

MATERIAL SAFETY DATA SHEET

TITAN PART II (Hydrogen Peroxide Less Than 8%)

MSDS Ref. No.: 1

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1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: TITAN Part II (Hydrogen Peroxide Less Than 8%)

GENERAL USE: Standard grade is used for industrial bleaching, processing, pollution abatement and general oxidation reactions.

MANUFACTURER

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2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

- Clear, colourless, odourless liquid
- Weak oxidizing agent that is stable under normal conditions.
- Sensitive to contamination.
- Decomposes yielding oxygen that supports combustion of organic matters and can cause overpressure if confined.

POTENTIAL HEALTH EFFECTS: Minimally irritating to the eyes and mildly irritating to skin.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Wt. %	EC No.	EC Class
Hydrogen Peroxide	7722-84-1	<8	231-765-0	Xi, R36
Water	7732-18-5	>92	231-791-2	Not classified

4. FIRST AID MEASURES

EYES: Flush with water for at least 15 minutes. If irritation occurs and persists, obtain medical attention.

SKIN: Wash with plenty of soap and water. Get medical attention if irritation occurs and persists.

INGESTION: Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.

INHALATION: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, obtain medical attention.

NOTES TO MEDICAL DOCTOR: Direct contact may be minimally irritating. Treatment is by dilution and is symptomatic and supportive.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Flood with water.

FIRE / EXPLOSION HAZARDS: Product is non-combustible. On decomposition releases oxygen which may intensify fire.

FIRE FIGHTING PROCEDURES: Any tank or container surrounded by fire should be flooded with water for cooling. Wear full protective clothing and self-contained breathing apparatus.

FLAMMABLE LIMITS: Non-combustible

SENSITIVITY TO IMPACT: No data available

SENSITIVITY TO STATIC DISCHARGE: No data available

6. ACCIDENTAL RELEASE MEASURES

RELEASE NOTES: Dilute with a large volume of water and hold in a pond or diked area until hydrogen peroxide decomposes. Dispose according to methods outlined for waste disposal.

Combustible materials exposed to hydrogen peroxide should be immediately submerged in or rinsed with large amounts of water to ensure that all hydrogen peroxide is removed. Residual hydrogen peroxide that is allowed to dry (upon evaporation hydrogen peroxide can concentrate) on organic materials such as paper, fabrics, cotton, leather, wood or other combustibles can cause the material to ignite and result in a fire.

7. HANDLING AND STORAGE

HANDLING: Wear chemical splash-type monogoggles and full-face shield, impervious clothing, such as rubber, PVC, etc., and rubber or neoprene gloves and shoes. Avoid cotton, wool and leather. Avoid excessive heat and contamination. Contamination may cause decomposition and generation of oxygen gas which could result in high pressures and possible container rupture. Hydrogen peroxide should be stored only in vented containers and transferred only in a prescribed manner (see FMC Technical Bulletins). Never return unused hydrogen peroxide to original container, empty drums should be triple rinsed with water before discarding. Utensils used for handling hydrogen peroxide should only be made of glass, stainless steel, aluminum or plastic.

STORAGE: Store drums in cool areas out of direct sunlight and away from combustibles. For bulk storage refer to FMC Technical Bulletins.

COMMENTS: VENTILATION: Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into the work environment.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name	ACGIH	OSHA	Supplier
Hydrogen Peroxide	1 ppm (TWA)	1 ppm (PEL)	

ENGINEERING CONTROLS: Ventilation should be provided to minimise the release of hydrogen peroxide vapors and mists into the work environment. Spills should be minimised or confined immediately to prevent release into the work area. Remove contaminated clothing immediately and wash before reuse.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Use chemical splash-type monogoggles if splashing is expected during handling of product.

RESPIRATORY: If concentrations in excess of 10 ppm are expected, use NIOSH/DHHS approved self-contained breathing apparatus (SCBA), or other approved atmospheric-supplied respirator (ASR) equipment (e.g., a full-face airline respirator (ALR)). DO NOT use any form of air-purifying respirator (APR) or filtering facepiece (AKA dust mask), especially those containing oxidisable sorbants such as activated carbon.

PROTECTIVE CLOTHING: Rubber or neoprene footwear (avoid leather). Impervious clothing materials such as rubber, neoprene, nitrile or polyvinyl chloride (avoid cotton, wool and leather). Completely submerge hydrogen peroxide contaminated clothing or other materials in water prior to drying. Residual hydrogen peroxide, if allowed to dry on materials such as paper, fabrics, cotton, leather, wood or other combustibles can cause the material to ignite and result in a fire.

GLOVES: Wear liquid proof rubber or neoprene gloves. Thoroughly rinse the outside of gloves with water prior to removal. Inspect regularly for leaks.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR:	Odourless
APPEARANCE:	Clear, colourless liquid
AUTOIGNITION TEMPERATURE:	Non-combustible
BOILING POINT:	101°C (214°F)
COEFFICIENT OF OIL / WATER:	Not available
DENSITY / WEIGHT PER VOLUME:	Not available
EVAPORATION RATE:	Above 1 (Butyl Acetate = 1)
FLASH POINT:	Non-combustible
FREEZING POINT:	-3 °C (27 °F)
ODOUR THRESHOLD:	Not available
OXIDISING PROPERTIES:	Not applicable
PERCENT VOLATILE:	100%
pH:	(as is) approx. 2.5 to 3.5
SOLUBILITY IN WATER:	(in H ₂ O % by wt) 100%
SPECIFIC GRAVITY:	(H ₂ O = 1): 1.01 @ 20°C/4°C
VAPOR DENSITY:	(Air = 1): Not available
VAPOR PRESSURE:	31 mm Hg @ 30 °C (86 °F)

COMMENTS:

pH (1% solution): 5.0 - 6.0

NOTE: Data above are for <8% Hydrogen Peroxide.

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID:	Excessive heat or contamination could cause product to become unstable.
STABILITY:	Stable (contamination could cause decomposition)
POLYMERISATION:	Will not occur
INCOMPATIBLE MATERIALS:	Reducing agents, iron and other heavy metals, galvanised iron, copper alloys and caustic.
HAZARDOUS DECOMPOSITION PRODUCTS:	Oxygen which supports combustion.
COMMENTS:	Materials To Avoid: Dirt, organics and combustibles.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: 5% hydrogen peroxide: Minimally irritating (rabbit) [FMC Study Number: I86-0949]

SKIN EFFECTS: 10% hydrogen peroxide: Mildly irritating after 4-hour exposure (rabbit) [FMC Study Number: I89-1078]

DERMAL LD₅₀: 35% hydrogen peroxide: > 2,000 mg/kg (rabbit) [FMC Study Number: I83-746]

ORAL LD₅₀: 10% hydrogen peroxide: > 5,000 mg/kg (rat) [FMC Study Number: I89-1077]

INHALATION LC₅₀: 50% hydrogen peroxide: > 0.17 mg/l (rat) [FMC Study Number: I89-1080]

ACUTE EFFECTS FROM OVEREXPOSURE: Minimally irritating to the eyes, skin, nose, throat, and lungs.

CHRONIC EFFECTS FROM OVEREXPOSURE: The International Agency for Research on Cancer (IARC) has concluded that there is inadequate evidence for carcinogenicity of hydrogen peroxide in humans, but limited evidence in experimental animals (Group 3 - not classifiable as to its carcinogenicity to humans). The American Conference of Governmental Industrial Hygienists (ACGIH) has concluded that hydrogen peroxide is a 'Confirmed Animal Carcinogen with Unknown Relevance to Humans' (A3).

CARCINOGENICITY:

Chemical Name	IARC	NTP	OSHA	Other
Hydrogen Peroxide	Listed	Not listed	Not listed	(ACGIH) Listed (A3, Animal Carcinogen)

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Channel catfish 96-hour LC_{50} = 37.4 mg/L
Fathead minnow 96-hour LC_{50} = 16.4 mg/L
Daphnia magna 24-hour EC_{50} = 7.7 mg/L
Daphnia pulex 48-hour LC_{50} = 2.4 mg/L
Freshwater snail 96-hour LC_{50} = 17.7 mg/L
For more information refer to ECETOC "Joint Assessment of Commodity Chemicals No. 22, Hydrogen Peroxide." ISSN-0773-6339, January 1993

CHEMICAL FATE INFORMATION: Hydrogen peroxide in the aquatic environment is subject to various reduction or oxidation processes and decomposes into water and oxygen. Degrades in the atmosphere within the light spectrum with hydroxyl radicals in the gas phase and subsequent photolysis.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: An acceptable method of disposal is to dilute with a large amount of water and allow the hydrogen peroxide to decompose followed by discharge into a suitable treatment system in accordance with all regulatory agencies. The appropriate regulatory agencies should be contacted prior to disposal.

14. TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORT (DFT)

PROPER SHIPPING NAME:	Not regulated
PRIMARY HAZARD CLASS / DIVISION:	Not applicable
UN/NA NUMBER:	None
LABEL(S):	Not applicable
PLACARD(S):	Not applicable
ADDITIONAL INFORMATION:	DOT Marking: Not applicable Hazardous Substance/RQ: Not applicable 49 STCC Number: Not applicable

INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)

ADDITIONAL INFORMATION: Not regulated

**INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) /
INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)**

ADDITIONAL INFORMATION: Not regulated

OTHER INFORMATION:

Protect from physical damage. Keep drums in upright position.

15. REGULATORY INFORMATION

Not listed

Not applicable

Not listed

Not listed

HAZARD, RISK AND SAFETY PHRASE DESCRIPTIONS:

Hydrogen Peroxide, :

EC Symbols:	Xi	(Irritant)
EC Risk Phrases:	R36	(Irritating to eyes.)
EC Safety Phrases:	S1/2	(Keep locked up and out of reach of children.)
	S3	(Keep in a cool place.)
	S17	(Keep away from combustible material.)
	S26	(In case of contact with eyes, rinse immediately with plenty of water and seek medical advice)
	S28	(After contact with skin, wash immediately with plenty of water and soap.)
	S36/37/39	(Wear suitable protective clothing, gloves and eye/face protection.)
	S45	(In case of accident or if you feel unwell, seek medical advice immediately - show the label where possible.)

16. OTHER INFORMATION
