTAL RELEASE MEASURES

- SPILL PROCEDURES:**Eliminate sources of ignition. Contain and collect spills with commercial absorbents. Unused product or spill cleanup residues may be RCRA hazardous waste by the characteristic of corrosivity (D002) and/or ignitability (D001). Consult local authorities for appropriate waste disposal options in your location.
- PERSONAL PRECAUTIONS:**....Wear chemical splash goggles and protective industrial rubber gloves. When conditions warrant use, add face shield, apron, and/or rubber boots. If spill escapes to sanitary sewer, notify local public works authorities. If spill escapes to the environment, notify state and federal EPA and, if appropriate, the Coast Guard. The CERCLA RQ for cyclohexylamine is 10,000 lbs.

7 – HANDLING and STORAGE

- STORAGE:**.....Store product in closed container in well ventilated, secure area. Protect containers against physical damage. Protect label. Empty containers retain product residues and all label hazards are still present until container is thoroughly cleaned. Note ingredient flash points and lower explosive limits in stated in Section 2 and repeated in Section 5. Headspace gases in open units or residual gases in empty units may represent a fire hazard if exposed to a source of ignition. The recommended disposal for rinse waters from empty units is discharge to the treated system.
- HANDLING:**Open container slowly until pressure is relieved. Avoid spillage. Clean up small spills and drips promptly. Protect product from contamination. Avoid contact between this product and other chemicals, especially bases. Avoid contact with metals during handling. Do not transfer into metal containers. The recommended disposal for rinse waters from empty units is discharge to the treated system.



Safety Data Sheet

8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS:Exposure limits for the formulated product are not established. Exposure limits for hazardous ingredients are:

INGREDIENT	SOURCE & PARAMETER	EXPOSURE LIMIT
Cyclohexylamine	ACHIH TWA TLV	10 ppm
Cyclohexylamine	OSHA TWA PEL	none
Morpholine	ACGIH TWA TLV 1 /	20 ppm skin
Morpholine	OSHA TWA PEL	20 ppm skin
Morpholine	NIOSH STEL	30 ppm
Morpholine	NIOSH IDLH	1400 ppm

NOTE:1/The ACGIH and OSHA listing for morpholine includes a "skin" notation. This underscores the potentially significant contribution of dermal contact and absorption in overexposure incidents. Cyclohexylamine is also a skin permeator.

OSHA - Occupational Safety and Health Administration; ACGIH - American Conference of Governmental Industrial Hygienists; NIOSH - National Institute for Occupational Safety and Health; PEL – Permissible Exposure Limit; TWA - Time Weighted Average; TLV - Threshold Limit Value; REL - Recommended Exposure Limit; STEL - Short Term Exposure Limit; IDLH - Immediately Dangerous to Life or Health.

PROTECTIVE CLOTHING:Wear chemical splash goggles and protective industrial rubber gloves. When conditions warrant use, add face shield, apron, and/or rubber boots.

ADDITIONAL MEASURES:General exhaust ventilation is adequate. Avoid sources of ignition. Employ work practices and product transfer practices that avoid spills, drips, or contact with incompatible material.

9 – PHYSICAL / CHEMICAL PROPERTIES

APPEARANCE:clear, colorless, basic liquid

BOILING POINT:>212° F

VAPOR PRESSURE:2 hPa @ 22.4 °C

VAPOR DENSITY (AIR=1):4 (Air =1.0)

SPECIFIC GRAVITY:0.98-0.99

pH:11.5-13.0

SOLUBILITY IN WATER:Completely miscible in water

FLAMMABILITY:Flammable liquid

ODOR:fishy amine odor similar to ammonia

FLASH POINT:~130° F

EVAPORATION RATE:Similar to water

MELTING POINT/FREEZING POINT: <32° F



Safety Data Sheet

10 – STABILITY and REACTIVITY

REACTIVITY:.....Product may react with strong acids and strong oxidizers.
STABILITY:.....Stable at ambient temperatures and pressures.
HAZARDOUS POLYMERIZATION.: May react with strong acids and strong oxidizers. Polymerization will not occur.
INCOMPATIBILITY:.....Strong acids and strong oxidizers.
HAZARDOUS REACTIONS:Contact with strong acids and strong oxidizers. Avoid exposure to sources of ignition
HAZARDOUS DECOMP.:Oxides of nitrogen and oxides of carbon.

11 – TOXICOLOGICAL INFORMATION

LIKELY ROUTES OF EXPOSURE:Eye or skin contact.
TOXICOLOGICAL CHARACTERISTICS:.....Product is corrosive to eyes, skin, mucous membranes, and other tissues. Contact will irritate or burn eyes and skin. Permanent damage to eyesight is possible. Permanent scars are possible. Damage (tissue corrosion) to critical respiratory or gastrointestinal systems is possible following overexposure by inhalation or ingestion. Symptoms of toxic effects following overexposure by skin contact ingestion, or inhalation include liver and kidney damage, CNS abnormalities, drowsiness, dizziness, cough, pulmonary edema, cyanosis of the extremities, diarrhea, nausea, and vomiting.
LISTED CARCINOGEN:None of the product ingredients are listed as carcinogens by IARC, NTP, or OSHA.
DELAYED EFFECTS:Dermatitis, pulmonary edema; chemical pneumonitis.
IMMEDIATE EFFECTS:Irritation or burns to eyes, skin, upper respiratory system, or other tissues.
CHRONIC EFFECTS:Repeated dermal exposure to cyclohexylamine ingredient may result in sensitization. High dose exposure to cyclohexylamine has produced embryotoxicity, low birth count, post natal mortality, and decreased body weight in laboratory animals.

NUMERICAL MEASURES OF TOXICITY:..... No toxicology available on the formulated product. Toxicology data for product ingredients:

INGREDIENT	DATA
Cyclohexylamine	Oral rat LD50 303 mg/kg (male rat)
Cyclohexylamine	Dermal rabbit LD50 > 631 mg/kg <1000 mg/kg
Cyclohexylamine	Inhalation rat LC50 > 32.9 mg/l (>32.9 g/m ³) 4 hour
Morpholine	ACGIH TWA TLV 1/ 20 ppm skin
Morpholine	OSHA TWA PEL 20 ppm skin
Morpholine	NIOSH STEL 30 ppm
Morpholine	NIOSH IDLH 1400 ppm



Safety Data Sheet

12 – ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE AND DISTRIBUTION: Noecotoxicity data available for the formulated product. Significant contamination of small bodies of surface water or localized areas at the point of a spill may elevate pH levels above tolerable levels for aquatic organisms. Hazardous ingredients listed in Section 3 are toxic to aquatic organisms. Note ingredient LC50's.

COMPONENT	DATA
Cyclohexylamine	Rainbow trout 96 hour LC50 - 44mg/l
Cyclohexylamine	Daphnia magna 24 hour EC50 - 49 mg / l
Morpholine	Unspecified fish 96 hour LC50 - 179 mg / l
Morpholine	Daphnia species not specified 48 hour EC50 - 45 mg / l

PRODUCT	DATA
5044	LC50 48hr Ceriodaphnia Dubia 85.2 mg/L

PERSISTENCE AND DEGRADABILITY:Not known. Amine ingredients are biodegradable.

BIOACCUMULATIVE POTENTIAL:Not known. Bioaccumulation unlikely. Amine ingredients are biodegradable.

MOBILITY IN SOIL:.....Not known. Water solubility may enhance mobility in groundwater.

OTHER ADVERSE EFFECTS: ..Not known.

13 –DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:Product is consumed during recommended use. Flush container residues to the treated system. If product is not consumed in use, material is RCRA hazardous waste due to the corrosivity characteristic (D002) and the ignitable characteristic (D001). Dispose of contents or container in accordance with local, state, and federal regulations.

14 – TRANSPORTATION INFORMATION

PROPER SHIPPING NAME:.....Corrosive liquids, flammable, n.o.s (Morpholine, Cyclohexylamine)

HAZARD CLASS:8, subsidiary 3

UN/NA NUMBER:UN2920



PACKAGING GROUP :PG II

TRANSPORT IN BULK:Product container meets or exceeds DOT requirements. Material is a Packing Group II corrosive base. No extraordinary measures are required for shipment in bulk tanks including totes. See 49 CFR 172.101 & 49 CFR172.102.

SPECIAL PRECAUTIONS:If needed, see Column 7 entries in the DOT hazardous materials table and associated designations at 49 CFR172.102 for detailed descriptions of authorized containers, tank



Safety Data Sheet

material specifications, maximum degree of filling, minimum pressure tests, and other information.

15 - REGULATIONS

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29CFR 1910.1200

EPA SRA Title III Chemical Listings:

TSCA STATUS:All ingredients listed or exempt.

SECTION 302/303/313:Cyclohexylamine ingredient listed as an EPCRA Extremely hazardous substance, 40 CFR 355 Appendix A. Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SECTION 311/312:Acute, chronic, fire.

US EPA CERCLA:If product is designated waste, substance is hazardous per the corrosivity characteristic (D002) and the ignitable characteristic (D001).

16 – OTHER INFORMATION

NFPA HAZARD RANKING

HEALTH
3

FIRE
2

REACTIVITY
0

**SPECIAL
CORR**

HMIS HAZARD RANKING

HEALTH
3

FIRE
2

REACTIVITY
0

PPE
n & p or X (HMIS III, defined below)

n - splash goggles

p - gloves

X - consult supervisor