

CARBOXY METHYL CELLULOSE SOD.SALT (MED.VISCOSITY 200-300CPS)

GHS SAFETY DATA SHEET

Version No:2
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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

SODIUM CARBOXYMETHYLCELLULOSE

OTHER NAMES

(C30-H43-O26-Na3)n, "carboxymethyl cellulose", "cellulose, carboxymethyl ether, sodium salt", "cellulose gum", "sodium cellulose glycolate", "cellulose glycolic acid, sodium salt", Cellogen, Cellpro, Cellugel, Collowel, Copagel, CMC, Courlose, "C.N Cellulose", Daicel, "sodium CMC", PolycellCellolax, Aquaplast, Tylose, Blanose, Unisol, "Carbose 1M", Cehol, Carmethose, "Vegetable gum 466", Cellofas, Cellogel,

PRODUCT USE

Used in drilling muds; in detergents and soaps as a soil suspending agent; in resin emulsion paints; adhesives; printing inks; textile sizes; cosmetics; as pharmaceutical aid; food stabiliser and to coat paper. In food products (dietetic foods and ice cream) it acts as water binder, thickener, suspending agent and emulsion stabiliser. Specific pharmaceutical aid uses are as suspending agent, tablet excipient and viscosity-increasing agent.

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

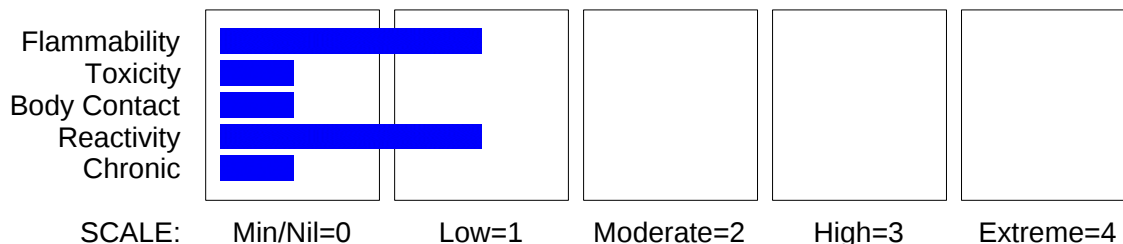
technical@sdfine.com

Telephone: 91- 22- 24959898

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HAZARD RATINGS



continued...

Section 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW**HAZARD**

- Not hazardous
- No hazards determined by using GHS criteria

PRECAUTIONARY STATEMENTS

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
sodium carboxymethylcellulose	9004-32-4	>99

Section 4 - FIRST AID MEASURES

SWALLOWED

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

EYE

- If this product comes in contact with eyes:
- Wash out immediately with water.
 - If irritation continues, seek medical attention.
 - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

- If skin or hair contact occurs:
- Flush skin and hair with running water (and soap if available).
 - Seek medical attention in event of irritation.

INHALED

- If dust is inhaled, remove from contaminated area.
- Encourage patient to blow nose to ensure clear passage of breathing.
- If irritation or discomfort persists seek medical attention.

NOTES TO PHYSICIAN

Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

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FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use fire fighting procedures suitable for surrounding area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD

- Solid which exhibits difficult combustion or is difficult to ignite.
- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.
- Dry dust can also be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.
- Build-up of electrostatic charge may be prevented by bonding and grounding.
- Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.
- All movable parts coming in contact with this material should have a speed of less than 1-metre/sec.

Combustion products include: carbon monoxide (CO), carbon dioxide (CO₂), metal oxides, other pyrolysis products typical of burning organic material.

FIRE INCOMPATIBILITY

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Wear impervious gloves and safety glasses.
- Use dry clean up procedures and avoid generating dust.
- Sweep up or
- Vacuum up (consider explosion-proof machines designed to be grounded during storage and use).
- Place spilled material in clean, dry, sealable, labelled container.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Control personal contact by using protective equipment and dust respirator.
- Prevent spillage from entering drains, sewers or water courses.
- Avoid generating dust.
- Sweep, shovel up. Recover product wherever possible.
- Put residues in labelled plastic bags or other containers for disposal.

- If contamination of drains or waterways occurs, advise emergency services.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

sodium carboxymethylcellulose 500 mg/m³

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

sodium carboxymethylcellulose 7.5 mg/m³

other than mild, transient adverse effects without perceiving a clearly defined odour is:

sodium carboxymethylcellulose 1.25 mg/m³

The threshold concentration below which most people will experience no appreciable risk of health effects:

sodium carboxymethylcellulose 0.4 mg/m³

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+ + + + + +

+: May be stored together

O: May be stored together with specific preventions

X: Must not be stored together

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.

- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

SUITABLE CONTAINER

Multi-ply paper bag with sealed plastic liner or heavy gauge plastic bag.

NOTE: Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse. Check that all containers are clearly labelled and free from leaks. Packing as recommended by manufacturer.

- Lined metal can, lined metal pail/ can.
 - Plastic pail.
 - Polyliner drum.
 - Packing as recommended by manufacturer.
 - Check all containers are clearly labelled and free from leaks.
- Glass container.

STORAGE INCOMPATIBILITY

Avoid contamination of water, foodstuffs, feed or seed.

Cellulose and its derivatives may react vigorously with calcium oxide, bleaching powder, perchlorates, perchloric acid, sodium chlorate, fluorine, nitric acid, sodium nitrate and sodium nitrite.

May be incompatible with aminacrine hydrochloride, chlorocresol, mercuric chloride, phenol, resorcinol, tannic acid and silver nitrate.

Avoid reaction with oxidising agents.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- sodium carboxymethylcellulose: CAS:9004- 32- 4 CAS:37231- 15- 5 CAS:9045- 95- 8
CAS:654655- 39- 7 CAS:454679- 81- 3 CAS:404943-
62- 0 CAS:198084- 97- 8 CAS:117385- 93- 0
CAS:82197- 79- 3 CAS:81209- 86- 1 CAS:80296- 93-
1 CAS:73699- 63- 5 CAS:55607- 96- 0 CAS:54018-
17- 6 CAS:50642- 44- 9 CAS:64103- 90- 8
CAS:247080- 55- 3 CAS:9085- 26- 1 CAS:12624- 09-
8 CAS:37231- 14- 4

MATERIAL DATA

These "dusts" have little adverse effect on the lungs and do not produce toxic effects or organic disease. Although there is no dust which does not evoke some cellular response at

sufficiently high concentrations, the cellular response caused by P.N.O.C.s has the following characteristics:

- the architecture of the air spaces remain intact,
- scar tissue (collagen) is not synthesised to any degree,
- tissue reaction is potentially reversible.

Extensive concentrations of P.N.O.C.s may:

- seriously reduce visibility,
- cause unpleasant deposits in the eyes, ears and nasal passages,
- contribute to skin or mucous membrane injury by chemical or mechanical action, per se, or by the rigorous skin cleansing procedures necessary for their removal. [ACGIH]

This limit does not apply:

- to brief exposures to higher concentrations
- nor does it apply to those substances that may cause physiological impairment at lower concentrations but for which a TLV has as yet to be determined.

This exposure standard applies to particles which

- are insoluble or poorly soluble* in water or, preferably, in aqueous lung fluid (if data is available) and
- have a low toxicity (i.e.. are not cytotoxic, genotoxic, or otherwise chemically reactive with lung tissue, and do not emit ionizing radiation, cause immune sensitization, or cause toxic effects other than by inflammation or by a mechanism of lung overload).

PERSONAL PROTECTION



EYE

- Safety glasses with side shields
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET

Suitability and durability of glove type is dependent on usage. Factors such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity,

are important in the selection of gloves.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids.

- polychloroprene

- nitrile rubber
- butyl rubber
- fluorocautchouc
- polyvinyl chloride

Gloves should be examined for wear and/ or degradation constantly.

OTHER

No special equipment needed when handling small quantities.

OTHERWISE:

- Overalls.
- Barrier cream.
- Eyewash unit.

RESPIRATOR

Protection Factor	Half- Face Respirator	Full- Face Respirator	Powered Air Respirator
10 x ES	P1 Air- line*	- -	PAPR- P1 -
50 x ES	Air- line**	P2	PAPR- P2
100 x ES	-	P3	-
		Air- line*	-
100+ x ES	-	Air- line**	PAPR- P3

* - Negative pressure demand ** - Continuous flow.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult your Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

· Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.

· If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered.

Such protection might consist of:

- (a): particle dust respirators, if necessary, combined with an absorption cartridge;
- (b): filter respirators with absorption cartridge or canister of the right type;
- (c): fresh-air hoods or masks.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:
 direct spray, spray painting in shallow booths,
 drum filling, conveyer loading, crusher dusts,
 gas discharge (active generation into zone of
 rapid air motion)
 grinding, abrasive blasting, tumbling, high
 speed wheel generated dusts (released at high
 initial velocity into zone of very high rapid
 air motion).

Air Speed:
 1- 2.5 m/s (200- 500 f/min.)

 2.5- 10 m/s (500- 2000 f/min.)

Within each range the appropriate value depends on:

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Lower end of the range

- 1: Room air currents minimal or favourable to capture
- 2: Contaminants of low toxicity or of nuisance value only.
- 3: Intermittent, low production.
- 4: Large hood or large air mass in motion

Upper end of the range

- 1: Disturbing room air currents
- 2: Contaminants of high toxicity
- 3: High production, heavy use
- 4: Small hood- local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

White to off-white, odourless, hygroscopic powder or granules.
Solubility in water depends on degree of substitution.
Very slowly degraded biochemically.

PHYSICAL PROPERTIES

Solid.
Does not mix with water.
Sinks in water.

Molecular Weight: 21, 000- 500, 000
Melting Range (°C): Not available.
Solubility in water (g/L): Partly miscible
pH (1% solution): 6.5- 8.0
Volatile Component (%vol): 8
Relative Vapour Density (air=1): Not applicable.
Lower Explosive Limit (%): Not applicable.
Autoignition Temp (°C): Approx. 370
State: Divided solid

Boiling Range (°C): Not applicable.
Specific Gravity (water=1): 1.59
pH (as supplied): Not applicable
Vapour Pressure (kPa): Not applicable.
Evaporation Rate: Not applicable
Flash Point (°C): Not applicable
Upper Explosive Limit (%): Not applicable.
Decomposition Temp (°C): Not available.
Viscosity: Not Applicable

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

Product is considered stable and hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS**ACUTE HEALTH EFFECTS****SWALLOWED**

Although ingestion is not thought to produce harmful effects (as classified under EC Directives), the material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

Large quantities of bulk laxatives may temporarily increase flatulence and distension. Intestinal obstruction may also occur. Oesophageal obstruction may also occur if the material is swallowed dry. Bulk laxatives lower the transit time through the gut and may affect the absorption of other drugs.

High molecular weight material; on single acute exposure would be expected to pass through gastrointestinal tract with little change / absorption. Occasionally accumulation of the solid material within the alimentary tract may result in formation of a bezoar (concretion), producing discomfort.

Polysaccharides are not substantially absorbed from the gastrointestinal tract but may produce a laxative effect. Larger doses may produce intestinal obstruction or stomach concretions.

Large quantities of the substituted polysaccharide, methylcellulose (as with other bulk laxatives), may temporarily increase flatulence. Oesophageal obstruction, by swelling, may occur if the material is swallowed dry.

Doses of 3-9 gm hydroxypropylcellulose, fed to human subjects, at least one week apart, were eliminated within 96 hours. Animals fed on diets containing 3% or less, experienced no adverse effects. Higher levels produced malnutrition due to excessive bulk but caused no organic damage. In one dog, an oral dose of hydroxypropylcellulose produced diarrhoea and blood cell depression.

Ingestion of hetastarch (hydroxyethyl amylopectin) has reportedly produced fever, chills, urticaria and salivary gland enlargement. Several of these effects may be due to contamination by other naturally occurring macromolecules extracted from the source material. Large volumes of ingested hetastarch may interfere with coagulation mechanisms and increase the risk of haemorrhage. Anaphylaxis has occurred.

Infusions of dextrans may occasionally produce allergic reactions such as urticaria, hypotension and bronchospasm. Severe anaphylactic reactions may occasionally occur and death may result from cardiac and respiratory arrest. Nausea, vomiting, fever, joint pains, and flushing may also occur. Similarly, allergic reactions, sometimes severe (but rare) have been reported following ingestion or inhalation of tragacanth gums.

EYE

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.

SKIN

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

INHALED

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

CHRONIC HEALTH EFFECTS

The material contains a substantial proportion of a polymer considered to be of low concern (PLC). The trend towards production of lower molecular weight polymers (thus reducing the required level of solvent use and creating a more "environmentally-friendly" material) has brought with it the need to define PLCs as those

- having molecular weights of between 1000 and 10000 and containing less than 10% of the molecules with molecular weight below 500 and less than 25% of the molecules with a molecular weight below 1000. These may contain unlimited low concern functional groups or moderate concern reactive functional groups with a combined functional group equivalent weight (FGEW, a concept developed by the US EPA describing whether the reactive functional group is sufficiently diluted by polymeric material) of a 1000 or more (provided no high concern groups are present) or high concern reactive functional groups with a FGEW of 5000 or more (FGEW includes moderate concern groups if present).
- having molecular weights exceeding 10000 (without restriction on reactive groups).

Reactive functional groups are in turn classified as being of low, moderate or high concern. Classification of the polymer as a PLC, in accordance with established criteria, does not mean that hazards will not be associated with the polymer (during its import, manufacture, use, storage, handling or disposal). The polymer may, for example, contain a large number of particles in the respirable range, a hazard which may need to be assessed in the health and safety risk assessment. Similarly a polymer with low concern reactive may be released into the environment in large quantities and produce an environmental hazard.

Whilst it is generally accepted that polymers with a molecular weight exceeding 1000 are unlikely to pass through biological membranes, oligomers with lower molecular weight and specifically, those with a molecular weight below 500, may. Estimations based on a "highly" dispersed polymer population (polydispersity = 10) suggests that the molecular weight of the polymer carrying a reactive group of high concern must be 5000 to be considered a PLC; similarly a polymer of approximate molecular weight 1000 could contain no more than one reactive group of moderate concern (for two moderate concern groups, the molecular weight would be about 2500).

Studies indicate that diets containing large amounts of non-absorbable polysaccharides, such as cellulose, might decrease absorption of calcium, magnesium, zinc and phosphorus.

TOXICITY AND IRRITATION**TOXICITY**

Oral (rat) LD50: 27000 mg/kg

Oral (rat) TDLo: 140 mg/kg

Neoplastic by RTECS criteria

IRRITATION

Nil Reported

Section 12 - ECOLOGICAL INFORMATION

Cellulosic products, including cellulose ethers, generally have a low biodegradation rate and are generally of low toxicity to fish.
Sugar-based compounds (saccharides), including polysaccharides are generally easily decomposed by biodegradation. Not all polysaccharides decompose with equal rapidity, and polysaccharides are also synthesised by microorganisms during, for example, the compost maturation phases. Water-insoluble species such as cellulose take longer to decompose and those with a significant degree of branching also take longer.

Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: Burial in a licenced land-fill or Incineration in a licenced apparatus (after admixture with suitable combustible material)
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA,
IMDG

Section 15 - REGULATORY INFORMATION

REGULATIONS

sodium carboxymethylcellulose (CAS: 9004-32-4) is found on the following regulatory lists
;
CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food
in General, Unless Otherwise Specified, in Accordance with GMP
OECD Representative List of High Production Volume (HPV) Chemicals

No data available for sodium carboxymethylcellulose as CAS: 37231-15-5, CAS: 9045-95-8,
CAS: 654655-39-7, CAS: 454679-81-3, CAS: 404943-62-0, CAS: 198084-97-8, CAS: 117385-93-0,
CAS: 82197-79-3, CAS: 81209-86-1, CAS: 80296-93-1, CAS: 73699-63-5, CAS: 55607-96-0, CAS:
54018-17-6, CAS: 50642-44-9, CAS: 64103-90-8, CAS: 247080-55-3, CAS: 9085-26-1, CAS:
12624-09-8, CAS: 37231-14-4.

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
sodium carboxymethylcellulose	9004- 32- 4, 37231- 15- 5, 9045- 95- 8, 654655- 39- 7, 454679- 81- 3, 404943- 62- 0, 198084- 97- 8, 117385 - 93- 0, 82197- 79- 3, 81209- 86- 1, 80296- 93- 1, 73699- 63- 5, 55607- 96- 0, 54018- 17- 6, 50642- 44- 9, 64103- 90- 8, 247080- 55- 3, 9085- 26- 1, 12624- 09- 8, 37231- 14- 4

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

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