

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Tri-ACT® 1805

Other means of identification : Not applicable.

Recommended use : CORROSION INHIBITOR

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630)305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 09/05/2018

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Acute toxicity (Dermal) : Category 3

Skin corrosion : Category 1A

Serious eye damage : Category 1

Skin sensitization : Category 1

Reproductive toxicity : Category 2

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Flammable liquid and vapour.
Harmful if swallowed or if inhaled
Toxic in contact with skin.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause respiratory irritation.
Suspected of damaging fertility or the unborn child.

Precautionary Statements : **Prevention:**

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Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ ventilating/ lighting/ equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/ protective clothing/ eye protection/ face protection. Use personal protective equipment as required.

Response:

IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. Immediately call a POISON CENTER or doctor/ physician. If skin irritation or rash occurs: Get medical advice/ attention. Wash contaminated clothing before reuse. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:

Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

| Chemical Name | CAS-No. | Concentration: (%) |
|--------------------|-----------|--------------------|
| Monoethanolamine | 141-43-5 | 30 - 60 |
| Methoxypropylamine | 5332-73-0 | 30 - 60 |
| Cyclohexylamine | 108-91-8 | 10 - 30 |

Section: 4. FIRST AID MEASURES

- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
- If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention.

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- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : None known.
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, or expose containers to flame or other sources of ignition.
- Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx)
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

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- Advice on safe handling : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Do not ingest. Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Do not store near acids. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers. Have appropriate fire extinguishers available in and near the storage area. Connections must be grounded to avoid electrical charges. Amine and sulphite products should not be stored within close proximity or resulting vapors may form visible airborne particles.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: HDPE (high density polyethylene), Stainless Steel 304, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.
The following compatibility data is suggested based on similar product data and/or industry experience:
- Unsuitable material : not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

| Components | CAS-No. | Form of exposure | Permissible concentration | Basis |
|--------------------|-----------|------------------|--------------------------------|--------------------|
| Monoethanolamine | 141-43-5 | TWA | 3 ppm | ACGIH |
| | | STEL | 6 ppm | ACGIH |
| | | TWA | 3 ppm 8 mg/m ³ | NIOSH REL |
| | | STEL | 6 ppm 15 mg/m ³ | NIOSH REL |
| Methoxypropylamine | 5332-73-0 | TWA | 3 ppm 6 mg/m ³ | OSHA Z1 |
| | | STEL | 5 ppm | AIHA WEEL |
| Cyclohexylamine | 108-91-8 | TWA | 15 ppm | AIHA WEEL |
| | | TWA | 10 ppm 40 mg/m ³ | ACGIH NIOSH REL |

- Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

- Eye protection : Safety goggles
Face-shield
- Hand protection : Standard glove type.
Gloves should be discarded and replaced if there is any indication of

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degradation or chemical breakthrough.

- Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing
- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid
- Colour : Light yellow
- Odour : odourless
- Flash point : 45 °C, Method: ASTM D 93, Pensky-Martens closed cup
- pH : 13.0 - 14.0,(100 %), Method: ASTM E 70
- Odour Threshold : no data available
- Melting point/freezing point : Freezing Point: -51 °C, ASTM D-1177
- Initial boiling point and boiling range : no data available
- Evaporation rate : no data available
- Flammability (solid, gas) : no data available
- Upper explosion limit : no data available
- Lower explosion limit : no data available
- Vapour pressure : 5.6 hPa, (20.0 °C), ASTM D-5191,
- Relative vapour density : no data available
- Relative density : 0.95 - 0.98, (25 °C), ASTM D-1298
- Density : 0.95 - 0.98 g/cm³ , 7.9 - 8.2 lb/gal
- Water solubility : completely soluble
- Solubility in other solvents : no data available
- Partition coefficient: n-octanol/water : no data available
- Auto-ignition temperature : no data available
- Thermal decomposition : no data available
- Viscosity, dynamic : 9 mPa.s (25 °C), Method: ASTM D 2983
- Viscosity, kinematic : no data available
- Molecular weight : no data available
- VOC : 79.9 %, Calculation method

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Section: 10. STABILITY AND REACTIVITY

| | |
|------------------------------------|--|
| Chemical stability | : Stable under normal conditions. |
| Possibility of hazardous reactions | : No dangerous reaction known under conditions of normal use. |
| Conditions to avoid | : Extremes of temperature Heat, flames and sparks. |
| Incompatible materials | : Contact with strong acids (e.g. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) may generate heat, splattering or boiling and toxic vapors. Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors. Avoid contact with SO ₂ or acidic bisulfite products, which may react to form visible airborne amine salt particles. Certain amines in contact with nitrous acid, organic or inorganic nitrites or atmospheres with high nitrous oxide concentrations may produce N-nitrosamines, many of which are cancer-causing agents to laboratory animals. |
| Hazardous decomposition products | : Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NO _x) |

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

| | |
|------------------|--|
| Eyes | : Causes serious eye damage. |
| Skin | : Toxic in contact with skin. Causes severe skin burns. May cause allergic skin reaction. |
| Ingestion | : Harmful if swallowed. Causes digestive tract burns. |
| Inhalation | : May cause respiratory tract irritation. Harmful if inhaled. May cause nose, throat, and lung irritation. |
| Chronic Exposure | : Suspected of damaging fertility or the unborn child. |

Experience with human exposure

| | |
|--------------|--|
| Eye contact | : Redness, Pain, Corrosion |
| Skin contact | : Redness, Pain, Irritation, Corrosion, Allergic reactions |
| Ingestion | : Corrosion, Abdominal pain |
| Inhalation | : Respiratory irritation, Cough |

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Toxicity

Product

| | | |
|-----------------------------------|---|--|
| Acute oral toxicity | : | LD50 rat: 659 mg/kg Test substance: Product |
| Acute inhalation toxicity | : | Acute toxicity estimate: 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist |
| Acute dermal toxicity | : | rabbit: < 2,000 mg/kg Test substance: Product Acute toxicity estimate: 861.26 mg/kg |
| Skin corrosion/irritation | : | Result: 8.0 Method: Draize Test Test substance: Product |
| Serious eye damage/eye irritation | : | Result: 110.0 Method: Draize Test Test substance: Product |
| Respiratory or skin sensitization | : | no data available |
| Carcinogenicity | : | no data available |
| Reproductive effects | : | Prolonged exposure to cyclohexylamine in the diet has produced reproductive effects in rats. The relevance to humans is unknown. |
| Germ cell mutagenicity | : | A mutagenicity test battery on cyclohexylamine was inconclusive. In a short-term test, cyclohexylamine caused mutation in human white blood cells. A bacterial mutagenicity (Ames) bioassay was negative for methoxypropylamine. |
| Teratogenicity | : | no data available |
| STOT - single exposure | : | no data available |
| STOT - repeated exposure | : | no data available |
| Aspiration toxicity | : | no data available |

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : Harmful to aquatic life.

Product

| | | |
|------------------|---|--|
| Toxicity to fish | : | LC50 Fathead Minnow: 97 mg/l Exposure time: 96 hrs Test substance: Product (calculated) LC50 Rainbow Trout: 100 mg/l Exposure time: 96 hrs Test substance: Product (calculated) LC50 Inland Silverside: 732.15 mg/l Exposure time: 96 hrs |
|------------------|---|--|

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Test substance: Product (calculated)

NOEC Fathead Minnow: 75 mg/l
Exposure time: 96 hrs
Test substance: Product (calculated)

NOEC Rainbow Trout: 75 mg/l
Exposure time: 96 hrs
Test substance: Product (calculated)

Toxicity to daphnia and other aquatic invertebrates : LC50 Daphnia magna: 163 mg/l
Exposure time: 48 hrs
Test substance: Product (calculated)

LC50 Mysid Shrimp (Mysidopsis bahia): 308 mg/l
Exposure time: 96 hrs
Test substance: Product (calculated)

EC50 Daphnia magna: 125 - 200 mg/l
Exposure time: 48 hrs
Test substance: Product (calculated)

NOEC Daphnia magna: 125 mg/l
Exposure time: 48 hrs
Test substance: Product (calculated)

NOEC Mysid Shrimp (Mysidopsis bahia): 125 mg/l
Exposure time: 96 hrs
Test substance: Product (calculated)

Components

Toxicity to algae : Methoxypropylamine
EC50 : 31 mg/l
Exposure time: 72 h

Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Monoethanolamine
NOEC: 0.85 mg/l
Exposure time: 21 d

Persistence and degradability

The organic portion of this preparation is expected to be readily biodegradable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

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Air : <5%
Water : 30 - 50%
Soil : 50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste: : D001, D002

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name : AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S.
Technical name(s) : METHOXYPROPYLAMINE, CYCLOHEXYLAMINE
UN/ID No. : UN 2734
Transport hazard class(es) : 8, 3
Packing group : II

Air transport (IATA)

Proper shipping name : AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S.
Technical name(s) : METHOXYPROPYLAMINE, CYCLOHEXYLAMINE
UN/ID No. : UN 2734
Transport hazard class(es) : 8, 3
Packing group : II

Sea transport (IMDG/IMO)

Proper shipping name : AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S.

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Technical name(s) : METHOXYPROPYLAMINE, CYCLOHEXYLAMINE
UN/ID No. : UN 2734
Transport hazard class(es) : 8, 3
Packing group : II

Section: 15. REGULATORY INFORMATION

TSCA list : Not relevant

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This product does not contain a RQ substance, or this product contains a substance with a RQ, however the calculated RQ exceeds the reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

| Components | CAS-No. | Component RQ (lbs) | Calculated product RQ (lbs) |
|-----------------|----------|--------------------|-----------------------------|
| Cyclohexylamine | 108-91-8 | 10000 | 50251 |

SARA 311/312 Hazards : Acute Health Hazard
Fire Hazard
Chronic Health Hazard

SARA 302 : The following components are subject to reporting levels established by SARA Title III, Section 302:
Cyclohexylamine 108-91-8

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.

California Prop. 65

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

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

Australia. Industrial Chemical (Notification and Assessment) Act

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

Japan. ENCS - Existing and New Chemical Substances Inventory

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

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Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

China Inventory of Existing Chemical Substances

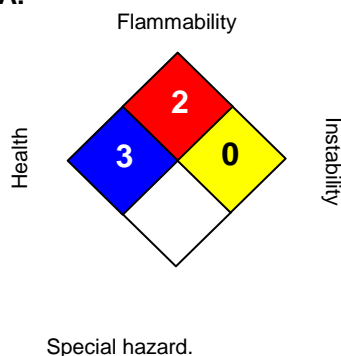
All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

Taiwan Chemical Substance Inventory

All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (ECSI).

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

| | |
|------------------------|-----------|
| HEALTH | 3* |
| FLAMMABILITY | 2 |
| PHYSICAL HAZARD | 0 |

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 09/05/2018
Version Number : 1.2
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.