



SAFETY DATA SHEET

Trichloroethylene

This SDS is valid for all grades that start with catalog number
348

1. IDENTIFICATION OF SUBSTANCE / MIXTURE AND OF SUPPLIER

Product Identifier: High Purity Chemicals
Synonyms: 1,1,2-Trichloroethylene Trichloroethene Ethylene trichloride Acetylene trichloride, TCE
Other means of identification: CAS No. 79-01-6
EINECS No. 201-167-4
Recommended use of the chemical and restrictions on use:

Supplier Details:

Greenfield Global USA, Inc.
58 Vale Road, Brookfield,
CT 06804, USA.
Tel: 203.740.3471
Fax: 203.740.3481
CCN17213

Emergency Contact: CHEMTREC: 1.800.424.9300 (USA) / +1.703.527.3887 (International)

2. HAZARDS IDENTIFICATION

OSHA Hazards:

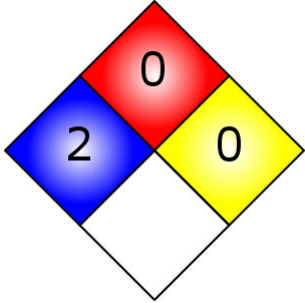
Harmful by ingestion, Irritant

Target Organs:

Central nervous system, Heart, Liver, Lungs



Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)
NFPA **+1.703.527.3887 (INT)**



GHS label elements, including precautionary statements



Signal Word:

DANGER!

Hazard statement(s)

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P280	Wear protective gloves and eye and face protection.
P264	Wash hands thoroughly after handling.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P281	Use personal protective equipment as required.
P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention.



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P321	Specific treatment (see supplemental first aid instructions on label)
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fumes/gas/mist/vapors.
P501	Dispose of contents and container to an approved waste disposal plant.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

GHS Classification(s)

- Skin irritation (Category 2)
- Carcinogenicity (Category 1B)
- Specific target organ toxicity - single exposure (Category 3)
- Chronic aquatic toxicity (Category 3)
- Eye irritation (Category 2)
- Germ cell mutagenicity (Category 2)

Other hazards which do not result in classification:

Potential Health Effects:

Organ	Description
Eyes	Causes eye irritation.
Ingestion	Harmful if swallowed.
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	Harmful if absorbed through skin. Causes skin irritation.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical identity:	Trichloroethylene
Common name / Synonym:	TCE; 1,1,2-Trichloroethylene Trichloroethene Ethylene trichloride Acetylene trichloride
CAS number:	79-01-6
EINECS number:	201-167-4
ICSC number:	0081
RTECS #:	KX4550000
UN #:	1710
EC #:	602-027-00-9

% Weight	Material	CAS
100	Trichloroethylene	79-01-6



4. FIRST AID MEASURES

Skin

Wash skin with soap and copious amounts of water.

Inhalation

Remove person to fresh air. If signs/symptoms continue, get medical attention. Give oxygen or artificial respiration as needed.

Eyes

Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.

Ingestion

DO NOT induce vomiting. If vomiting does occur, have victim lean forward to prevent aspiration. Rinse mouth with water. Seek medical attention. Never give anything by mouth to an unconscious individual.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

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

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

Carbon oxides, hydrogen chloride gas are expected to be the primary hazardous combustion products.

Special protective equipment and precautions for firefighters:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Keep unopened containers cool by spraying with water.

Classification

Not flammable or combustible.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Avoid dust formation. Do not inhale vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions:

Stop leak. Contain spill if possible and safe to do so. Prevent product from entering drains.

Methods and materials for containment and cleaning up:



Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)

Absorb with an inert dry material and place in an appropriate waste disposal container. Keep container closed when finished. **ep. 703.527.9887 (INT)**

7. HANDLING AND STORAGE

Precautions for safe handling:

Do not get on skin or in eyes. Avoid formation of dust and aerosols. Provide proper exhaust ventilation system in areas where dust forms.

Conditions for safe storage, including any incompatibilities:

Keep container closed in a dry, well ventilated location. Handle under inert gas. Light sensitive.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters, e.g., occupational exposure limit values or biological limit values:

Occupational Exposure Limits

Component	Source	Type	Value	Note
Trichloroethylene	US (ACGIH)	TWA	10 ppm	ACGIH Hreshold Exposure Limit Values
Trichloroethylene	US (OSHA)	TWA	100 ppm	OSHA Occupational Exposure Limits (Table Z2)
Trichloroethylene	US (OSHA)	TWA	50 ppm / 270 mg/m3	29 CFR 1910.1000 Table Z-1 Limits for Air Contaminants.

Individual protection measures, such as personal protective equipment:

Respiratory protection:

Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection:

Handle with 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 protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Use equipment approved by appropriate government standards, such as NIOSH (US) or EN166 (EU) Maintain eye wash fountain and quick-drench facilities in work area.

Skin and body protection:

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures:



Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)

Handle in accordance with good industrial hygiene and safety practice. Wash hands before **1.700.521.3887 (INT)** of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Clear colorless liquid
Freezing point	-84.8 °C (-120.6 °F)
Initial boiling point and boiling range	86.7 °C (188.1 °F)
Upper / Lower flammability or explosive limits	8 %(V) / 10.5 %(V)
Vapor pressure	81.3 hPa (61.0 mmHg) at 20.0 °C (68.0 °F)
Relative Density	1.463 g/mL at 25 °C (77 °F)
Solubility(ies)	Slightly soluble in water.
Partition coefficient n-octanol/water(ies)	log Pow: 2.29
Auto-ignition temperature	410 °C (770 °F)
Formula (Trichloroethylene)	C ₂ HCL ₃
Molecular Weight (Trichloroethylene)	131.39 g/mol

10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	No data available
Conditions to avoid (e.g., static discharge, shock or vibration)	OPEN FLAME,IGNITION SOURCES,HOT SURFACES.
Incompatible materials	Oxidizing agents, Strong bases, Magnesium
Hazardous decomposition products	Hazardous decomposition products formed under fire conditions. - Carbon oxides, hydrogen chloride gas

11. TOXICOLOGICAL INFORMATION

- Trichloroethylene 79-01-6

Product Summary:

No data available for the teratogenic, mutagenic, or reproductive toxicity effects of this product.

Acute Toxicity:

LC50 (Inhalation)	Mouse	8450 ppm	4 hours
LD50 (Dermal)	Rabbit	> 20,000 mg/kg	
LD50 (Oral)	Rat	4920 mg/kg	

Irritation:

Eyes

Rabbit - eye irritation - 24 hours



Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)

Skin

+1.703.527.3887 (INT)

Rabbit - Severe skin irritation - 24 hours

Carcinogenicity

IARC: Group 2A: Probably carcinogenic to humans

ACGIH: No data is available.

NTP: Reasonably anticipated to be a human carcinogen

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.

Other Hazards

Organ	Description
Eyes	Causes eye irritation.
Ingestion	Harmful if swallowed.
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	Harmful if absorbed through skin. Causes skin irritation.

12. ECOLOGICAL INFORMATION

- Trichloroethylene 79-01-6

Ecotoxicity (aquatic and terrestrial, where available):

Acute algae toxicity (Trichloroethylene)

IC50 / 96h / green algae - 175.00 mg/l

Acute daphnia toxicity (Trichloroethylene)

EC50 / 48h / Water flea - 18.00 mg/l

Acute Fish Toxicity (Trichloroethylene)

LC50 / 96h / Fathead minnow - 41mg/l

Bioaccumulative potential:

Does not bioaccumulate.

13. DISPOSAL CONSIDERATIONS

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:



Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)
Offer surplus and non-recyclable solutions to a licensed disposal company. **+1.703.527.3887 (INT)**

14. TRANSPORT INFORMATION

Description of waste residues and information on their safe handling and methods of disposal:

UN number	1710
UN proper shipping name	Trichloroethylene
Transport hazard class(es)	6.1
Packing group (if applicable)	III

Reportable Quantity

100

IMDG

UN-Number: 1710 Class: 6.1 Packing Group: III

EMS-No: F-A, S-A

Proper shipping name: TRICHLOROETHYLENE

Marine pollutant: No

IATA

UN-Number: 1710 Class: 6.1 Packing Group: III

Proper shipping name: Trichloroethylene

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question:

OSHA Hazards

Harmful by ingestion, Irritant

All ingredients are on the following inventories or are exempted from listing

Country	Notification
Australia	AICS
Canada	DSL
China	IECS
European Union	EINECS
Japan	ENCS/ISHL
Korea	ECL
New Zealand	NZIoC
Philippines	PICCS
United States of America	TSCA

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



Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)

The following components are subject to reporting levels established by SARA Title III, Section 302, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

SARA 311/312 Hazards

Acute Health Hazard
Chronic Health Hazard

CERCLA

Ammonium chloride CAS-No. 506-87-6, RQ: 5,000 lbs.

Massachusetts Right To Know Components

Trichloroethylene CAS-No. 79-01-6 Revision Date 2007-07-01

Pennsylvania Right To Know Components

Trichloroethylene CAS-No. 79-01-6 Revision Date 2007-07-01

New Jersey Right To Know Components

Trichloroethylene CAS-No. 79-01-6 Revision Date 2007-07-01

California Prop 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. Trichloroethylene CAS-No. 79-01-6 Revision Date 2008-10-10

**16. OTHER INFORMATION:
INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS**

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