QUIMI KAO, S.A.

Enriching lives,
in harmony with nature.

Material Safety Data Sheet

Conforms to the requirements of the United States Hazard Communication regulation 29 CFR 1910.1200

DIAMIN T

1. Product and company identification

Product name	:	DIAMIN T
Chemical name	:	N-Alkyltrimethylenediamine
Material uses	:	Industrial applications: Emulsifying agent. Other non-specified industry: Manufacture of organic products. Dispersing agent. Emulsifying agent.
Code	:	190442
Validation date	:	15/07/2015.
Product type	:	Solid.
Supplier	:	QUIMI KAO, S.A. DE C.V. Km. 22.5 Carretera de Guadalajara El Salto CP. 45680 El Salto - Jalisco (MEXICO). Tel. +52 33-3284-1000 FAX. +52 33-3688-0861
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In case of emergency

For ALL TRANSPORT ACCIDENTS related with USA, call CHEMTREC at 800-424-9300 or 703-527-3887 for international collect calls.

For ALL TRANSPORT ACCIDENTS related with Mexico, call SETIQ at 01-800-00-214-00 or (55) 5575-0838 or (55) 5575-0842

Other countries Emergency telephone number (24h) : **+34 93 739 9445** Multi-language

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : ACUTE TOXICITY (oral) - Category 4
SKIN CORROSION/IRRITATION - Category 1B
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (oral) - Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Harmful if swallowed.
Causes severe skin burns and eye damage.
Causes damage to organs through prolonged or repeated exposure if swallowed.

Precautionary statements

Section 2. Hazards identification

Prevention : Wear protective gloves: > 8 hours (breakthrough time): butyl rubber , nitrile rubber. Wear eye or face protection: Recommended: splash goggles. Wear protective clothing: Recommended: Lab coat.,overall. Do not breathe dust. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response : Get medical attention if you feel unwell. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Flush contaminated skin with of 3% acetic acid or agent containing Diphoterin (e.g. Previn ®). Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. IF IN EYES: Immediately flush with agent containing Diphoterin (e.g. Previn ®), occasionally lifting the upper and lower eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

Storage : Store locked up.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : N-Alkyltrimethylenediamine

Other means of identification : N-(Tallow alkyl)-1,3-propanediamine

CAS number/other identifiers

CAS number : 61791-55-7

Product code : 190442

Ingredient name	%	CAS number
N-Alkyltrimethylenediamine	25 - 100	61791-55-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush with agent containing Diphoterin (e.g. Previn ®), occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. The exposed person may need to be kept under medical surveillance for 48 hours.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Section 4. First-aid measures

Skin contact : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with of 3% acetic acid or agent containing Diphoterin (e.g. Previn ®). Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse. The exposed person may need to be kept under medical surveillance for 48 hours.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : Causes severe burns.

Ingestion : Harmful if swallowed. May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

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

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Remark : Elevated temperature
heat

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 7. Handling and storage

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead. Recommended: splash goggles

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. > 8 hours (breakthrough time): butyl rubber , nitrile rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Lab coat.,overall

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended:

Respiratory protection : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 8. Exposure controls/personal protection

Personal protective equipment (Pictograms) :

Section 9. Physical and chemical properties

Appearance

Physical state : Solid. [Paste.]

Colour : White to yellowish.

Odour : Amine-like.

Odour threshold : Not available.

pH : 10 to 11 (Conc. (% w/w): 5) (20 ºC)

Melting point : 37 to 43 ºC

Initial boiling point and boiling range : >300 ºC

Flash point : Closed cup: >170°C [P.M.C.C.]

Evaporation rate (butyl acetate = 1) : Not available.

Flammability (solid, gas) : Not applicable.

Upper/lower flammability or explosive limits : Not available.

0,0000015 kPa [room temperature]

Vapour density :

Density : 0.823 g/cm3 (55 ºC)

Solubility(ies) : Insoluble in the following materials: cold water.

Partition coefficient: n-octanol/water : 1,46

Decomposition temperature : >250°C

Viscosity (Dynamic) : 100 to 300 cP (65 ºC)

Explosive properties : Not available.

Oxidising properties : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Elevated temperature
heat

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials and reducing materials.
strong acids
Copper.
Copper alloys

Section 10. Stability and reactivity

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Decomposition temperature : >250 ºC

Other information : Elevated temperature
heat

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
N-Alkyltrimethylenediamine	LD50 Oral	Rat	500 mg/kg	-

Irritation/Corrosion

Not available.

Conclusion/Summary

Skin : Causes burns.

Eyes : Causes serious eye damage.

Respiratory : Vapour CAUSES RESPIRATORY TRACT IRRITATION.

Sensitisation

Not available.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
N-Alkyltrimethylenediamine	-	Experiment: In vitro Subject: Bacteria	Negative

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
N-Alkyltrimethylenediamine	Category 1	Oral	Not determined

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Section 11. Toxicological information

Inhalation : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : Causes severe burns.

Ingestion : Harmful if swallowed. May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
N-Alkyltrimethylenediamine	Sub-acute NOAEL Oral	Rat	0,4 mg/kg	28 days; 7 days per week

General : Causes damage to organs through prolonged or repeated exposure if swallowed.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
N-Alkyltrimethylenediamine	Acute EC50 0,01 to 0,1 mg/l Acute EC50 0,01 to 0,1 mg/l Acute LC50 0,01 to 0,1 mg/l Chronic NOEC 0,01 to 0,1 mg/l Chronic NOEC 0,001 to 0,01 mg/l	Algae Daphnia Fish Algae Daphnia	72 hours 48 hours 96 hours 72 hours 48 hours

Conclusion/Summary : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Persistence and degradability

Conclusion/Summary :

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
N-Alkyltrimethylenediamine	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
N-Alkyltrimethylenediamine	1,46	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	ADR/RID	IMDG	IATA
UN number	UN3259	UN3259	UN3259	UN3259
UN proper shipping name	POLYAMINES, SOLID, CORROSIVE, N.O.S. (N-Alkyltrimethylenediamine)	POLYAMINES, SOLID, CORROSIVE, N.O.S. (N-Alkyltrimethylenediamine)	POLYAMINES, SOLID, CORROSIVE, N.O.S. (N-Alkyltrimethylenediamine). Marine pollutant (N-Alkyltrimethylenediamine)	Polyamines, solid, corrosive, n.o.s. (N-Alkyltrimethylenediamine)

Section 14. Transport information

Transport hazard class(es)	8 	8 	8 	8 
Packing group	III	III	III	III
Environmental hazards	Yes.	Yes.	Yes.	Yes.
Additional information	The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes.	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Hazard identification number** 80 **Limited quantity** 5 kg **Special provisions** 274 **Tunnel code** (E)	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules (EmS)** F-A, S-B **Special provisions** 223, 274 **IMDG Code Segregation group** 18 - Alkalis **Remarks** See flow chart supplement IMDG Code	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Passenger and Cargo Aircraft** Quantity limitation: 25 kg Packaging instructions: 860 **Cargo Aircraft Only** Quantity limitation: 100 kg Packaging instructions: 864 **Limited Quantities - Passenger Aircraft** Quantity limitation: 5 kg Packaging instructions: Y845 **Special provisions** A3, A803

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

Section 15. Regulatory information

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
N-Alkyltrimethylenediamine	25 - 100	No.	No.	No.	Yes.	Yes.

State regulations

Massachusetts : This material is not listed.

New York : This material is not listed.

New Jersey : This material is not listed.

Pennsylvania : This material is not listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

Registration status :

This refers to country inventory status or Kao notifications to specific country inventories. Some countries may have additional importation requirements.

Australia - (AICS)
China - (IECSC)
Canada (DSL)
European Union - (EINECS or ELINCS)
Japan - (ENCS)
Republic of Korea - (KECI)
Philippines - (PICCS)
United States - (TSCA)
New Zealand - (NZIoC)
Taiwan - (CSNN)

Section 16. Other information

History

Date of printing : 15/07/2015.

Date of issue/Date of revision : 15/07/2015.

Date of previous issue : No previous validation.

Version : 1

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Notice to reader

The information in this SDS is based on the present state of our knowledge and on current laws. The product is not to be used for purposes other than those specified under section 1 without first obtaining written handling instructions. It is always the responsibility of the user to take all necessary steps to fulfil the demands set out in the local rules and legislation. The information in this SDS is meant to be a description of the safety requirements for our product. It is not to be considered a guarantee of the product's properties.

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