



Canada Colors and Chemicals Limited

CANADA COLORS & CHEMICALS LTD
152 KENNEDY ROAD SOUTH
BRAMPTON, ONTARIO,
CANADA L6W 3G4
(905) 459-1232;

PRODUCT: HYDROGEN PEROXIDE 29% (WEST)

CODE: 500403

Section 01: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER/SUPPLIER..... CANADA COLORS & CHEMICALS LTD.
152 KENNEDY ROAD SOUTH
BRAMPTON, ONTARIO
CANADA
L6W 3G4
PREPARED BY..... Regulatory Affairs
PREPARATION DATE..... Jun10/11
PRODUCT NAME..... HYDROGEN PEROXIDE 29% (WEST)
PRODUCT CODE..... 500403
CHEMICAL FORMULA..... H₂O₂.
MOLECULAR WEIGHT..... 34.02.
CHEMICAL FAMILY..... INORGANIC.
MATERIAL USE..... REFER TO TECHNICAL LITERATURE.
EMERGENCY PHONE NO..... (416)-444-2112.

Section 02: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	%	Exposure Limit	C.A.S.#	LD/50, Route, Species	LC/50 Route, Species
HYDROGEN PEROXIDE	29	SEE SECTION 11	7722-84-1	SEE SECTION 11	SEE SECTION 11

Section 03: HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

SKIN CONTACT..... MAY CAUSE SEVERE IRRITATION OR BURNS OF THE SKIN. SKIN EXPOSURE CAN RESULT IN BLEACHING OF THE SKIN AND HAIR.

EYE CONTACT..... MAY CAUSE SEVERE IRRITATION OR BURNS OF THE EYES. SPLASHES IN THE EYE CAN CAUSE SEVERE EYE DAMAGE WITH ULCERATION OF THE CORNEA AND MAY CAUSE IRREVERSIBLE EYE DAMAGE, INCLUDING BLINDNESS.

INHALATION..... INHALATION OF CONCENTRATED VAPOURS CAN CAUSE IRRITATION OF THE NOSE AND THROAT WITH CHEST DISCOMFORT, COUGH, DIFFICULTY IN BREATHING AND SHORTNESS OF BREATH.

INGESTION..... INGESTION CAN CAUSE IRRITATION OF THE UPPER GASTROINTESTINAL TRACT WITH PAIN AND DISTENTION OF THE STOMACH AND ESOPHAGUS DUE TO LIBERATION OF OXYGEN.

HUMAN HEALTH EFFECTS:..... SKIN CONTACT WITH AQUEOUS SOLUTIONS OF LESS THAN 50% MAY CAUSE IRRITATION WITH DISCOMFORT OR RASH. HIGHER OR PROLONGED EXPOSURE MAY RESULT IN SKIN BURNS OR ULCERATION. EVIDENCE SUGGESTS THAT SKIN PERMEATION CAN OCCUR IN AMOUNTS CAPABLE OF PRODUCING SYSTEMIC TOXICITY. EFFECTS OF EYE CONTACT WITH AQUEOUS SOLUTIONS OF LESS THAN 5% MAY INCLUDE EYE IRRITATION WITH DISCOMFORT, TEARING, OR BLURRING OF VISION. HIGHER OR PROLONGED EXPOSURE MAY RESULT IN EYE CORROSION WITH CORNEAL OR CONJUNCTIVAL ULCERATION. CONTACT WITH AQUEOUS CONCENTRATIONS OF GREATER THAN 10% MAY RESULT IN EYE CORROSION WITH CORNEAL OR CONJUNCTIVAL ULCERATION WITH POSSIBLE IRREVERSIBLE EYE DAMAGE, INCLUDING BLINDNESS. OVEREXPOSURE BY INHALATION MAY CAUSE IRRITATION OF THE UPPER RESPIRATORY PASSAGES OR NONSPECIFIC DISCOMFORT SUCH AS NAUSEA, HEADACHE, OR WEAKNESS. HIGHER INHALATION EXPOSURES MAY LEAD TO TEMPORARY LUNG IRRITATION EFFECTS WITH COUGH, DISCOMFORT, DIFFICULTY BREATHING, OR SHORTNESS OF BREATH; OR FATALITY FROM GROSS OVEREXPOSURE. INGESTION MAY CAUSE IRRITATION OF THE GASTROINTESTINAL TRACT WITH UPPER ABDOMINAL PAIN, "HEARTBURN", NAUSEA, VOMITING, AND DIARRHEA. "COFFE GROUNDS" VOMITUS AND BLACK TARRY STOOLS MAY OCCUR AS A RESULT OF GASTROINTESTINAL TRACT BLEEDING. ADDITIONAL EFFECTS FROM OVEREXPOSURE INCLUDE RED BLOOD CELL DESTRUCTION, OR GAS EMBOLISM. WHEN USED AS COLONIC LAVAGE, HYDROGEN PEROXIDE HAS CAUSED GAS EMBOLISM AND GANGRENE OF THE INTESTINE AT CONCENTRATIONS DOWN TO 0.75%. GROSS OVEREXPOSURE BY INGESTION MAY BE FATAL. INDIVIDUALS WITH PREEXISTING DISEASES OF THE SKIN, EYES, OR LUNGS MAY HAVE INCREASED SUSCEPTIBILITY TO THE TOXICITY OF EXCESSIVE EXPOSURE.

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Section 04: FIRST AID MEASURES

INSTRUCTIONS:..... INHALATION.. IF INHALED, IMMEDIATELY REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT GIVE OXYGEN. CALL A PHYSICIAN. SKIN CONTACT.. IN CASE OF SKIN CONTACT, IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. CALL A PHYSICIAN. WASH CONTAMINATED CLOTHING AND SHOES PROMPTLY AND THOROUGHLY. EYE CONTACT.. IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IMMEDIATELY. INGESTION.. IF SWALLOWED, DO NOT INDUCE VOMITING. GIVE LARGE QUANTITIES OF WATER. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION IMMEDIATELY.

NOTES TO PHYSICIAN:..... IF SWALLOWED, LARGE AMOUNTS OF OXYGEN MAY BE RELEASED QUICKLY. THE DISTENTION OF THE STOMACH OR ESOPHAGUS MAY BE INJURIOUS. INSERTION OF A GASTRIC TUBE MAY BE ADVISABLE.

Section 05: FIRE FIGHTING MEASURES

FLAMMABILITY..... SEE FLASH POINT.
 IF YES, UNDER WHICH CONDITIONS?
 EXTINGUISHING MEDIA..... USE ONLY WATER.
 SPECIAL PROCEDURES..... FLOOD WITH WATER. COOL TANK/CONTAINER WITH WATER SPRAY. WEAR FULL PROTECTIVE CLOTHING (RUBBER SUIT AND BOOTS) INCLUDING CHEMICAL SPLASH GOGGLES OR HOOD AND SELF-CONTAINED BREATHING APPARATUS.

FLASH POINT (C), METHOD..... WILL NOT BURN.
 AUTO IGNITION TEMPERATURE..... N.A.P.
 UPPER FLAMMABLE LIMIT (% BY VOL.).... N.A.P.
 LOWER FLAMMABLE LIMIT (% BY VOL.)... N.A.P.

EXPLOSION DATA
 EXPLOSIVE POWER..... N.A.V.
 RATE OF BURNING..... N.A.V.
 SENSITIVITY TO STATIC DISCHARGE..... N.A.V.
 SENSITIVITY TO IMPACT..... N.A.V.

UNUSUAL FIRE AND EXPLOSION WILL NOT BURN, BUT DECOMPOSITION, WHICH MAY BE CAUSED BY HEAT OR CONTAMINATION WILL RELEASE OXYGEN WHICH WILL INCREASE THE EXPLOSIVE LIMIT RANGE AND BURNING RATE OF FLAMMABLE VAPOURS. STRONG OXIDIZER. CONTACT WITH CLOTHING OR COMBUSTIBLES MAY CAUSE FIRE. EFFECT MAY BE DELAYED. CONTACT WITH ORGANIC LIQUIDS OR VAPOURS MAY CAUSE IMMEDIATE FIRE OR EXPLOSION, ESPECIALLY IF HEATED. UNDER CERTAIN CIRCUMSTANCES, DETONATION MAY BE DELAYED. OXYGEN RELEASE FROM HYDROGEN PEROXIDE MAY FORCE ORGANIC OR HYDROGEN VAPOURS INTO AN EXPLOSIVE RANGE. FOLLOW APPROPRIATE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CODES.

HAZARDS
 HAZARDOUS COMBUSTION PRODUCTS.. SEE HAZARDOUS DECOMPOSITION PRODUCTS.

Section 06: ACCIDENTAL RELEASE MEASURES

NOTE..... REVIEW FIREFIGHTING MEASURES AND HANDLING SECTION BEFORE PROCEEDING WITH CLEAN-UP. USE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT DURING CLEAN-UP.

LEAK/SPILL..... COMPLY WITH FEDERAL, PROVINCIAL/STATE AND LOCAL REGULATIONS ON REPORTING RELEASES. FLOOD AREA WITH WATER AND DRAIN TO AN APPROVED CHEMICAL SEWER OR WASTEWATER TREATMENT SYSTEM, INCLUDING MUNICIPAL SEWERS IF APPROVED. MAY BE DETROYED WITH SODIUM METABISULFITE OR SODIUM SULFITE (1.9 LBS. SO₂ EQUIVALENT PER LB. PF PEROXIDE) AFTER DILUTING TO 5-10%. THE EXTREMELY HAZARDOUS SUBSTANCE LIST QUANTITY FOR >52% HYDROGEN PEROXIDE IS 1 LB. IF HYDROGEN PEROXIDE (20 TO 60%) IS SPILLED AND NOT RECOVERED, OR IS RECOVERED AS A WASTE FOR TREATMENT OR DISPOSAL, THE CERCLA REPORTABLE QUANTITY IS 100 LBS. (RELEASE OF AN UNLISTED HAZARDOUS WASTE CHARACTERISTIC OF IGNITIBILITY). 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.

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Section 07: HANDLING AND STORAGE

HANDLING PROCEDURES AND EQUIPMENT USE EXTREME CARE WHEN ATTEMPTING ANY REACTIONS BECAUSE OF FIRE AND EXPLOSION POTENTIAL (IMMEDIATE OR DELAYED). CONDUCT ALL INITIAL EXPERIMENTS ON A SMALL SCALE AND PROTECT PERSONNEL WITH ADEQUATE SHIELDING AS THE REACTIONS ARE UNPREDICTABLE AND MAY BE DELAYED, AND MAY BE AFFECTED BY IMPURITIES, CONTAMINANTS, TEMPERATURES, ETC. DO NOT GET IN EYES. DO NOT TASTE OR SWALLOW. AVOID CONTACT WITH SKIN AND CLOTHING. WASH THOROUGHLY AFTER HANDLING. AVOID CONTACT WITH FLAMMABLE OR COMBUSTIBLE MATERIALS. AVOID CONTAMINATION FROM ANY SOURCE INCLUDING METALS, DUST, AND ORGANIC MATERIALS. NEVER USE PRESSURE TO EMPTY DRUMS; CONTAINER IS NOT A PRESSURE VESSEL. IN THE EVENT OF AN ACCIDENT WHERE LARGE VOLUMES OF HYDROGEN PEROXIDE MIGHT COME INTO CONTACT WITH EXTERNAL FIRES OR WITH INCOMPATIBLE CHEMICALS, A ONE-HALF MILE AREA FROM THE INCIDENT SHOULD BE EVACUATED.

STORAGE NEEDS..... STORE IN A PROPERLY VENTED CONTAINER OR IN APPROVED BULK STORAGE FACILITIES. DO NOT BLOCK VENT. DO NOT STORE ON WOODEN PALLETS. DO NOT STORE WHERE CONTACT WITH INCOMPATIBLE MATERIALS COULD OCCUR, EVEN WITH A SPILL. HAVE WATER SOURCE AVAILABLE FOR DILUTING. DO NOT ADD ANY OTHER PRODUCT TO CONTAINER. NEVER RETURN USED OR UNUSED PEROXIDE TO CONTAINER, INSTEAD DILUTE WITH PLENTY OF WATER AND DISCARD. RINSE EMPTY CONTAINERS THOROUGHLY WITH CLEAN WATER BEFORE DISCARDING.

Section 08: EXPOSURE CONTROLS/PERSONAL PROTECTION

PROTECTIVE CLOTHING..... WHERE THERE IS POTENTIAL FOR SKIN CONTACT, HAVE AVAILABLE AND WEAR AS APPROPRIATE: IMPERVIOUS GLOVES, APRON, PANTS, JACKET, HOOD, AND BOOTS; OR TOTALLY ENCAPSULATING CHEMICAL SUIT WITH BREATHING AIR SUPPLY. PERMEATION DATA SUPPLIED BY VENDORS INDICATE THAT IMPERVIOUS MATERIALS SUCH AS NATURAL RUBBER, NATURAL RUBBER PLUS NEOPRENE, NITRILE, OR POLYVINYL CHLORIDE AFFORD ADEQUATE PROTECTION. DO NOT WEAR LEATHER GLOVES OR LEATHER SHOES (UPPERS OR SOLES) BECAUSE THEY CAN IGNITE FOLLOWING CONTACT WITH PEROXIDE. COTTON CLOTHING CAN ALSO IGNITE. THIS EFFECT MAY BE WITHIN MINUTES, OR DELAYED. CLOTHING FIRES AND SKIN DAMAGE OCCUR LESS QUICKLY WITH 50% OR LOWER HYDROGEN PEROXIDE THAN WITH 70% MATERIAL, BUT ADEQUATE PERSONAL PROTECTION IS ESSENTIAL FOR ALL INDUSTRIAL CONCENTRATIONS. PROTECTIVE SKIN CREAMS OFFER NO PROTECTION FROM HYDROGEN PEROXIDE AND SHOULD NOT BE USED. 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.

RESPIRATORY/TYPE..... WHERE THERE IS A POTENTIAL FOR AIRBORNE EXPOSURE IN EXCESS OF APPLICABLE LIMITS, WEAR NIOSH/MSHA APPROVED RESPIRATORY PROTECTION.

EYE/TYPE..... WEAR COVERALL CHEMICAL SPLASH GOGGLES. IN ADDITION, WHERE THE POSSIBILITY EXISTS FOR EYE OR FACE CONTACT DUE TO SPLASHING OR SPRAYING OF MATERIAL, WEAR CHEMICAL SPLASH GOGGLES/FULL-LENGTH FACE SHIELD COMBINATION.

OTHER/TYPE..... EYE BATH AND SAFETY SHOWER.

ENGINEERING CONTROLS..... USE SUFFICIENT VENTILATION TO KEEP EMPLOYEE EXPOSURE BELOW RECOMMENDED EXPOSURE LIMITS.

Section 09: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE..... CLEAR LIQUID.

ODOUR..... SLIGHTLY PUNGENT, IRRITATING.

ODOUR THRESHOLD..... N.AV.

EVAPORATION RATE..... >1.

VAPOUR PRESSURE (MMHG)..... N.AV. 17.4 (35%).

VAPOUR DENSITY (AIR=1)..... N.AV.

BOILING POINT..... 108 C (35%). N.AV.

PH..... N.AV.

SPECIFIC GRAVITY (WATER=1)..... N.AV. 1.13 (35%).

SOLUBILITY IN WATER (% W/W)..... 100 WT%.

COEFFICIENT OF WATER/OIL DIST..... N.AV.

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Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY:

YES

NO, WHICH CONDITIONS?..... UNSTABLE WITH HEAT OR CONTAMINATION; LIBERATION OF OXYGEN GAS MAY RESULT IN DANGEROUS PRESSURES.

COMPATABILITY WITH OTHER

SUBSTANCES:

NO, WHICH ONES?..... INCOMPATIBLE WITH MOST FLAMMABLES/ COMBUSTIBLES AS WELL AS CYANIDES, NITRIC ACID, POTASSIUM PERMANGANATE, AND MANY OTHER OXIDIZING AND REDUCING AGENTS. MIXTURE WITH BOTH ORGANICS AND SOME ACIDS MAY BE ESPECIALLY REACTIVE.

CONDITIONS TO AVOID:..... SEE ABOVE.

HAZARDOUS PRODUCTS OF DECOMPOSITION CONTAMINATION OR HEAT MAY CAUSE SELF-ACCELERATING EXOTHERMIC DECOMPOSITION WITH OXYGEN GAS AND STEAM RELEASE THAT CAN CAUSE DANGEROUS PRESSURES. MAY REACT DANGEROUSLY WITH RUST, DIRT, IRON, COPPER, HEAVY METALS OR THEIR SALTS, ALKALIS AND WITH ORGANIC MATERIALS.

HAZARDOUS POLYMERIZATION..... WILL NOT OCCUR.

Section 11: TOXICOLOGICAL INFORMATION

EXPOSURE LIMIT OF MATERIAL..... HYDROGEN PEROXIDE, PEL (OSHA): 1PPM, 1.4 MG/M3 (90%) - 8 HR TWA; TLV (ACGIH): 1PPM, 1.4 MG/M3 TWA, A3.

ANIMAL DATA

LC 50 OF MATERIAL, SPECIES & ROUTE.. INHALATION 8-HR: >2000 PPM IN RATS (90% H2O2).

LD 50 OF MATERIAL, SPECIES & ROUTE.. ORAL: 1232 MG/KG IN RATS (35% H2O2). SKIN ABSORPTION: >2000 MG/KG IN RABBITS (35% H2O2).

ADDITIONAL COMMENTS..... REPEATED INHALATION EXPOSURES PRODUCED NASAL DISCHARGE, BLEACHED HAIR, AND RESPIRATORY TRACT CONGESTION WITH SOME DEATHS OCCURRING IN RATS AND MICE EXPOSED TO CONCENTRATIONS GREATER THAN 67 PPM. DOGS EXPOSED BY INHALATION TO 7 PPM FOR 6 MONTHS HAD LUNG AND SKIN IRRITATION. THE EFFECTS FROM SINGLE LARGE ORAL DOSES INCLUDE CONVULSIONS. REPEATED ADMINISTRATION OF THE COMPOUND IN THE DIET OF ANIMALS RESULTED IN GROWTH INHIBITION, REDUCED WEIGHT GAIN, ABNORMAL LIVER FUNCTION, ULCERS, AND DISCOLORATION OF THE STOMACH LINING WITH SWELLING. LONG-TERM ADMINISTRATION TO MICE IN THE DRINKING WATER RESULTED IN GASTRIC EROSIONS AND DUODENAL HYPERPLASIA. AT AQUEOUS CONCENTRATIONS OF LESS THAN 50% HYDROGEN PEROXIDE SKIN IRRITATION OCCURS, BUT AT GREATER CONCENTRATIONS HYDROGEN PEROXIDE IS CORROSIVE TO THE SKIN. CONCENTRATIONS LESS THAN 5% IN AQUEOUS SOLUTIONS ARE EYE IRRITANTS, SOLUTIONS BETWEEN 5% AND 10% RANGE FROM SEVERE EYE IRRITANTS TO BEING CORROSIVE; CONCENTRATIONS GREATER THEN 10% ARE CORROSIVE TO THE EYE. THE COMPOUND IS NOT A SKIN SENSITIZER IN ANIMALS.

CARCINOGENICITY OF MATERIAL..... ONE STUDY BY SKIN APPLICATION SUGGESTED NO CARCINOGENIC ACTIVITY. RESULTS OF AN INGESTION STUDY WITH MICE SUGGESTED THAT HYDROGEN PEROXIDE MIGHT BE CARCINOGENIC. HOWEVER, THE FDA AND OTHER ORGANIZATIONS HAVE REVIEWED THIS STUDY AND CONCLUDED THERE IS INSUFFICIENT EVIDENCE THAT HYDROGEN PEROXIDE IS CARCINOGENIC. UNPUBLISHED , LONG-TERM STUDY WITH RATS REVEALED NO EVIDENCE OF CARCINOGENICITY.

REPRODUCTIVE EFFECTS..... FEMALE RATS TREATED WITH 10% HYDROGEN PEROXIDE PRODUCED OFFSPRING OF LOWER BODY WEIGHT AND SOME STRUCTURAL ABNORMALITIES, BUT THESE CHANGES WERE ATTRIBUTED TO MATERNAL TOXICITY. HYDROGEN PEROXIDE PRODUCED GENETIC DAMAGE TO BACTERIAL AND MAMMALIAN CELLS IN CULTURE, BUT ONE STUDY IN ANIMALS INDICATED IT DID NOT PRODUCE GENETIC DAMAGE. LIMITED TESTS IN ANIMALS DEMONSTRATE NO REPRODUCTIVE TOXICITY.

SYNERGISTIC MATERIALS..... N.AV.

Section 12: ECOLOGICAL CONSIDERATIONSENVIRONMENTAL TOXICITY AQUATIC TOXICITY: 96-HR LC50, CATFISH: 37.4 MG/L.
INFORMATION**Section 13: DISPOSAL CONSIDERATIONS**

WASTE DISPOSAL..... IN ACCORDANCE WITH MUNICIPAL, PROVINCIAL AND FEDERAL REGULATIONS.

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Section 14: TRANSPORT INFORMATION

TDG CLASSIFICATION..... HYDROGEN PEROXIDE, AQUEOUS SOLUTION; CLASS 5.1 (8); UN2014; P.G. II.
SPECIAL SHIPPING INSTRUCTIONS..... ERG# 140.

Section 15: REGULATORY INFORMATION

WHMIS CLASSIFICATION..... C. D1B. E. F.
CPR COMPLIANCE..... THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD
CRITERIA OF THE CPR AND THE MSDS CONTAINS ALL THE INFORMATION
REQUIRED BY THE CPR.

Section 16: OTHER INFORMATION

N.AP.=NOT APPLICABLE
N.AV.=NOT AVAILABLE